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Impact of a Narrative Language Intervention on Language, Behavior, and Self-Concept among Bilingual Children with Developmental Language Disorder

Nancy Tarshis MA, MS, CCC-SLP
Albert Einstein College of Medicine


Kathleen McGrath MSS, LSW
Albert Einstein College of Medicine

Ida Barresi MA, CCC-SLP
Albert Einstein College of Medicine

Risa Battino MS, CCC-SLP, BCS-F

Albert Einstein College of Medicine

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 Sarah Henderson MEd, MS, CCC-SLP
Albert Einstein College of Medicine
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Authors

Nancy Tarshis MA, MS, CCC-SLP; Kathleen McGrath MSS, LSW; Ida Barresi MA, CCC-SLP; Risa Battino MS, CCC-SLP, BCS-F; Sarah Henderson MEd, MS, CCC-SLP; Shankar Viswanathan DrPH; Jee-Young Moon PhD; and Karen Bonuck PhD

Impact of a Narrative Language Intervention on Language, Behavior, and Self-Concept Among Bilingual Children with Developmental Language Disorder

Nancy Tarshis, Kathleen McGrath, Ida Barresi, Risa Battino, Sarah Henderson, Shankar Viswanathan, Jee-Young Moon, and Karen Bonuck

Albert Einstein College of Medicine, Bronx, NY

Plain Language Summary

Persons with a developmental language disorder (DLD) often have trouble using language. Narrative language therapy (NLT) can improve language skills. NLT focuses on telling and retelling stories, including stories about oneself. We studied a 10-session NLT program among bilingual children and adolescents with DLD. The study compared 3 outcomes before and after the program. These were: narrative language skills, behaviors, and self-image. In all, 33 children ages 6-16 participated and provided data before and after the narrative intervention. About 60% were bilingual. After the program, narrative skills, social skills and competence, and self-image improved. More research with a bigger sample is needed.

Abstract

The growing research on narrative interventions is promising but has gaps regarding cultural/linguistic diversity and outcomes beyond language. We evaluated whether a structured, oral narrative intervention affects narrative language, problem behaviors, and self-concept in a diverse group of children with developmental language disorder. A 10-session intervention was implemented within routine care. Baseline and follow-up data included: (a) Narrative recordings—coded by therapists using the CUBED Narrative Language Measure, (b) Child Behavior Checklist—a parent-reported behavioral assessment, and (c) the Piers-Harris Children's Self-Concept Scale. Among the sample's $n = 33$ children, aged 6-16, 55.6% were bilingual. Post intervention, participants' narrative language scores improved across all domains and showed moderate to large effect sizes, with 3 out of 4 categories attaining statistical significance. Total and social competence

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Correspondence concerning this article should be addressed to Kathleen McGrath, MSS, LSW, Sr. Research Coordinator, Albert Einstein College of Medicine, Dept. of Pediatrics, 1300 Morris Park Ave, Bronx, NY 10461. Email: kathleen.mcgrath@einsteinmed.edu.



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scores on the Child Behavior Checklist (CBCL) also increased ($p < .05$) post intervention, again revealing moderate to large effect sizes. Although not statistically significant (potentially due to small sample size), participants' self-concept total scores improved on the Piers-Harris, as well as on 5 out of 6 subscales. In this linguistically diverse sample, narrative language, story coherence, and personal competency measures improved, attaining statistical significance. Self-concept scores also improved post-intervention, although statistical significance was not attained. Further research in larger samples is warranted.

Introduction

The ability to tell your story—to share your thoughts and feelings—carries both mental and physical health benefits. Sharing a story is the basis of most social encounters—be they in person, in writing, or on the phone. Think back to the last happy event in your life or one that was very sad. What was your second instinct after taking in what happened? Most likely, it was to share your story with a family member or friend. Sharing stories is how we function in a social setting (Bluck et al., 2005; Koivula et al., 2020; Vanaken et al., 2021; Vanaken & Hermans, 2020, 2021; Westby & Culatta, 2016). Yet, the ability to tell a narrative—beginning, middle, and end—is quite complex. Generating a cohesive narrative requires ability in all domains of language, including phonological, pragmatic, semantic, syntactic, and morphological skills (Berman & Slobin, 2013; Spencer & Petersen, 2020; Vanaken et al., 2022). Successful narrative construction further requires an understanding of the causal, logical, and temporal relationships between specific events (Bauer et al., 2022; Duinmeijer et al., 2012; Grysman & Mansfield, 2017; McLean et al., 2020; Yenen, 2023) to make the telling understandable to yourself and others. We use memories from the past, perceptions of the present, and expectations for the future to structure cohesive, plausible narratives (Storr, 2020; Wise, 2016).

Narrative generation requires a complex array of cognitive-linguistic abilities and depends on multiple neurological processes (Duinmeijer et al., 2012; Pauls & Archibald, 2021; Wise, 2016). At the foundation of a successful narration is a thorough understanding of the storyteller's audience. Theory of mind (the ability to attribute mental states to us and others) and perspective-taking (the ability to recognize another person's thoughts, beliefs, feelings, and emotions) are two critical components of successful narrative generation and overall social functioning (Cole & Millett, 2019; Healey & Grossman, 2018; Kumar et al., 2023; Lam, 2019; Quesque & Rossetti, 2020). Narrative language and perspective-taking skills in children are strongly interrelated, although the specific mechanisms through which narrative generation impacts theory of mind development and social-cognitive functioning is an evolving area of study (Gamannossi & Pinto, 2014; Koivula et al., 2020; Storr, 2020; Tompkins et al., 2019). For example, in a longitudinal study of 231 children from preschool through early adolescence, Ebert (2020) discovered a bidirectional relationship between measures of language skill and theory of mind. More specifically, early-life language abilities were found to be a predictor of theory of mind later in life, and vice-versa (Ebert, 2020).

Narrative language interventions—which include the telling and/or retelling of stories—

can be used to teach a variety of socially and academically meaningful skills such as story grammar, semantics, syntax, morphology, complex language, vocabulary, social pragmatics, and inferencing (Spencer & Petersen, 2020). Personal narratives follow a typical developmental trajectory, beginning with an understanding of self, around 24 months of age. By 3 years, children can participate in conversations about past events, and by 5 years, they relate their past experiences to others. Concurrent with this maturational shift, their personal narratives become increasingly complex. Complete episode narratives, typically achieved by age 9, include an initiating event, response, plan, attempt, consequence and resolution (Westby & Culatta, 2016). Defining a successful narrative has multiple parts. There is the overall structure—often referred to as a story grammar—as well as coherence, defined below.

Constructed oral narratives exhibit three forms of coherence: temporal, causal, and thematic (Duinmeijer et al., 2012; Habermas & Bluck, 2000; McLean et al., 2020; Vanaken et al., 2021; Vanaken & Hermans, 2021; Wise, 2016). *Temporal coherence* refers to chronology—the ordering of events within a story—and context—the orientation to place and time (Köber & Habermas, 2017; K. Nelson & Fivush, 2020; Reese et al., 2011). *Causal coherence* involves narrative complexity (identifying multiple perspectives), meaning making (understanding of events through lessons learned), and self-meaning making (connecting lessons to self; Grysman & Hudson, 2010; Habermas, 2011; Hartog et al., 2020; Hosseini, 2022; Mitchell et al., 2020). Finally, *thematic coherence* is achieved when similarities in life events are linked by a central idea. Thematic coherence incorporates topic maintenance and thematic impact of memories on self (Bauer et al., 2022; Grysman & Mansfield, 2017; Reese et al., 2011, 2017; Yenen, 2023). Children and adolescents who develop a coherent life story narrative may demonstrate a stronger and more stable sense of identity, aiding in self-concept, emotional regulation, and social problem-solving (Mitchell et al., 2020; Vanaken et al., 2022, 2021; Vanaken & Hermans, 2020, 2021; Vanderveren et al., 2019, 2020; Westby & Culatta, 2016).

Narrative Language and Developmental Language Disorder

Developmental language disorder (DLD), previously categorized as specific language impairment (SLI), is a neurodevelopmental disorder of unknown etiology that impedes a child's receptive and expressive language abilities—including one's ability to read, write, speak, and listen (Bishop et al., 2017; Leonard, 2014; National Institute on Deafness and Other Communication Disorders, 2023; Reilly et al., 2014). Presently, DLD is one of the most common neurodevelopmental disorders and has an estimated prevalence of 6-8% among all children (Calder et al., 2022; Kraljevic, 2023; McGregor, 2020; Norbury et al., 2016; Rethfeldt et al., 2023; Tomblin et al., 1997; Wu et al., 2023). For the past several decades, SLI has been the dominant diagnostic term among clinicians and researchers (Green, 2020). However, in 2017, the expert panel on Criteria and Terminology Applied to Language Impairments: Synthesizing the Evidence (CATALISE) convened and reached consensus for a new diagnostic terminology “developmental language disorder” (Bishop, 2017; Bishop et al., 2016, 2017; Hasson et al., 2000; Kraljevic, 2023).

Children with DLD may experience difficulties with one, or several, components of language production, including language form (morphology, syntax, phonology), language

content (semantics), and language use (pragmatics; Bishop et al., 2017; Seiger-Gardner, 2009). As such, story narration can be challenging for a person with language deficits in these areas. Typically, children with language impairment exhibit a better mastery of story *comprehension* than story *generation*. That is, expressive oral narration skills can be more challenging than receptive narration skills (Blom & Boerma, 2016). Persons with DLD also experience functional disability in academic (Dockrell et al., 2011; Norbury et al., 2016; Young et al., 2002), communicative (Clegg et al., 2021; Ekström et al., 2023; Lyons & Roulstone, 2018; McGregor et al., 2023; Rost & McGregor, 2012) and social, emotional, and behavioral areas (Brinton et al., 1997; Burnley et al., 2023; Conti-Ramsden et al., 2019; Janik Blaskova & Gibson, 2021; Mok et al., 2014; Van den Bedem et al., 2020) because of language-related difficulties.

When compared with typically developing peers, children with DLD (or a history of DLD) also tend to struggle with narrative *macrostructure* (i.e., overarching story structure) when generating stories (Köber & Habermas, 2017; Manhardt & Rescorla, 2002; Paul et al., 1996; Paul & Smith, 1993; Vandewalle et al., 2012). Blom and Boerma (2016) attribute this difficulty to problems with sustained attention, but also note that differences in narrative abilities between typically developing children and children with DLD tend to dissipate with age. Multiple studies also suggest that children with DLD do not perform as well as their typically developing peers in *microstructure* narrative abilities, including the use of complex sentence structure, main and subordinate clauses, word utterance length, syntactic complexity, word roots, and vocabulary (Norbury & Bishop, 2003; Paul et al., 1996; Paul & Smith, 1993; To et al., 2010; Vandewalle et al., 2012).

Disparities in DLD Research and Practice

Historically, children with DLD have been both underserved and underdiagnosed (Armon-Lotem & Meir, 2016; McGregor, 2020; Morgan et al., 2015, 2017). Because of the sometimes subtle and invisible nature of the condition (Kraljevic, 2023), DLD is more frequently diagnosed among children with co-occurring disorders—including autism (Dockrell et al., 2019; Gupta et al., 2007), dyslexia (Adlof & Hogan, 2018), and speech sound disorders (Skeat et al., 2010; Zhang & Tomblin, 2000)—than those without. There are over 100 terms used in research across various disciplines to describe children with DLD (Bishop, 2014). Unfortunately, these terms do not necessarily align with terminology used by clinicians, insurance companies, and policymakers, who typically use diagnoses from the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (American Psychiatric Association, 2013) or the World Health Organization's (2020) *International Classification of Diseases* (Georgan & Hogan, 2020; Leonard, 2020; Schuele & Hadley, 1999). As such, this inconsistent terminology may contribute to disparities in diagnosis among children with DLD (Georgan et al., 2023).

Research on bilingual and multilingual with DLD is sparse. Differentiating language difference versus language disorder among children who speak more than one language can be challenging, resulting in disparities in diagnosis (Morgan et al., 2015). Presently, there are no established estimates of DLD among multilingual populations (Rethfeldt et al., 2023). Language assessments in the speech-language field are often designed and standardized for monolingual

English speakers (Armon-Lotem & Meir, 2016; M. Nelson & Wilson, 2021). Additionally, research studies on children with DLD have historically excluded children who come from bi/multilingual households (Kohnert et al., 2022; Tomblin et al., 1997). Recent research has demonstrated many advantages to speaking more than one language. However, children who are bi/multilingual demonstrate reduced vocabulary as well as morphosyntactic and word-reading difficulties like that in children with DLD (de Bree et al., 2022; Ducoli, 2023; Garraffa et al., 2020; Vender et al., 2018). Because of the difficulty in distinguishing typical language from DLD in bi/multilingual children, DLD tends to be both over-diagnosed and under-diagnosed in this population (Ducoli, 2023; Haman et al., 2015; McGregor, 2020; Ortiz, 2022; Paradis et al., 2017; Peristeri et al., 2017; Schulz, 2015).

Language and Social-Emotional-Behavioral Skills

Children with DLD often experience co-occurring difficulties with reading, mathematics, executive function, and behavioral functioning starting in pre-school and continuing through elementary school (Adlof & Hogan, 2018; Harrison et al., 2009; McCormack et al., 2011; Morgan et al., 2015; Morgan et al., 2012; Wittke & Spaulding, 2018). For example, a prospective, case-control study of Turkish children with and without DLD ($n = 68$) revealed that children with language difficulties scored significantly higher across the following Child Behavior Checklist (CBCL) domains—emotional reactivity, depression, anxiety, attention problems, sleep problems, withdrawnness, somatic complaints, and aggressive behaviors (Özcebe et al., 2020). Having a language disorder also increases a child's risk for academic, emotional, and behavioral problems later in life (Aguilar-Mediavilla et al., 2014; Catts et al., 2002; Spaulding et al., 2008; Yew & O'Kearney, 2013). Both children and adolescents with DLD are more likely to exhibit adjustment issues, including emotional and behavioral difficulties, than their peers without DLD (Bakopoulou & Dockrell, 2016; Lindsay, Dockrell, & Strand, 2010; Marton et al., 2005; St Clair et al., 2011; Yew & O'Kearney, 2013, 2015).

Preschool age and younger children with DLD are more likely to exhibit **externalized** problem behaviors including hyperactivity, aggressiveness, distractibility, and difficulty following instructions (Bakopoulou & Dockrell, 2016; McCabe, 2005; Özcebe et al., 2020; Rost & McGregor, 2012). However, older children and adolescents with DLD are more likely to experience both **internalized and externalized** challenges including emotional dysregulation, anxiety, depression, emotional disturbances, low self-esteem, shyness, poor psychological functioning, and heightened stress in social situations (Burnley et al., 2023; Conti-Ramsden & Durkin, 2008; Conti-Ramsden et al., 2013; Conti-Ramsden & Botting, 2008; Conti-Ramsden & Durkin, 2016; Durkin & Conti-Ramsden, 2010; Lindsay, Dockrell, & Palikara, 2010; Lindsay & Strand, 2016; Samson et al., 2020; St Clair et al., 2019; Van den Bedem et al., 2018; Voci et al., 2006; Wadman, Botting, et al., 2011; Wadman et al., 2008; Wadman, Durkin, et al., 2011; Yew & O'Kearney, 2013). Children and adolescents with DLD tend to exhibit behavioral adjustment problems and emotional disturbances more often than their typically developing peers (Bakopoulou & Dockrell, 2016; Durkin & Conti-Ramsden, 2010; Lindsay, Dockrell, & Strand, 2010; Özcebe et al., 2020; St Clair et al., 2011; Yew & O'Kearney, 2013, 2015). More recent research has been dedicated to exploring the mediating pathways between language abilities and social-emotional-behavioral skills. For

example, a population cohort study of 14,494 children revealed that early-life language difficulties negatively impact development of both parent-directed and peer-directed social skills, as well as emotional self-regulation abilities (St Clair et al., 2019). Similar findings have been observed in additional studies on this topic (Brinton & Fujiki, 2019; Dubois et al., 2020; Forrest et al., 2021; Lloyd-Esenkaya et al., 2020; Van den Bedem et al., 2020).

Children and teens with DLD are at increased risk for a broad spectrum of internal and external social-emotional and behavioral challenges, including negative self-concept and self-esteem. Self-concept, which strongly correlated with self-esteem (Pittari & Brown, 2020), is a pivotal component of human development and involves a gradual, progressive construction of “self” throughout the lifespan (Cordeiro et al., 2021). A person’s surrounding environment, communication abilities, and interpersonal relationships deeply impact how one’s self-concept is constructed (Carneiro et al., 2003; Castro et al., 2015; Harter, 2015; Muniz & Fernandes, 2016; Oliveira et al., 2017). Within the psychology field, the constructs of self-concept and self-esteem both fall under the umbrella of “self-perception.” Self-concept is defined as one’s cognitive perception of self (a descriptive, more objective account of self—“*what*” someone thinks about themselves), while self-esteem reflects “*how*” someone feels about themselves (a more subjective opinion of self; Silvestri et al., 2018; Smith & Conrey, 2007).

Narrative inquiry, storytelling, and the ability to create autobiographical narratives are integral components of identity construction and self-perception (de López & Lyons, 2020). For the purposes of this study, we plan to assess the impact of a narrative language intervention on narrative language outcomes, internalized and externalized problem behaviors (measured via the CBCL), and self-concept (measured via the Piers-Harris Self-Concept Scale, Second Edition) among bilingual children and teens with DLD. As evidenced by past and current research, language ability is closely linked to behavior and self-concept in children, teens, and young adults. Language ability and pro-social behaviors have been shown to serve as protective factors against social, behavioral, and emotional difficulties for children with DLD (Abbot-Smith et al., 2023; Conti-Ramsden et al., 2019; Dall et al., 2022; Forrest et al., 2020; Francis et al., 2022; Goh et al., 2021; Suryana et al., 2020; Toseeb et al., 2023). For this reason, we anticipate that a narrative language intervention will likely prove beneficial across these domains.

Previous Research on Narrative Interventions

To the best of our knowledge, the first research study to evaluate the impact of a narrative intervention was conducted by Klecan-Aker at the University of Oklahoma in 1993 (Klecan-Aker, 1993). A 12-week narrative intervention—also known as the Expression Connection Program—was administered to an 8-year-old child with a language disorder and learning disability. Post-intervention, a noted improvement in the child’s narrative and sentence complexity was observed. In its essence, the Expression Connection Program aimed to facilitate story-grammar skills in children with language disorder via a narrative intervention. Klecan-Aker and colleagues continued their research on the efficacy of the Expression Connection Program in later studies (Green & Klecan-Aker, 2012; Klecan-Aker, 1993).

Nicolopoulou and Trapp (2018) also completed a systematic review of narrative intervention studies among children with language disorder. This review featured empirical studies published between 1990 and 2014. Methodological requirements included randomized control trials, experimental vs. control, single group, and single subject designs. All studies included either a story-based or book-based narrative intervention for children with language impairment, specific language impairment, or children *at-risk* for language problems. A total of 12 studies met eligibility criteria. Nicolopoulou and Trapp used eight of the same studies as Petersen (2011), excluded 2 (Peña et al., 2006; Tyler & Sandoval, 1994) and included four additional studies. Unlike those studies reviewed by Petersen, two studies evaluated the impact of narrative intervention of at-risk children in a Head Start program (McGregor, 2000; Spencer & Slocum, 2010). Although one method of narrative intervention did not prove more effective than others, improvements in story grammar and macrostructure abilities were seen across all studies. Most studies on narrative intervention efficacy only included children of European-American descent.

More recently, several reviews have been conducted to assess the state of the literature on narrative interventions among children, both with and without language disorders. In an extension of Petersen's (2011) review, Favot et al. (2021) conducted a systematic review to evaluate the efficacy, quality, and common features of oral narratives interventions on the narrative ability of children with language disorders. Eligibility criteria for articles included: single case studies and group designs, publication date between 1993 and 2018, study participants aged 0-18 years with a language disorder, implementation of a narrative intervention, and narrative skills (e.g., microstructure, macrostructure) as the primary dependent variables. A total of 24 articles met inclusion criteria, including 11 single case research studies, 10 group research studies, 1 combined single/group case design, and 2 case studies. Among studies where the linguistic status of participants was disclosed, only two (Miller et al., 2018; Spencer et al., 2013) included bilingual participants.

Pico et al. (2021) conducted a subsequent systematic review of studies that evaluate the impact of various experimental or quasi-experimental interventions on narrative language outcomes among preschool and elementary school-age children. A total of 40 studies published between 1980 and 2020 met inclusion criteria and featured 16 single-case study designs and 24 group study designs. Across all included studies, there were $n = 1,597$ participants, $n = 941$ of whom participated in an intervention. Most participants identified with some type of diverse learner characteristics, both with and without language disorders. Based off Pico et al.'s review, it appears that research investigating narrative language outcomes are beginning to include bilingual children. Among the 40 articles listed, a total of $n = 9$ studies featured Spanish-English bilingual participants with various learning disabilities. These articles were not, however, solely inclusive of bilingual children with DLD.

While research on bilingualism is growing, there is still need for more focus on bilingual children with DLD. Furthermore, studies on narrative language interventions have primarily assessed monolingual English speakers. To our knowledge, more research is needed to assess the impact of narrative language interventions on social, emotional, and behavioral outcomes

(including internalizing and externalizing behaviors) known to be associated with DLD (Bichay-Awadalla et al., 2020; Curtis et al., 2018; Durand & Moskowitz, 2019; Jansen et al., 2020). This paper reports on a standardized, oral narrative intervention conducted during clinical care with a diverse cohort of children with DLD, over half of whom were bilingual and of Hispanic/Latino ethnicity, and many of whom were with lower socioeconomic means.

Research Question and Aims

In our present study, we address the following research question: Does a structured, oral narrative intervention improve narrative language abilities, reduce problem behaviors, and improve self-concept among a culturally and linguistically diverse group of children with DLD? Our specific study aims are as follows.

1. Evaluate the efficacy of a standardized, 10-session, oral narrative intervention in improving narrative language abilities among a culturally and linguistically diverse group of children with DLD.
2. Determine if an oral narrative intervention is associated with reduced internalizing and externalizing problem behaviors in children with DLD.
3. Determine if an oral narrative intervention is associated with improved self-concept among children with DLD.

We hypothesize that our proposed narrative intervention will improve narrative language abilities, reduce problem behaviors, and increase positive self-concept among participants in this study.

Methodology

Setting

This study was conducted at the Rose F. Kennedy Children's Evaluation and Rehabilitation Center (RFK CERC)—Albert Einstein College of Medicine and Montefiore Medical System—in the Bronx, New York. RFK CERC is an interdisciplinary care center that provides diagnostic and clinical services to children and adults with developmental and intellectual disabilities. Apart from speech and language therapies, more than a dozen other discipline services are offered. A bilingual team of speech-language pathologists (SLPs) provide evaluation and treatment for children referred by outside physicians, schools, and other professionals. SLP full scope services at RFK CERC include language disorders, speech sound disorders, fluency, feeding, and social cognition.

Sample Selection

Participants were recruited from an original group of 50 children receiving weekly speech-

language services at RFK CERC for language, social, and/or cognition deficits. This study was conducted during routine SLP treatment. As such, services were continued as usual for those who declined to participate in the study.

Eligibility Criteria

To be eligible for study participation, children must have (at the time of recruitment) been: (1) receiving speech-language services at RFK CERC, (2) aged of 4-16 years, and (3) have parents or primary caregivers who spoke either Spanish or English.

Informed Consent

Parents/caregivers were provided written and verbal informed consent in both English and Spanish. Spanish-speaking parents were consented either with a bilingual SLP or via translation services.

Ethics Review

This study was reviewed and approved by Albert Einstein College of Medicine's Institutional Review Board and deemed a minimal risk study (*IRB #2017-7759*).

Narrative Language Intervention

Narrative Language Elicitation: Baseline and Follow-up

It is standard of care for SLPs to audio-tape children throughout treatment. For this study, children were prompted to complete a verbal narrative exercise at baseline and follow-up. These verbal narrative exercises were audio-recorded and scored by SLPs (discussed in further detail below). Narrative stimuli for both the baseline and follow-up narrative exercises were obtained from the *School-Age Language Assessment Measure (SLAM)* materials (Leaders Project, 2023). These language-elicitation cards and questions were designed to elicit a sample of natural language for analysis that incorporates one's cultural, educational, and linguistic background. Additionally, these samples allow for analysis of narrative macrostructure, narrative microstructure, and temporal, causal, and thematic coherence abilities. As part of this task, children were asked to sequence a series of cards into a coherent structure and then recount the story. Subsequently, the child was offered a prompt to provide context and serve as a basis for their personal narrative (e.g., "Tell me about a time when you lost something"; "Have you ever been blamed for something you did not do?").

Narrative Language Intervention

After elicitation of the baseline sample, a standardized protocol was implemented across 10 sessions over the course of 10-15 weeks, depending on participants' availability to come into the clinic. This intervention was designed to improve narrative language competence and target

a variety of discrete language skill areas including narrative microstructure, narrative macrostructure, autobiographical stories (reminiscing), story grammar elements, temporal and causal coherence, and perspective taking. Although the intervention was standardized as much as possible and followed a specific protocol, each child was given an individual plan to meet their needs and goals. Individual plans took into consideration the child's language ability, age, and motivation to participate. Lessons and follow-up activities included drawings, videos, stories, and music/songs as prompts and models for a variety of narrative elements.

Session 1: During the first session, the SLPs provided a foundation for both understanding and producing autobiographical stories through a series of tasks (e.g., asking the participant to define themselves through art, word clouds, etc.). This session was also intended to help the participants better understand their own sense of self. Discussions were facilitated and included topics such as: (1) why certain life experiences were important, (2) what it meant for who the person was, and (3) how these experiences may influence who the person will become. To enhance autobiographical memory, clinicians reminisced with children about recent experiences and facilitated context-driven discussions around people, places, intentions, and deeper meanings. To promote the development of personal event narratives, clinicians helped participants retrieve information about interesting events and drew upon published narratives to serve as model texts. To enhance autobiographical memory, clinicians also facilitated context-driven discussions regarding people, places, intentions, and deeper meanings.

Sessions 2-3: In Sessions 2-3 of the narrative intervention, clinicians read several books to study participants and facilitated discussion centered on the participants' opinions on the stories—specifically, whether they viewed them as a good story or not. Exploration and assessment of the participant's knowledge of story parts was initiated by the SLPs. Participants were encouraged to put themselves in the position of the story's protagonist, to consider their actions and reactions, and explore the underlying motivations behind them. Children were also asked to study a specific character and asked a series of related questions (e.g., "Who was your favorite character? Why?", "Is there anyone in the book who reminds you of yourself?", "How is that character like you?"). During Sessions 2-3, participants were also introduced to the concept of narrative macrostructure (which is the organizational structure of a story), as well as story grammar components and episode structure. Research confirms that a story grammar intervention is an effective strategy for improving narrative proficiency and the ability to tell a coherent story (Heilmann et al., 2010).

Sessions 4-6: During Sessions 4-6, clinicians continued their curriculum on narrative macrostructure and more specific elements of story grammar. The story grammar elements taught during these sessions included characters, settings (e.g., school, home, library, etc.), initiating event, internal response, plan, attempt, consequence, and resolution. Clinicians proposed these concepts in several ways, including anchor texts and narrations of personal experience. In addition to learning about physical settings, participants also learned about emotional settings, including internal and external character traits, as well as situational awareness. Clinicians highlighted the importance of story setting and its ability to set the mood, influence the way characters behave, impact dialogue, foreshadow events, invoke emotional

responses, and represent the society in which the characters live. The narrative intervention curriculum during Sessions 4-6 also focused on character identification and roles within a story. Character development is an important element of short stories, as characters drive the story as a whole and create conflicts, tensions, and resolutions. Participants were asked to identify characters' emotions, internal thoughts (to enhance perspective-taking skills), internal and external personality traits, and problem-solving abilities. Additionally, participants were taught the importance of connecting story elements via situational awareness skills.

Sessions 7-9: During Sessions 7-9, several additional story grammar elements were introduced and reviewed. Clinicians taught participants about, and provided examples of temporal, thematic, and causal coherence used in storytelling and narrative generation. Participants were also exposed to new tools entitled "The Critical Thinking Triangle" and "The Story Grammar Marker" (MindWing Concepts, 2024). These tools, along with other standardized components of the narrative intervention, were used to help facilitate children's narrative development, story-telling abilities, writing, comprehension, personal narratives, and social communication skills. The Critical Thinking Triangle is a tool used to facilitate autobiographical thinking and consists of five primary elements: (1) kick-off or problem (resulting in a change to setting), (2) emotions and feelings, (3) mental states, verbal states, and thought processes, (4) plans and intentions to determine actions, and (5) cohesive ties (conjunctions) to build complex sentence structure and communicate a story. For example, children were asked to provide responses to narratives, such as: "What was the best part of the book? The worst part?" "If you could talk to anyone in this book, who would you choose and what would you say?"

Session 10: The final session, Session 10, was primarily intended to facilitate children's perspective-taking abilities. Perspective-taking allows a person to see things from another person's point of view and understand how that person thinks and feels. It also allows one to experience and convey empathy and is an essential social-communication skill used in social interactions and interpersonal relationships. Because children with DLD can have trouble with perspective-taking, the last session focused on utilizing narrative remediation and complex morphosyntactic forms. The final session focused on expression of motives and plans, dialogue between characters, and expression of internal responses. Additionally, children were encouraged to relate personal narratives to life lessons through questions such as: "Was it a good idea to build a house out of straw?" or "What would you say to the boy who cried wolf?"

Baseline and Follow-Up Measures

The instruments discussed below assessed at baseline and follow-up were used to measure children's: (1) problem behaviors (via parent report), (2) self-concept, and (3) narrative language abilities.

Child Behavior Checklist for Ages 6-18

The CBCL was administered to parents/caregivers before (baseline) and after (follow-up) the intervention. The CBCL is a U.S. normed, 119 item, parent-completed behavioral assessment

tool (Achenbach & Edelbrock, 1983) with items grouped into eight syndrome scales: (1) Aggressive Behavior, (2) Anxious/Depressed, (3) Attention Problems, (4) Rule-Breaking Behavior, (5) Somatic Complaints, (6) Social Problems, (7) Thought Problems, and (8) Withdrawn/Depressed. CBCL items also align with the following DSM-oriented problem scales: (1) Affective, (2) Anxiety, (3) Somatic, (4) Attention-Deficit/Hyperactivity Disorder (ADHD), (5) Oppositional Defiant, and (6) Conduct. Last, multiple CBCL items group into two broadband scales—Internalizing and Externalizing—as well as a Total Problems scale.

Piers-Harris 2

Children aged 7-18 completed the Piers-Harris Children's Self-Concept Scale Second Edition (Piers & Herzberg, 2002) before and after the narrative intervention. The Piers-Harris 2 is a U.S. normed, 60 item self-report measure featuring statements about one's self-concept (e.g., "I am strong," "I give up easily," "I feel left out of things"). Respondents are asked to indicate either "yes" or "no." Responses are scored manually and categorized into the following scales: (1) Behavioral Adjustment, (2) Intellectual and School Status, (3) Physical Appearance and Attributes, (4) Freedom from Anxiety, (5) Popularity, and (6) Happiness and Satisfaction.

Narrative Language Scoring

Pre (baseline) and post (follow-up) digital voice recordings of narrative samples were labeled with study identification, child age, and treating therapist. SLPs who scored the recordings were masked to time (e.g., baseline v. follow up) and were not assigned to score their own patients' recording. Each narrative language sample was assessed by two independent SLP coders, with a third coder added for each sample if any total score differed by more than 2 points between raters. Each sample was evaluated using the Narrative Language Measures (NLM) subtest of the CUBED assessment developed by Language Dynamic Group (Petersen & Spencer, 2012, 2012). Narrative complexity was evaluated using criteria derived from Reese et al. (2011) and Grysman and Hudson (2010).

Macrostructure was assessed using NLM. NLM was also to measure presence or absence—as well as complexity—of story grammar elements for each sample. Story grammar elements were rated on a 0-3- or 0-4-point scale and summated to yield a story grammar score. Story grammar elements used in the rating included: character, setting, problem, sequence, plan/attempt, consequence, ending, and emotion. Each narrative sample was also assessed for temporal coherence, causal coherence, and thematic coherence. Temporal coherence was assessed in children aged 8+ years by rating chronology and context on a 0–3-point scale. Causal coherence was assessed in children 12+ years by rating complexity, meaning making, and self-meaning making on a 0–3-point scale. Thematic coherence was assessed in children 16+ years of age by rating topic maintenance and thematic relationships on a 0–5-point scale.

Data Preparation and Analysis

Participants' demographic information (age, race/ethnicity, bilingual status, type of

disability, class placement, name of treating SLP, etc.) was collected, coded, and manually entered into a central dataset. Piers-Harris 2 response items were scored manually using scoring guidelines and CBCL item responses were entered into ASEBA software, which generated raw scores, T-scores, and percentile for each category. All Piers-Harris, CBCL, and narrative baseline and follow-up scores were also added to the central dataset and used for data analysis. Participant demographics are shown as mean (\pm standard deviation) for continuous variables, and count (%) for categorical variables.

Pre- vs. posttest scores were compared by paired *t* test. For narrative language measures, scores were based upon the means of 2-3 test assessors. In addition, we derived bias corrected Hedge's *g*-statistics for changes in effect size between pre- and post-intervention measurements. Further, a linear regression was fitted to examine the association of the test score change with any demographic or clinical variables. We also tested if the change in narrative capability was associated with the change in self-esteem (Piers-Harris) and CBCL by fitting a linear regression on the change in Pier-Harris scores or CBCL scores with change in narrative scores. To keep the directionality of the effect sizes for linear regression models, we computed Pearson correlation coefficient along with its 95% confidence interval. Since we tested multiple hypotheses, we used the Benjamini-Hochberg FDR correction (Benjamini & Hochberg, 1995) method to adjust for false discovery rates among the *p*-values.

Results

Description of Study Sample

A total of 33 children completed all assessments (CBCL, Piers Harris) and narrative intervention sessions. All participants had been diagnosed with a language impairment (either as a stand-alone diagnosis or with other comorbidities) by a SLP. As shown in Table 1, participants ranged in age from 6;10 to 16;3 (mean age = 10.9). The majority had bilingual English-Spanish language exposure (55.6%), were enrolled in integrated class settings (41.7%), and had been diagnosed with language impairment (88.9%). Those not diagnosed with a language impairment had an expressive/receptive language disorder (11.1%). Most participants had one or more diagnoses—language impairment (88.9%), ADHD (41.7%), learning disability (27.8%), and mixed receptive/expressive language disorder (11.1%). Almost half (41.7%) of children were in an integrated co-teaching (ICT) class, while 30.6% were in a regular class setting.

Pre/Post Changes in Narrative Language Ability, Problem Behaviors, and Self-Concept

As shown in Table 2, narrative language abilities improved across all domains after the study intervention. Study participants' coherence and narrative language (NL) scores increased for both story retelling (coherence: +0.81 increase, $p = .01$,* NL: +1.32 increase, $p = .15$) and personal narrative tasks (coherence: +1.08 increase, $p = .01$,* NL: +2.95 increase, $p = .01$ *). All measures within narrative scales showed moderate to large effect sizes. Post intervention, CBCL

Table 1*Participant Demographics*

Demographics	<i>n</i>	%
Race		
Black or African American	10	27.8
White	5	13.9
Other	15	41.7
Declined	6	16.7
Average range (years)		
6-9	6	16.0
10-12	23	63.0
13-16	8	23.0
Mean age		10.9 (± 2)
Ethnicity		
Latino/Hispanic	20	55.6
Class placement		
Integrated Co-Teaching	15	41.7
Regular	11	30.6
Self-Contained	5	13.9
Special Education (includes 12:1 and 6:1)	3	8.3
Regular + Teacher Support Services	1	2.8
High school	1	2.8
Gender		
Female	12	33.3
Bilingual status		
Bilingual	20	55.6
Diagnosis		
Developmental Language Disorder	32	88.9
ADHD	15	41.7
Learning Disability	10	27.8
Mixed Receptive/Expressive Language Disorder	4	11.1

scores significantly improved for both social competence (+1.55 increase, $p = .00^*$) and total competence (+1.74, $p = .015^*$). Both scales had medium to large effect sizes. Although not statistically significant, CBCL competency scores also improved across school (+0.24, $p = .29$) and activities scales (+0.19, $p = .65$). A nonsignificant reduction in problem behaviors—including rule-breaking behaviors, attention problems, ADHD-related problems—occurred after the narrative intervention. Conversely, several CBCL problem behaviors increased post-intervention, though changes were not significant. Post-intervention, Piers-Harris total scores improved in addition to five out of six subscales—notably, behavioral adjustment, intellectual status, physical appearance/attributes, popularity, and happiness/satisfaction. However, these findings did not attain statistical significance. Both popularity and happiness/satisfaction indices showed moderate effect sizes.

Table 2

Pre/Post Change in Narrative, Child Behavior Checklist, and Piers-Harris Scores

Measures	Pretest		Posttest		Change		p value	BH-FDR p value	ES (Hedge's g)	
	Mean	SD	Mean	SD	Mean	SD			g	95% CI
Narrative scores (n = 33)										
Story retell: Coherence score	3.80	1.20	4.45	1.18	0.81	1.52	0.011*	0.078	0.66	0.12,1.20
Story retell: Narrative language score	14.17	3.57	15.40	2.80	1.32	4.66	0.145	0.437	0.40	-0.15,0.95
Personal narrative: Coherence score	3.48	1.35	4.34	1.45	1.08	1.94	0.009*	0.075	0.75	0.15,1.35
Personal narrative: Narrative language score	12.48	3.74	15.30	2.69	2.95	5.14	0.005*	0.060	0.86	0.19,1.53
Child Behavior Checklist (n = 33)										
Competence scale scores:										
Activities	8.25	2.80	8.44	3.08	0.19	2.35	0.655	0.780	0.06	-0.21,0.34
Social	5.27	1.67	6.78	1.93	1.55	2.06	0.000*	0.015	0.82	0.34,1.30
School	2.72	1.17	2.93	1.13	0.24	1.11	0.290	0.529	0.19	-0.17,0.56
Total competence	16.58	3.13	18.48	3.97	1.74	3.17	0.015*	0.087	0.45	0.09,0.81
Syndrome scale scores										
Anxious/depressed	5.09	4.72	5.72	5.73	0.63	2.96	0.241	0.513	0.11	-0.07,0.30
Withdrawn/depressed	3.25	2.98	3.50	3.84	0.25	2.54	0.582	0.735	0.07	-0.18,0.31
Somatic complaints	2.59	3.55	3.09	4.86	0.50	2.75	0.311	0.529	0.10	-0.1,0.30
Social problems	4.75	3.75	4.97	5.06	0.22	3.12	0.694	0.780	0.04	-0.18,0.27
Thought problems	3.13	3.17	3.34	4.66	0.22	4.32	0.776	0.825	0.05	-0.31,0.42
Attention problems	8.13	4.49	7.88	5.37	-0.25	3.78	0.711	0.780	-0.05	-0.31,0.21
Rule-breaking behavior	3.03	3.30	2.91	3.50	-0.13	1.76	0.690	0.780	-0.04	-0.21,0.14
Aggressive behavior	6.44	5.67	7.38	7.67	0.94	4.25	0.221	0.509	0.12	-0.07,0.32
Problem behaviors										
Internalizing	10.94	9.96	12.31	13.38	1.38	6.83	0.263	0.527	0.10	-0.08,0.28
Externalizing	9.47	8.27	10.28	10.79	0.81	5.28	0.390	0.577	0.07	-0.1,0.24
Total	40.28	29.31	43.16	41.76	2.88	22.64	0.478	0.650	0.07	-0.12,0.25

(table continues)

Measures	Pretest		Posttest		Change		<i>p</i> value	BH-FDR <i>p</i> value	ES (Hedge's <i>g</i>)	
	Mean	<i>SD</i>	Mean	<i>SD</i>	Mean	<i>SD</i>			<i>g</i>	95% CI
Child Behavior Checklist (<i>n</i> = 33) (continued)										
DSM-oriented scales										
Affective problems	3.38	4.43	3.91	5.67	0.53	3.15	0.348	0.537	0.10	-0.1,0.29
Anxiety problems	2.91	2.56	2.94	2.97	0.03	1.73	0.919	0.919	0.01	-0.2,0.22
Somatic problems	1.75	2.41	2.00	3.13	0.25	1.92	0.466	0.650	0.08	-0.14,0.31
ADHD problems	5.63	3.29	5.38	3.65	-0.25	2.55	0.584	0.735	-0.07	-0.32,0.18
Oppositional defiant problems	2.78	2.17	3.19	2.52	0.41	1.62	0.167	0.437	0.17	-0.07,0.4
Conduct problems	2.84	3.62	3.28	5.00	0.44	2.59	0.347	0.537	0.08	-0.09,0.26
Piers-Harris (<i>n</i> = 33)										
Inconsistent response index	0.85	0.71	0.30	0.53	-0.55	0.90	0.002*	0.026	-0.85	-1.42,-0.28
Response bias	28.15	7.37	26.27	5.33	-1.88	6.01	0.082	0.288	-0.28	-0.59,0.04
Total score	45.64	8.82	47.61	8.25	1.97	7.87	0.160	0.437	0.22	-0.09,0.54
Behavioral adjustment	12.76	1.79	13.21	1.17	0.45	2.11	0.224	0.509	0.29	-0.19,0.78
Intellectual status	12.21	2.16	12.58	1.84	0.36	1.97	0.296	0.529	0.18	-0.16,0.51
Physical appearance and attributes	8.12	2.26	8.61	1.95	0.48	1.54	0.081	0.288	0.22	-0.03,0.47
Freedom from anxiety	11.27	1.72	11.18	2.01	-0.09	2.36	0.827	0.852	-0.05	-0.48,0.38
Popularity	8.88	2.04	9.52	1.79	0.64	1.98	0.074	0.288	0.32	-0.04,0.68
Happiness and satisfaction	8.88	1.11	9.30	0.85	0.42	1.37	0.085	0.288	0.42	-0.07,0.91

Note. Data are mean, *SD*, and *p* value by paired *t* test. BH-FDR *p* value: Benjamini-Hochberg False Discovery Rates corrected *p* values.

**p* < .05.

Association Between Narrative Language Ability and Self-Concept

To assess whether improvement in narrative language abilities was associated with change in self-concept scores, a linear regression model was fitted using the Piers-Harris change score as a dependent variable and the narrative language change score as a predictor (summarized in Table 3). Overall, there did not appear to be any statistically significant ($p < .05$) associations between improved narrative ability and self-concept, as measured via the Piers-Harris. There did not appear to be any general association between improved narrative language ability and self-concept, as measured via Piers-Harris. No associations were statistically significant when adjusted for using the Bonferroni correction method, likely because of small sample size.

Although not statistically significant, there was an observed elevated, yet small, association between improved narrative language abilities in story retelling and total improved score on the Piers-Harris ($r = .23, p = .24$). Additionally, small to moderate elevated associations were observed between behavioral adjustment and personal narrative coherence scores ($r = .21, p = .31$), self-perceived intellectual status and story retell narrative language scores ($r = .29, p = .14$), and physical appearance and narrative language scores for both story retelling ($r = .20, p = .30$) and personal narratives ($r = .27, p = .16$).

Association between Narrative Language Ability and Problem Behaviors

To understand if improvement in narrative language abilities was associated with behavioral/emotional change, a linear regression model was fitted using the CBCL change score as a dependent variable and narrative language change as a predictor (summarized in Table 4). Within the competence domain of the CBCL, narrative language abilities—specifically, coherence and narrative language scores during the story retell task—were positively correlated with competence in activities. No clear association between narrative language ability and the social subdomain was evident and there was a negative association with school competence. Among the syndrome and DSM-oriented scales, improvement in personal narrative coherence was significantly associated with increased anxiety/depression symptoms ($r = .52, p = .006^*$), attention problems ($r = .44, p = .023^*$), anxiety problems ($r = .43, p = .030^*$) and ADHD problems ($r = .51, p = .008^*$).

Additionally, a statistically significant, negative association was observed between story retelling and somatic problems ($r = -.44, p = .026$). Although not statistically significant, improved story retelling coherence and narrative language abilities were associated with reduced somatic complaints, social problems, thought problems, aggressive behaviors, internalizing problem behaviors, externalizing problem behaviors, total problem behaviors, oppositional defiant problems, and conduct problems. When we adjusted for false discovery rates using the Bonferroni correction, no associations attained statistical significance. This is likely due to small study sample size.

Table 3

Association Between Narrative Language Improvement and Piers-Harris Change Score

Piers-Harris	Narrative Language	Beta	SE	p value	BH-FDR p value	Correlation	
						r	95% CI
Inconsistent response index	Story retell: Coherence score	-0.01	0.12	0.918	0.198	-0.02	-0.41,0.37
	Story retell: Narrative language measure score	-0.02	0.04	0.646	0.864	-0.09	-0.45,0.29
	Personal narrative: Coherence score	-0.18	0.09	0.056	0.710	-0.38	-0.67,0.01
	Personal narrative: Narrative language measure score	-0.03	0.03	0.401	0.864	-0.17	-0.51,0.22
Response bias	Story retell: Coherence score	0.73	0.75	0.340	0.864	0.19	-0.21,0.54
	Story retell: Narrative language measure score	0.26	0.22	0.249	0.864	0.23	-0.16,0.55
	Personal narrative: Coherence score	-0.35	0.59	0.565	0.864	-0.12	-0.48,0.28
	Personal narrative: Narrative language measure score	0.47	0.19	0.019*	0.680*	0.44	0.08,0.7
Total score	Story retell: Coherence score	-0.30	1.02	0.769	0.864	-0.06	-0.44,0.33
	Story retell: Narrative language measure score	0.39	0.33	0.239	0.864	0.23	-0.16,0.56
	Personal narrative: Coherence score	-0.19	0.80	0.816	0.864	-0.05	-0.43,0.35
	Personal narrative: Narrative language measure score	0.10	0.30	0.746	0.864	0.06	-0.32,0.43
Behavioral adjustment	Story retell: Coherence score	-0.47	0.24	0.059	0.710	-0.37	-0.67,0.01
	Story retell: Narrative language measure score	-0.08	0.09	0.348	0.864	-0.18	-0.52,0.2
	Personal narrative: Coherence score	0.20	0.20	0.305	0.864	0.21	-0.19,0.55
	Personal narrative: Narrative language measure score	-0.03	0.08	0.685	0.864	-0.08	-0.44,0.3
Intellectual status	Story retell: Coherence score	-0.16	0.25	0.524	0.864	-0.13	-0.49,0.27
	Story retell: Narrative language measure score	0.12	0.08	0.136	0.864	0.29	-0.09,0.6
	Personal narrative: Coherence score	0.11	0.20	0.584	0.864	0.11	-0.29,0.48
	Personal narrative: Narrative language measure score	-0.04	0.08	0.561	0.864	-0.11	-0.47,0.27
Physical appearance and attributes	Story retell: Coherence score	-0.10	0.19	0.586	0.864	-0.11	-0.48,0.29
	Story retell: Narrative language measure score	0.07	0.06	0.303	0.864	0.20	-0.19,0.53
	Personal narrative: Coherence score	0.12	0.14	0.418	0.864	0.17	-0.24,0.52
	Personal narrative: Narrative language measure score	0.08	0.06	0.161	0.864	0.27	-0.11,0.59

(table continues)

Piers-Harris	Narrative Language	Beta	SE	p value	BH-FDR p value	Correlation	
						r	95% CI
Freedom from anxiety	Story retell: Coherence score	-0.42	0.28	0.141	0.864	-0.30	-0.61,0.10
	Story retell: Narrative language measure score	-0.07	0.09	0.460	0.864	-0.15	-0.49,0.24
	Personal narrative: Coherence score	-0.19	0.22	0.400	0.864	-0.17	-0.52,0.23
	Personal narrative: Narrative language measure score	-0.11	0.08	0.170	0.864	-0.27	-0.58,0.12
Popularity	Story retell: Coherence score	0.04	0.26	0.874	0.899	0.03	-0.36,0.41
	Story retell: Narrative language measure score	-0.03	0.08	0.756	0.864	-0.06	-0.42,0.32
	Personal narrative: Coherence score	0.12	0.20	0.552	0.864	0.12	-0.28,0.49
	Personal narrative: Narrative language measure score	0.03	0.07	0.651	0.864	0.09	-0.29,0.45
Happiness and satisfaction	Story retell: Coherence score	-0.04	0.17	0.814	0.864	-0.05	-0.43,0.35
	Story retell: Narrative language measure score	-0.03	0.06	0.545	0.864	-0.12	-0.47,0.27
	Personal narrative: Coherence score	0.05	0.14	0.701	0.864	0.08	-0.32,0.45
	Personal narrative: Narrative language measure score	0.02	0.05	0.704	0.864	0.08	-0.31,0.44

Note: Beta is per 1 unit improvement of narrative score change. BH-FDR p value: Benjamini-Hochberg False Discovery Rate corrected p values.

*p < .05

Table 4

Association Between Narrative Improvement and Child Behavior Checklist Change Score Changes and Narrative Improvement

Child Behavior Checklist	Narrative language	Beta	SE	p value	BH-FDR p value	Correlation	
						r	95% CI
Competence scale scores							
Activities	Story retell: Coherence score	0.56	0.30	0.076	0.728	0.35	-0.04,0.65
	Story retell: Narrative language measure score	0.15	0.10	0.143	0.728	0.28	-0.1,0.59
	Personal narrative: Coherence score	0.18	0.25	0.479	0.804	0.15	-0.26,0.5
	Personal narrative: Narrative language measure score	-0.11	0.09	0.254	0.761	-0.22	-0.55,0.16
Social	Story retell: Coherence score	0.08	0.24	0.754	0.918	0.07	-0.35,0.47
	Story retell: Narrative language measure score	-0.06	0.08	0.459	0.799	-0.16	-0.53,0.26
	Personal narrative: Coherence score	0.07	0.20	0.749	0.918	0.07	-0.35,0.47
	Personal narrative: Narrative language measure score	0.06	0.07	0.388	0.799	0.18	-0.24,0.55
School	Story retell: Coherence score	-0.32	0.17	0.068	0.728	-0.42	-0.73,0.03
	Story retell: Narrative language measure score	-0.05	0.05	0.409	0.799	-0.19	-0.57,0.26
	Personal narrative: Coherence score	-0.13	0.16	0.422	0.799	-0.19	-0.58,0.28
	Personal narrative: Narrative language measure score	0.02	0.06	0.711	0.918	0.09	-0.36,0.5
Total competence	Story retell: Coherence score	0.16	0.48	0.744	0.918	0.08	-0.39,0.52
	Story retell: Narrative language measure score	0.00	0.15	0.978	0.994	0.01	-0.45,0.46
	Personal narrative: Coherence score	0.35	0.47	0.466	0.799	0.18	-0.3,0.58
	Personal narrative: Narrative language measure score	0.09	0.17	0.620	0.883	0.12	-0.35,0.55
Syndrome scale scores							
Anxious/depressed	Story retell: Coherence score	0.26	0.41	0.533	0.829	0.13	-0.27,0.49
	Story retell: Narrative language measure score	0.03	0.13	0.805	0.926	0.05	-0.33,0.41
	Personal narrative: Coherence score	0.83	0.28	0.006*	0.353	0.52	0.17,0.76
	Personal narrative: Narrative language measure score	0.11	0.11	0.351	0.799	0.18	-0.2,0.52
Withdrawn/depressed	Story retell: Coherence score	0.01	0.35	0.984	0.994	0.00	-0.38,0.39
	Story retell: Narrative language measure score	-0.11	0.10	0.296	0.764	-0.20	-0.54,0.18
	Personal narrative: Coherence score	0.12	0.27	0.673	0.918	0.09	-0.31,0.46
	Personal narrative: Narrative language measure score	0.07	0.10	0.456	0.799	0.15	-0.24,0.49
Somatic complaints	Story retell: Coherence score	-0.51	0.31	0.111	0.728	-0.32	-0.63,0.08
	Story retell: Narrative language measure score	0.00	0.10	0.976	0.994	0.01	-0.37,0.38
	Personal narrative: Coherence score	0.17	0.25	0.507	0.819	0.14	-0.27,0.5
	Personal narrative: Narrative language measure score	0.06	0.09	0.496	0.818	0.13	-0.25,0.48

(table continues)

Child Behavior Checklist	Narrative language	Beta	SE	p value	BH-FDR p value	Correlation	
						r	95% CI
Syndrome scale scores (continued)							
Social problems	Story retell: Coherence score	-0.15	0.42	0.728	0.918	-0.07	-0.45,0.32
	Story retell: Narrative language measure score	-0.05	0.13	0.718	0.918	-0.07	-0.43,0.31
	Personal narrative: Coherence score	0.39	0.32	0.239	0.761	0.24	-0.16,0.57
	Personal narrative: Narrative language measure score	0.11	0.11	0.348	0.799	0.18	-0.2,0.52
Thought problems	Story retell: Coherence score	-0.33	0.61	0.597	0.880	-0.11	-0.48,0.29
	Story retell: Narrative language measure score	-0.28	0.18	0.123	0.728	-0.30	-0.6,0.08
	Personal narrative: Coherence score	0.20	0.48	0.684	0.918	0.08	-0.31,0.46
	Personal narrative: Narrative language measure score	0.23	0.16	0.178	0.761	0.26	-0.12,0.58
Attention problems	Story retell: Coherence score	0.57	0.52	0.282	0.764	0.22	-0.18,0.56
	Story retell: Narrative language measure score	0.09	0.17	0.608	0.881	0.10	-0.28,0.46
	Personal narrative: Coherence score	0.90	0.37	0.023*	0.462	0.44	0.07,0.71
	Personal narrative: Narrative language measure score	0.23	0.14	0.114	0.728	0.31	-0.08,0.61
Rule-breaking behavior	Story retell: Coherence score	0.16	0.20	0.438	0.799	0.16	-0.24,0.51
	Story retell: Narrative language measure score	-0.01	0.06	0.832	0.945	-0.04	-0.41,0.34
	Personal narrative: Coherence score	0.19	0.15	0.236	0.761	0.24	-0.16,0.57
	Personal narrative: Narrative language measure score	0.00	0.06	0.991	0.994	0.00	-0.37,0.37
Aggressive behavior	Story retell: Coherence score	-0.56	0.61	0.368	0.799	-0.18	-0.53,0.22
	Story retell: Narrative language measure score	-0.25	0.18	0.186	0.761	-0.26	-0.58,0.13
	Personal narrative: Coherence score	0.50	0.47	0.300	0.764	0.21	-0.19,0.55
	Personal narrative: Narrative language measure score	0.11	0.17	0.519	0.823	0.13	-0.26,0.48
Problem behaviors							
Internalizing	Story retell: Coherence score	-0.25	0.89	0.784	0.926	-0.06	-0.43,0.34
	Story retell: Narrative language measure score	-0.08	0.27	0.779	0.926	-0.06	-0.42,0.32
	Personal narrative: Coherence score	1.12	0.66	0.101	0.728	0.33	-0.07,0.64
	Personal narrative: Narrative language measure score	0.24	0.24	0.326	0.799	0.19	-0.19,0.53
Externalizing	Story retell: Coherence score	-0.40	0.72	0.584	0.879	-0.11	-0.48,0.29
	Story retell: Narrative language measure score	-0.26	0.21	0.238	0.761	-0.23	-0.56,0.16
	Personal narrative: Coherence score	0.69	0.55	0.225	0.761	0.25	-0.16,0.58
	Personal narrative: Narrative language measure score	0.11	0.20	0.586	0.879	0.11	-0.28,0.46
Total	Story retell: Coherence score	-0.56	3.16	0.860	0.950	-0.04	-0.42,0.36
	Story retell: Narrative language measure score	-0.72	0.95	0.455	0.799	-0.15	-0.49,0.24
	Personal narrative: Coherence score	3.49	2.37	0.154	0.728	0.29	-0.11,0.61
	Personal narrative: Narrative language measure score	1.05	0.84	0.224	0.761	0.24	-0.15,0.56

(table continues)

Child Behavior Checklist	Narrative language	Beta	SE	p value	BH-FDR p value	Correlation	
						r	95% CI
DSM-oriented scales							
Affective problems	Story retell: Coherence score	0.04	0.46	0.927	0.994	0.02	-0.37,0.4
	Story retell: Narrative language measure score	-0.17	0.14	0.227	0.761	-0.24	-0.56,0.15
	Personal narrative: Coherence score	0.30	0.36	0.409	0.799	0.17	-0.23,0.52
	Personal narrative: Narrative language measure score	0.14	0.12	0.271	0.764	0.22	-0.17,0.54
Anxiety problems	Story retell: Coherence score	0.08	0.25	0.748	0.918	0.07	-0.33,0.44
	Story retell: Narrative language measure score	-0.03	0.08	0.720	0.918	-0.07	-0.43,0.31
	Personal narrative: Coherence score	0.41	0.18	0.030*	0.462	0.43	0.05,0.7
	Personal narrative: Narrative language measure score	0.11	0.06	0.090	0.728	0.33	-0.05,0.62
Somatic problems	Story retell: Coherence score	-0.51	0.22	0.026*	0.462	-0.44	-0.7,-0.06
	Story retell: Narrative language measure score	-0.02	0.07	0.799	0.926	-0.05	-0.42,0.33
	Personal narrative: Coherence score	0.01	0.19	0.978	0.994	0.01	-0.38,0.39
	Personal narrative: Narrative language measure score	0.08	0.06	0.252	0.761	0.22	-0.16,0.55
ADHD problems	Story retell: Coherence score	0.49	0.32	0.143	0.728	0.30	-0.1,0.61
	Story retell: Narrative language measure score	0.09	0.10	0.378	0.799	0.17	-0.21,0.51
	Personal narrative: Coherence score	0.65	0.23	0.008*	0.353	0.51	0.15,0.75
	Personal narrative: Narrative language measure score	0.14	0.09	0.156	0.728	0.28	-0.11,0.59
Oppositional defiant problems	Story retell: Coherence score	-0.21	0.22	0.355	0.799	-0.19	-0.54,0.21
	Story retell: Narrative language measure score	-0.07	0.07	0.291	0.764	-0.21	-0.54,0.18
	Personal narrative: Coherence score	0.28	0.17	0.108	0.728	0.32	-0.07,0.63
	Personal narrative: Narrative language measure score	0.13	0.06	0.033	0.462	0.40	0.04,0.68
Conduct problems	Story retell: Coherence score	-0.07	0.35	0.853	0.950	-0.04	-0.42,0.35
	Story retell: Narrative language measure score	0.00	0.11	0.994	0.994	0.00	-0.37,0.37
	Personal narrative: Coherence score	0.21	0.27	0.435	0.799	0.16	-0.24,0.52
	Personal narrative: Narrative language measure score	-0.01	0.10	0.914	0.994	-0.02	-0.39,0.35

Note. Beta is per 1 unit improvement of narrative score change. BH-FDR p value: Benjamini-Hochberg False Discovery Rate corrected p values.

*p < .05.

Discussion

This study examined whether a structured, oral narrative intervention was associated with improvements in narrative language abilities, reduced problem behaviors, and improved self-concept among a culturally and linguistically diverse group of children and adolescents with DLD. Post-intervention, participants demonstrated improved, statistically significant coherence scores for both the personal narrative ($p < .01^*$) and story retelling tasks ($p < .05^*$), as well as improved narrative language scores for both the personal narrative ($p > .01^*$) and story retelling ($p = .15$) tasks. CBCL scores improved significantly for both social competence ($p > .001^*$) and total competence scales ($p > .05^*$), with moderate to large effect sizes. Although not statistically significant, CBCL competency scores also increased across school and activities scales. Contrary to expectations, there were small increases in externalizing and internalizing problem behavior after the narrative intervention; however, these findings did not attain statistical significance.

A nonsignificant reduction in problem behaviors—including rule-breaking behaviors, attention problems, and ADHD-related problems—occurred after the narrative intervention. Conversely, several CBCL-measured problem behaviors (e.g., aggressive behavior, internalizing and externalizing problem behaviors, as well as affective, oppositional defiant, and conduct problems) increased post-intervention, although these changes were relatively small and not statistically significant. Additionally, positive correlations between improved narrative language abilities and competence in activities (a CBCL measure) was observed. Post-intervention, participants also exhibited improvement in positive self-concept, as evidenced by increased Piers-Harris total scores and 5/6 subscale scores.

Study findings were mostly consistent with the authors' *a priori* study hypotheses and related research literature in this area. After completing a 10-session, oral narrative language intervention, a sample ($n = 33$) of bilingual children and adolescents with DLD demonstrated improved narrative language abilities, increased competency in school, extracurricular activities, and social settings, and improved self-concept. Statistical analyses also revealed that increased narrative language abilities were associated with improvement in social competencies and positive self-concept. These findings are consistent with relevant literature, which has demonstrated the efficacy and importance of evidenced-based, language interventions among persons with DLD.

It has been well-documented that children, teens, and young adults with DLD can experience a multitude of academic, behavioral, social, and emotional challenges, especially when compared against their typically developing peers (Adlof & Hogan, 2018; Aguilar-Mediavilla et al., 2014; Catts et al., 2002; Harrison et al., 2009; McCormack et al., 2011; Morgan et al., 2015; Morgan et al., 2012; Spaulding et al., 2008; Wittke & Spaulding, 2018; Yew & O'Kearney, 2013). Throughout childhood and adolescence, persons with DLD are more likely to exhibit internalized and externalized difficulties, including aggressiveness, distractibility, anxiety, depression, low self-esteem, behavioral adjustment issues, heightened stress in social situations, and emotional disturbances (Bakopoulou & Dockrell, 2016; Burnley et al., 2023; Conti-Ramsden et al., 2013; Conti-Ramsden & Botting, 2008; Conti-Ramsden & Durkin, 2016; Durkin & Conti-Ramsden, 2010;

Lindsay, Dockrell, & Palikara, 2010; Lindsay, Dockrell, & Strand, 2010; Lindsay & Strand, 2016; McCabe, 2005; Özcebe et al., 2020; Rost & McGregor, 2012; Samson et al., 2020; St Clair et al., 2019 2011; Van den Bedem et al., 2018; Voci et al., 2006; Wadman, Botting, et al., 2011; Wadman et al., 2008; Wadman, Durkin, et al., 2011; Yew & O’Kearney, 2013, 2015). This creates heightened risk and barriers to success for an already vulnerable population. As such, creating and evaluating language-specific interventions—including narrative language—are critical for this population.

Children and adolescents with DLD who speak more than one language are a unique—but growing—population in the U.S. Research on bilingual and multilingual persons with DLD is sparse. Unfortunately, research studies on children and adolescents with DLD have historically excluded persons from bi/multilingual households (Kohnert et al., 2022; Tomblin et al., 1997). Because it can be quite difficult to discern language *difference* from language *disorder* among people who speak more than one language, DLD tends to be both under-diagnosed and over-diagnosed among this population (Morgan et al., 2015; Rethfeldt et al., 2023). Language assessments and psychological, social, emotional, and behavioral assessment tools used in clinical and school settings are typically designed, normed, and standardized for monolingual English speakers (Armon-Lotem & Meir, 2016; M. Nelson & Wilson, 2021). Prior research studies on narrative development have primarily focused solely on speech-language outcomes among monolingual, English-speaking children of European-American descent (Pico et al., 2021). This study was designed with the hopes of reducing gaps in this research area and better understanding the efficacy of narrative language interventions among bilingual children and adolescents with DLD, a historically underserved population.

Bilingual children and teens with DLD who participated in this study benefitted from a narrative language intervention across several areas, including—improved narrative language and story coherence skills, increased social and academic competency, and improved self-concept. Nevertheless, this study presented several limitations. A major limitation of this study was its small sample size ($n = 33$) and variability in participants’ ages. These factors can make it challenging to determine if changes occurred because of chance or natural occurrences (e.g., changes in self-esteem and problem behaviors may have occurred because of aging, external environmental stressors, entry into middle school, etc.). However, we were pleased to see children’s improvement in narrative abilities and find subtle, but meaningful, changes in behavior and self-concept. We hope that the preliminary findings from this study can serve as the basis for future research in this area. With increased time and more study participants, we would expect to see a greater shift in a child’s understanding of self and improvement in psychosocial outcomes.

With a longer duration of intervention and larger sample size, we would expect to see increased performance in narrative development and greater impact on social competence and self-concept. Notably, while not included in the data set for the present study, a post-study event (sharing narratives with families after post testing was accomplished) revealed anecdotal evidence by parental report that subtle but significant shifts in relevant behaviors were revealed. There was a better-than-expected turn-out for such an event and clients who were previously

unwilling to share a narrative publicly were willing to share their stories with peers and family/community members. One example includes a child with selective mutism who volunteered to share her story in front of a group of unfamiliar peers, caregivers, and SLPs. Other participants reported feeling empowered or more confident to present in front of the group. Although we did not include these as part of our original study, these findings suggest that collecting qualitative information from children and family members may be fruitful in future research.

Strengths of the study include the use of a culturally and linguistically diverse sample. In addition, this study utilized behavioral and self-concept measures extending beyond speech and language outcomes typically assessed in narrative language interventions. Further, assessment outcomes by SLPs masked to participant and time (e.g., baseline vs. follow-up) reduced bias in assessment of the narrative language outcomes and thus added rigor to the design. Finally, setting the study within routine care increases external validity and could serve as a model for future research. Limitations include lack of a control group, as well as inclusion of some children who had previously received indirect narrative-related work. The limitations of this present study are consistent with those found in busy urban clinics. Attendance was a major factor in being able to complete pre/post assessments and all the required sessions of the intervention. Future studies of this nature will likely need a more tailored assessment that considers how language processing impacts the ability to express a critical view of self.

References

- Abbot-Smith, K., Dockrell, J., Sturrock, A., Matthews, D., & Wilson, C. (2023). Topic maintenance in social conversation: What children need to learn and evidence this can be taught. *First Language*, 43(6), 614-642. <https://doi.org/10.1177/01427237231172652>
- Achenbach, T. M., & Edelbrock, C. S. (1983). *Manual for the Child Behavior Checklist and Revised Child Behavior Profile*. University of Vermont Department of Psychiatry. <https://doi.org/10.1016/j.sbspro.2012.09.513>
- Adlof, S. M., & Hogan, T. P. (2018). Understanding dyslexia in the context of developmental language disorders. *Language, Speech, and Hearing Services in Schools*, 49(4), 762-773. https://doi.org/10.1044/2018_LSHSS-DYSLC-18-0049
- Aguilar-Mediavilla, E., Buil-Legaz, L., Perez-Castello, J. A., Rigo-Carratalà, E., & Adrover-Roig, D. (2014). Early preschool processing abilities predict subsequent reading outcomes in bilingual Spanish–Catalan children with specific language impairment (SLI). *Journal of Communication Disorders*, 50, 19-35. <https://doi.org/10.1016/j.jcomdis.2014.03.003>
- American Psychiatric Association. (2013). *American Psychiatric Association: Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi/book/10.1176/appi.books.9780890425596>
- Armon-Lotem, S., & Meir, N. (2016). Diagnostic accuracy of repetition tasks for the identification of specific language impairment (SLI) in bilingual children: Evidence from Russian and Hebrew. *International Journal of Language & Communication Disorders*, 51(6), 715-731. <https://doi.org/10.1111/1460-6984.12242>
- Bakopoulou, I., & Dockrell, J. E. (2016). The role of social cognition and prosocial behaviour in relation to the socio-emotional functioning of primary aged children with Specific Language Impairment. *Research in Developmental Disabilities*, 49, 354-370. <https://doi.org/10.1016/j.ridd.2015.12.013>

- Bauer, J. J., Graham, L. E., Mooney, S. E., Geisz, A. M., & Mueller, M. (2022). A good life story: Deconstructing (and integrating) elements of narrative identity and a good life, featuring themes of humanistic growth. *Journal of Research in Personality, 101*, 104303. <https://doi.org/10.1016/j.jrp.2022.104303>
- Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society: Series B (Methodological), 57*(1), 289-300. <https://doi.org/10.1111/j.2517-6161.1995.tb02031.x>
- Berman, R. A., & Slobin, D. I. (2013). *Relating events in narrative: A crosslinguistic developmental study*. Psychology Press.
- Bichay-Awadalla, K., Qi, C. H., Bulotsky-Shearer, R. J., & Carta, J. J. (2020). Bidirectional relationship between language skills and behavior problems in preschool children from low-income families. *Journal of Emotional and Behavioral Disorders, 28*(2), 114-128. <https://doi.org/10.1177/1063426619853535>
- Bishop, D. V. M. (2014). Ten questions about terminology for children with unexplained language problems. *International Journal of Language & Communication Disorders, 49*(4), 381-415. <https://doi.org/10.1111/1460-6984.12101>
- Bishop, D. V. M. (2017). Why is it so hard to reach agreement on terminology? The case of developmental language disorder (DLD). *International Journal of Language and Communication Disorders, 52*(6), 671-680. <https://doi.org/10.1111/1460-6984.12335>
- Bishop, D. V. M., Snowling, M. J., Thompson, P. A., Greenhalgh, T., & Consortium, C. (2016). CATALISE: A multinational and multidisciplinary Delphi consensus study. Identifying Language Impairments in children. *Public Library of Science, 11*(7). <https://doi.org/10.1371/journal.pone.0168066>
- Bishop, D. V. M., Snowling, M. J., Thompson, P. A., Greenhalgh, T., Consortium, C., Adams, C., Archibald, L., Baird, G., Bauer, A., & Bellair, J. (2017). Phase 2 of CATALISE: A multinational and multidisciplinary Delphi consensus study of problems with language development: Terminology. *Journal of Child Psychology and Psychiatry, 58*(10), 1068-1080. <https://doi.org/10.1111/jcpp.12721>
- Blom, E., & Boerma, T. (2016). Why do children with language impairment have difficulties with narrative macrostructure? *Research in Developmental Disabilities, 55*, 301-311. <https://doi.org/10.1016/j.ridd.2016.05.001>
- Bluck, S., Alea, N., Habermas, T., & Rubin, D. C. (2005). A tale of three functions: The self-reported uses of autobiographical memory. *Social Cognition, 23*(1), 91-117. <https://doi.org/10.1521/soco.23.1.91.59198>
- Brinton, B., & Fujiki, M. (2019). Facilitating social communication in children with developmental language disorder: A bibliotherapeutic approach. *Perspectives of the ASHA Special Interest Groups, 4*(3), 532-537. https://doi.org/10.1044/2019_PERS-SIG16-2019-0005
- Brinton, B., Fujiki, M., Spencer, J. C., & Robinson, L. A. (1997). The ability of children with Specific Language Impairment to access and participate in an ongoing interaction. *Journal of Speech, Language, and Hearing Research, 40*(5), 1011-1025. <https://doi.org/10.1044/jslhr.4005.1011>
- Burnley, A., St Clair, M., Bedford, R., Wren, Y., & Dack, C. (2023). Understanding the prevalence and manifestation of anxiety and other socio-emotional and behavioural difficulties in children with developmental language disorder. *Journal of Neurodevelopmental Disorders, 15*(1), 1-21. <https://doi.org/10.1186/s11689-023-09486-w>

- Calder, S. D., Brennan-Jones, C. G., Robinson, M., Whitehouse, A., & Hill, E. (2022). The prevalence of and potential risk factors for Developmental Language Disorder at 10 years in the Raine Study. *Journal of Paediatrics and Child Health*, 58(11), 2044-2050. <https://doi.org/10.1111/jpc.16149>
- Carneiro, G. R. d. S., Martinelli, S. d. C., & Sisto, F. F. (2003). Autoconceito e dificuldades de aprendizagem na escrita. [Self-concept and learning difficulties in writing. *Psicologia: Reflexão e crítica*, 16, 427-434. <https://doi.org/10.1590/S0102-79722003000300002>
- Castro, V. L., Halberstadt, A. G., Lozada, F. T., & Craig, A. B. (2015). Parents' emotion-related beliefs, behaviours, and skills predict children's recognition of emotion. *Infant and Child Development*, 24(1), 1-22. <https://doi.org/10.1002/icd.1868>
- Catts, H. W., Fey, M. E., Tomblin, J. B., & Zhang, X. (2002). A longitudinal investigation of reading outcomes in children with language impairments. *Journal of Speech, Language, and Hearing Research*, 45(6), 1142-1157. [https://doi.org/10.1044/1092-4388\(2002\)093](https://doi.org/10.1044/1092-4388(2002)093)
- Clegg, J., Crawford, E., Spencer, S., & Matthews, D. (2021). Developmental language disorder (DLD) in young people leaving care in England: A study profiling the language, literacy and communication abilities of young people transitioning from care to independence. *International Journal of Environmental Research and Public Health*, 18(8), 4107. <https://doi.org/10.3390/ijerph18084107>
- Cole, G. G., & Millett, A. C. (2019). The closing of the theory of mind: A critique of perspective-taking. *Psychonomic Bulletin & Review*, 26, 1787-1802. <https://doi.org/10.3758/s13423-019-01657-y>
- Conti-Ramsden, G., & Durkin, K. (2008). Language and independence in adolescents with and without a history of specific language impairment (SLI). *Journal of Speech, Language, and Hearing Research*, 51(1), 70-83. [https://doi.org/10.1044/1092-4388\(2008\)005](https://doi.org/10.1044/1092-4388(2008)005)
- Conti-Ramsden, G., Mok, P., Durkin, K., Pickles, A., Toseeb, U., & Botting, N. (2019). Do emotional difficulties and peer problems occur together from childhood to adolescence? The case of children with a history of developmental language disorder (DLD). *European Child & Adolescent Psychiatry*, 28, 993-1004. <https://doi.org/10.1007/s00787-018-1261-6>
- Conti-Ramsden, G., Mok, P. L., Pickles, A., & Durkin, K. (2013). Adolescents with a history of specific language impairment (SLI): Strengths and difficulties in social, emotional and behavioral functioning. *Research in Developmental Disabilities*, 34(11), 4161-4169. <https://doi.org/10.1016/j.ridd.2013.08.043>
- Conti-Ramsden, G., & Botting, N. (2008). Emotional health in adolescents with and without a history of specific language impairment (SLI). *Journal of Child Psychology and Psychiatry*, 49(5), 516-525. <https://doi.org/10.1111/j.1469-7610.2007.01858.x>
- Conti-Ramsden, G., & Durkin, K. (2016). Language Impairment and adolescent outcomes. In K. Durkin & H.R. Schaffer (Eds.), *The Wiley handbook of developmental psychology in practice: Implementation and impact* (pp. 407-439). Wiley Blackwell. <https://doi.org/10.1002/9781119095699.ch16>
- Cordeiro, T., Botelho, J., & Mendonça, C. (2021). Relationship between the self-concept of children and their ability to recognize emotions in others. *Frontiers in Psychology*, 12, 672919. <https://doi.org/10.3389/fpsyg.2021.672919>
- Curtis, P. R., Frey, J. R., Watson, C. D., Hampton, L. H., & Roberts, M. Y. (2018). Language disorders and problem behaviors: A meta-analysis. *Pediatrics*, 142(2). <https://doi.org/10.1542/peds.2017-3551>

- Dall, M., Fellingner, J., & Holzinger, D. (2022). The link between social communication and mental health from childhood to young adulthood: A systematic review. *Frontiers in Psychiatry, 13*, 944815. <https://doi.org/10.3389/fpsyt.2022.944815>
- de Bree, E. H., Boerma, T., Hakvoort, B., Blom, E., & van den Boer, M. (2022). Word reading in monolingual and bilingual children with developmental language disorder. *Learning and Individual Differences, 98*, 102185. <https://doi.org/10.1016/j.lindif.2022.102185>
- de López, K. J., & Lyons, R. (2020). Narratives and identity construction of children with developmental speech and language disorders. In C. C. Glintborg & M. de la Mata (Eds.), *Identity construction and illness narratives in persons with disabilities* (pp. 104-114). Routledge. <https://doi.org/10.4324/9781003021612>
- Dockrell, J. E., Lindsay, G., & Palikara, O. (2011). Explaining the academic achievement at school leaving for pupils with a history of language impairment: Previous academic achievement and literacy skills. *Child Language Teaching and Therapy, 27*(2), 223-237. <https://doi.org/10.1177/0265659011398671>
- Dockrell, J. E., Ricketts, J., Palikara, O., Charman, T., & Lindsay, G. A. (2019). What drives educational support for children with developmental language disorder or autism spectrum disorder: Needs, or diagnostic category? *Frontiers in Education, 4*(29), 1-14. <https://doi.org/10.3389/feduc.2019.00029>
- Dubois, P., St-Pierre, M.-C., Desmarais, C., & Guay, F. (2020). Young adults with developmental language disorder: A systematic review of education, employment, and independent living outcomes. *Journal of Speech, Language, and Hearing Research, 63*(11), 3786-3800. https://doi.org/10.1044/2020_JSLHR-20-00127
- Ducoli, M. (2023). Bilingualism and developmental language disorders: An overview. In G. Mazzaggio & P. Lorusso (Eds.), *Proceedings of the International Summer School of Bilingualism and Multilingualism* (pp. 161-195). University of Gorcia Press.
- Duinmeijer, I., de Jong, J., & Scheper, A. (2012). Narrative abilities, memory and attention in children with a specific language impairment. *International Journal of Language & Communication Disorders, 47*(5), 542-555. <https://doi.org/10.1111/j.1460-6984.2012.00164.x>
- Durand, V. M., & Moskowitz, L. J. (2019). The link between problem behavior and communication impairment in persons with developmental disabilities. *Current Developmental Disorders Reports, 6*(3), 138-144. <https://doi.org/10.1007/s40474-019-00172-y>
- Durkin, K., & Conti-Ramsden, G. (2010). Young people with specific language impairment: A review of social and emotional functioning in adolescence. *Child Language Teaching and Therapy, 26*(2), 105-121. <https://doi.org/10.1177/0265659010368750>
- Ebert, S. (2020). Theory of mind, language, and reading: Developmental relations from early childhood to early adolescence. *Journal of Experimental Child Psychology, 191*, 104739. <https://doi.org/10.1016/j.jecp.2019.104739>
- Ekström, A., Sandgren, O., Sahlén, B., & Samuelsson, C. (2023). 'It depends on who I'm with': How young people with developmental language disorder describe their experiences of language and communication in school. *International Journal of Language & Communication Disorders, 58*(4), 1168-1181 <https://doi.org/10.1111/1460-6984.12850>
- Favot, K., Carter, M., & Stephenson, J. (2021). The effects of oral narrative intervention on the narratives of children with language disorder: A systematic literature review. *Journal of Developmental and Physical Disabilities, 33*, 489-536. <https://doi.org/10.1007/s10882-020-09763-9>

- Forrest, C. L., Gibson, J. L., Halligan, S. L., & St Clair, M. C. (2020). A cross-lagged analysis of emotion regulation, peer problems, and emotional problems in children with and without early language difficulties: Evidence from the millennium cohort study. *Journal of Speech, Language, and Hearing Research*, 63(4), 1227-1239. https://doi.org/10.1044/2020_JSLHR-19-00188
- Forrest, C. L., Gibson, J. L., & St Clair, M. C. (2021). Social functioning as a mediator between developmental language disorder (DLD) and emotional problems in adolescents. *International Journal of Environmental Research and Public Health*, 18(3), 1221. <https://doi.org/10.3390/ijerph18031221>
- Francis, G., Deniz, E., Torgerson, C., & Toseeb, U. (2022). Play-based interventions for mental health: A systematic review and meta-analysis focused on children and adolescents with autism spectrum disorder and developmental language disorder. *Autism & Developmental Language Impairments*, 7. <https://doi.org/10.1177/239694152111073118>
- Gamannossi, B. A., & Pinto, G. (2014). Theory of mind and language of mind in narratives: Developmental trends from kindergarten to primary school. *First Language*, 34(3), 262-272. <https://doi.org/10.1177/0142723714535875>
- Garraffa, M., Sorace, A., & Vender, M. (2020). *Il cervello bilingue [The bilingual brain]*. Carocci, Roma. <https://doi.org/10.1017/9781009333375>
- Georgan, W. C., Archibald, L. M., & Hogan, T. P. (2023). Speech/language impairment or specific learning disability? Examining the usage of educational categories. *Journal of Speech, Language, and Hearing Research*, 66(2), 656-667. https://doi.org/10.1044/2022_JSLHR-21-00636
- Georgan, W. C., & Hogan, T. P. (2020). *The many terms used for DLD*. <https://dldandme.org/terminology/>
- Goh, S. K., Griffiths, S., & Norbury, C. F. (2021). Sources of variability in the prospective relation of language to social, emotional, and behavior problem symptoms: Implications for developmental language disorder. *Journal of Abnormal Psychology*, 130(6), 676-689. <https://doi.org/10.1037/abn0000691>
- Green, L. (2020). The specific language impairment/developmental language disorders forum: Fostering a discussion of terminology. *Perspectives of the ASHA Special Interest Groups*, 5(1), 3-5. https://doi.org/10.1044/2019_PERSP-19-00184
- Green, L. B., & Klecan-Aker, J. S. (2012). Teaching story grammar components to increase oral narrative ability: A group intervention study. *Child Language Teaching and Therapy*, 28(3), 263-276. <https://doi.org/10.1177/0265659012456029>
- Grysmann, A., & Hudson, J. A. (2010). Abstracting and extracting: Causal coherence and the development of the life story. *Memory*, 18(6), 565-580. <https://doi.org/10.1080/09658211.2010.493890>
- Grysmann, A., & Mansfield, C. D. (2017). What do we have when we have a narrative? *Imagination, Cognition and Personality*, 37(2), 105-126. <https://doi.org/10.1177/0276236617733823>
- Gupta, V. B., Hyman, S. L., Johnson, C. P., Bryant, J., Byers, B., Kallen, R., Levy, S. E., Myers, S. M., Rosenblatt, A. I., & Yeargin-Allsopp, M. (2007). Identifying children with autism early? *Pediatrics*, 119(1), 152-153. <https://doi.org/10.1542/peds.2006-2026>
- Habermas, T. (2011). Autobiographical reasoning: Arguing and narrating from a biographical perspective. *New Directions for Child and Adolescent Development*, 2011(131), 1-17. <https://doi.org/10.1002/cd.285>

- Habermas, T., & Bluck, S. (2000). Getting a life: The emergence of the life story in adolescence. *Psychological Bulletin*, 126(5), 748. <https://doi.org/10.1037/0033-2909.126.5.748>
- Haman, E., Luniewska, M., & Pomiechowska, B. (2015). Designing cross-linguistic lexical tasks (CLTs) for bilingual preschool children. In S. Armon-Lotem, J. de Jong, & N. Meir (Eds.), *Assessing multilingual children: Disentangling bilingualism from language impairment* (pp. 196-240). Multilingual Matters. <https://doi.org/10.21832/9781783093137-010>
- Harrison, L. J., McLeod, S., Berthelsen, D., & Walker, S. (2009). Literacy, numeracy, and learning in school-aged children identified as having speech and language impairment in early childhood. *International Journal of Speech-Language Pathology*, 11(5), 392-403. <https://doi.org/10.1080/17549500903093749>
- Harter, S. (2015). *The construction of the self: Developmental and sociocultural foundations* (2nd ed.). Guilford Publications, Inc.
- Hartog, I., Scherer-Rath, M., Kruizinga, R., Netjes, J., Henriques, J., Nieuwkerk, P., Sprangers, M., & Van Laarhoven, H. (2020). Narrative meaning making and integration: Toward a better understanding of the way falling ill influences quality of life. *Journal of Health Psychology*, 25(6), 738-754. <https://doi.org/10.1177/1359105317731823>
- Hasson, F., Keeney, S., & McKenna, H. (2000). Research guidelines for the Delphi Survey Technique. *Journal of Advanced Nursing*, 32(4), 1008-1015. <https://doi.org/10.1046/j.1365-2648.2000.t01-1-01567.x>
- Healey, M. L., & Grossman, M. (2018). Cognitive and affective perspective-taking: Evidence for shared and dissociable anatomical substrates. *Frontiers in Neurology*, 9, 1-8. <https://doi.org/10.3389/fneur.2018.00491>
- Heilmann, J., Miller, J. F., & Nockerts, A. (2010). Sensitivity of narrative organization measures using narrative retells produced by young school-age children. *Language Testing*, 27(4), 603-626. <https://doi.org/10.1177/0265532209355669>
- Hosseini, P. (2022). *Advancing identification of causal relations in natural language* The George Washington University. <https://scholarspace.library.gwu.edu/etd/gb19f6506>
- Janik Blaskova, L., & Gibson, J. L. (2021). Reviewing the link between language abilities and peer relations in children with developmental language disorder: The importance of children's own perspectives. *Autism & Developmental Language Impairments*, 6, 1-18. <https://doi.org/10.1177/23969415211021515>
- Jansen, R., Maljaars, J., Verhappen, A., Zink, I., Steyaert, J., & Noens, I. (2020). Problem behavior in young children referred with language difficulties: Relations to language and intentional communication. *Autism & Developmental Language Impairments*, 5, 1-16. <https://doi.org/10.1177/2396941519900076>
- Klecan-Aker, J. S. (1993). A treatment programme for improving story-telling ability: A case study. *Child Language Teaching and Therapy*, 9(2), 105-115. <https://doi.org/10.1177/026565909300900202>
- Köber, C., & Habermas, T. (2017). Development of temporal macrostructure in life narratives across the lifespan. *Discourse Processes*, 54(2), 143-162. <https://doi.org/10.1080/0163853X.2015.1105619>
- Kohnert, K., Ebert, K. D., & Pham, G. T. (2022). *Language disorders in bilingual children and adults* (3rd ed.). Plural Publishing, Inc.
- Koivula, M., Turja, L., & Laakso, M.-L. (2020). Using the storytelling method to hear children's perspectives and promote their social-emotional competence. *Journal of Early Intervention*, 42(2), 163-181. <https://doi.org/10.1177/1053815119880599>

- Kraljevic, J. K. (2023). Can prevalence data help us identify developmental language disorder? *The Lancet Regional Health—Western Pacific*, 34. <https://doi.org/10.1016/j.lanwpc.2023.100714>
- Kumar, L., Hill, S. Y., & Creswell, K. G. (2023). Social cognition and problematic alcohol use: An organizing theoretical framework and suggestions for future work. *Psychology of Learning and Motivation*, 79, 147-206. <https://doi.org/10.1016/bs.plm.2023.07.001>
- Lam, B. (2019). The relationship between theory of mind and social interest: A literature review. *The Journal of Individual Psychology*, 75(4), 330-342. <https://doi.org/10.1353/jip.2019.0021>
- Leaders Project. (2023). *School-Age Language Assessment Measures (SLAM)*. Teachers College at Columbia University. <https://www.leadersproject.org/school-age-language-assessment-measures-slam/>
- Leonard, L. B. (2014). Children with specific language impairment and their contribution to the study of language development. *Journal of Child Language*, 41(01), 38-47. <https://doi.org/10.1017/S0305000914000130>
- Leonard, L. B. (2020). A 200-year history of the study of childhood language disorders of unknown origin: Changes in terminology. *Perspectives of the ASHA Special Interest Groups*, 5(1), 6-11. https://doi.org/10.1044/2019_PERS-SIG1-2019-0007
- Lindsay, G., Dockrell, J., & Palikara, O. (2010). Self-esteem of adolescents with specific language impairment as they move from compulsory education. *International Journal of Language & Communication Disorders*, 45(5), 561-571. <https://doi.org/10.3109/13682820903324910>
- Lindsay, G., Dockrell, J. E., & Strand, S. (2010). Longitudinal patterns of behaviour problems in children with specific speech and language difficulties: Child and contextual factors. *British Journal of Educational Psychology*, 77(4), 811-828. <https://doi.org/10.1348/000709906X171127>
- Lindsay, G., & Strand, S. (2016). Children with language impairment: Prevalence, associated difficulties, and ethnic disproportionality in an English population. *Frontiers in Education*, 1(2), 1-14. <https://doi.org/10.3389/educ.2016.00002>
- Lloyd-Esenkaya, V., Russell, A. J., & Clair, M. C. S. (2020). What are the peer interaction strengths and difficulties in children with developmental language disorder? A systematic review. *International Journal of Environmental Research and Public Health*, 17(9), 3140. <https://doi.org/10.3390/ijerph17093140>
- Lyons, R., & Roulstone, S. (2018). Well-being and resilience in children with speech and language disorders. *Journal of Speech, Language, and Hearing Research*, 61(2), 324-344. https://doi.org/10.1044/2017_JSLHR-L-16-0391
- Manhardt, J., & Rescorla, L. (2002). Oral narrative skills of late talkers at ages 8 and 9. *Applied Psycholinguistics*, 23(1), 1-21. <https://doi.org/10.1017/S0142716402000012>
- Marton, K., Abramoff, B., & Rosenzweig, S. (2005). Social cognition and language in children with specific language impairment (SLI). *Journal of Communication Disorders*, 38(2), 143-162. <https://doi.org/10.1016/j.jcomdis.2004.06.003>
- McCabe, P. C. (2005). Social and behavioral correlates of preschoolers with specific language impairment. *Psychology in the Schools*, 42(4), 373-387. <https://doi.org/10.1002/pits.20064>

- McCormack, J., Harrison, L. J., McLeod, S., & McAllister, L. (2011). A nationally representative study of the association between communication impairment at 4–5 years and children’s life activities at 7–9 years. *Journal of Speech, Language, and Hearing Research*, 54(5), 1328-1348. [https://doi.org/10.1044/1092-4388\(2011/10-0155\)](https://doi.org/10.1044/1092-4388(2011/10-0155))
- McGregor, K. K. (2000). The development and enhancement of narrative skills in a preschool classroom: Towards a solution to clinician-client mismatch. *American Journal of Speech-Language Pathology*, 9(1), 55-71. <https://doi.org/10.1044/1058-0360.0901.55>
- McGregor, K. K. (2020). How we fail children with developmental language disorder. *Language, Speech, and Hearing Services in Schools*, 51(4), 981-992. https://doi.org/10.1044/2020_LSHSS-20-00003
- McGregor, K. K., Ohlmann, N., Eden, N., Arbisi-Kelm, T., & Young, A. (2023). Abilities and disabilities among children with developmental language disorder. *Language, Speech, and Hearing Services in Schools*, 54(3), 927-951. https://doi.org/10.1044/2023_LSHSS-22-00070
- McLean, K. C., Syed, M., Pasupathi, M., Adler, J. M., Dunlop, W. L., Drustrup, D., Fivush, R., Graci, M. E., Lilgendahl, J. P., & Lodi-Smith, J. (2020). The empirical structure of narrative identity: The initial big three. *Journal of Personality and Social Psychology*, 119(4), 920-944. <https://doi.org/10.1037/pspp0000247>
- Miller, R. D., Correa, V. I., & Katsiyannis, A. (2018). Effects of a story grammar intervention with repeated retells for English learners with language impairments. *Communication Disorders Quarterly*, 40(1), 15-27. <https://doi.org/10.1177/1525740117751897>
- MindWing Concepts. (2024). *Critical thinking triangle in action!* <https://mindwingconcepts.com/products/the-critical-thinking-triangle-in-action>
- Mitchell, C., Reese, E., Salmon, K., & Jose, P. (2020). Narrative coherence, psychopathology, and wellbeing: Concurrent and longitudinal findings in a mid-adolescent sample. *Journal of Adolescence*, 79, 16-25. <https://doi.org/10.1016/j.adolescence.2019.12.003>
- Mok, P. L., Pickles, A., Durkin, K., & Conti-Ramsden, G. (2014). Longitudinal trajectories of peer relations in children with specific language impairment. *Journal of Child Psychology and Psychiatry*, 55(5), 516-527. <https://doi.org/10.1111/jcpp.12190>
- Morgan, P. L., Farkas, G., Hillemeier, M. M., Hammer, C. S., & Maczuga, S. (2015). 24-month-old children with larger oral vocabularies display greater academic and behavioral functioning at kindergarten entry. *Child Development*, 86(5), 1351-1370. <https://doi.org/10.1111/cdev.12398>
- Morgan, P. L., Farkas, G., Hillemeier, M. M., Li, H., Pun, W. H., & Cook, M. (2017). Cross-cohort evidence of disparities in service receipt for speech or language impairments. *Exceptional Children*, 84(1), 27-41. <https://doi.org/10.1177/0014402917718341>
- Morgan, P. L., Farkas, G., Hillemeier, M. M., & Maczuga, S. (2012). Are minority children disproportionately represented in early intervention and early childhood special education? *Educational Researcher*, 41(9), 339-351. <https://doi.org/10.3102/0013189X12459678>
- Muniz, M., & Fernandes, D. C. (2016). Autoconceito e ansiedade escolar: um estudo com alunos do ensino fundamental [Self concept and school anxiety: A study with students of fundamental teaching]. *Psicologia Escolar e Educacional*, 20, 427-436. <https://doi.org/10.1590/2175-353920150203784>
- National Institute on Deafness and Other Communication Disorders. (2023). *Developmental language disorder*. <https://www.nidcd.nih.gov/health/developmental-language-disorder>

- Nelson, K., & Fivush, R. (2020). The development of autobiographical memory, autobiographical narratives, and autobiographical consciousness. *Psychological Reports, 123*(1), 71-96. <https://doi.org/10.1177/0033294119852574>
- Nelson, M., & Wilson, L. (2021). Implicit bias and multilingual assessment in school-based speech-language pathologists. *Perspectives of the ASHA Special Interest Groups, 6*(6), 1690-1704. https://doi.org/10.1044/2021_PERSP-21-00113
- Nicolopoulou, A., & Trapp, S. (2018). Narrative interventions for children with language disorders: A review of practices. In A. Bar-On & D. Ravit (Eds.), *Handbook of communication disorders: Theoretical, empirical, and applied linguistic perspectives* (Vol. 15, pp. 357-386). De Gruyter Mouton. <https://doi.org/10.1515/9781614514909-018>
- Norbury, C. F., & Bishop, D. V. (2003). Narrative skills of children with communication impairments. *International Journal of Language & Communication Disorders, 38*(3), 287-313. <https://doi.org/10.1080/136820310000108133>
- Norbury, C. F., Gooch, D., Wray, C., Baird, G., Charman, T., Simonoff, E., Vamvakas, G., & Pickles, A. (2016). The impact of nonverbal ability on prevalence and clinical presentation of language disorder: Evidence from a population study. *Journal of Child Psychology and Psychiatry, 57*(11), 1247-1257. <https://doi.org/10.1111/jcpp.12573>
- Oliveira, A. K. C. d., Matsukura, T. S., & Fontaine, A. M. G. V. (2017). Autoconceito e autoeficácia em crianças com deficiência física: Revisão sistemática da literatura [Self-concept and self-efficacy in children with physical disabilities: A systematic review of literature]. *Revista Brasileira de Educação Especial, 23*(1), 145-160. <https://doi.org/10.1590/S1413-65382317000100011>
- Ortiz, J. A. (2022). *Examining the disproportionate representation of bilingual children in special education* University of Maryland, College Park. <http://hdl.handle.net/1903/29702>
- Özcebe, E., Noyan Erbas, A., & Karahan Tiğrak, T. (2020). Analysis of behavioural characteristics of children with developmental language disorders. *International Journal of Speech-Language Pathology, 22*(1), 30-36. <https://doi.org/10.1080/17549507.2019.1571631>
- Paradis, J., Jia, R., & Arppe, A. (2017). The acquisition of tense morphology over time by English second language children with specific language impairment: Testing the cumulative effects hypothesis. *Applied Psycholinguistics, 38*(4), 881-908. <https://doi.org/10.1017/S0142716416000485>
- Paul, R., Hernandez, R., Taylor, L., & Johnson, K. (1996). Narrative development in late talkers: Early school age. *Journal of Speech, Language, and Hearing Research, 39*(6), 1295-1303. <https://doi.org/10.1044/jshr.3906.1295>
- Paul, R., & Smith, R. L. (1993). Narrative skills in 4-year-olds with normal, impaired, and late-developing language. *Journal of Speech, Language, and Hearing Research, 36*(3), 592-598. <https://doi.org/10.1044/jshr.3603.592>
- Pauls, L. J., & Archibald, L. M. (2021). Cognitive and linguistic effects of narrative-based language intervention in children with developmental language disorder. *Autism & Developmental Language Impairments, 6*, 1-19. <https://doi.org/10.1177/23969415211015867>
- Peña, E. D., Gillam, R. B., Malek, M., Ruiz-Felter, R., Resendiz, M., Fiestas, C., & Sabel, T. (2006). Dynamic assessment of school-age children's narrative ability: An experimental investigation of classification accuracy. *Journal of Speech, Language, and Hearing Research, 49*(5), 1037-1057. [https://doi.org/10.1044/1092-4388\(2006/074\)](https://doi.org/10.1044/1092-4388(2006/074))

- Peristeri, E., Andreou, M., & Tsimpli, I. M. (2017). Syntactic and story structure complexity in the narratives of high- and low-language ability children with autism spectrum disorder. *Frontiers in Psychology, 8*, 1-16. <https://doi.org/10.3389/fpsyg.2017.02027>
- Petersen, D. B. (2011). A systematic review of narrative-based language intervention with children who have language impairment. *Communication Disorders Quarterly, 32*(4), 207-220. <https://doi.org/10.1177/1525740109353937>
- Petersen, D. B., & Spencer, T. D. (2012). The Narrative Language Measures: Tools for language screening, progress monitoring, and intervention planning. *Perspectives on Language Learning and Education, 19*(4), 119-129. <https://doi.org/10.1044/lle19.4.119>
- Petersen, D. B., & Spencer, T. (2016). *CUBED assessment* (narrative language measures & dynamic decoding measures). Language Dynamics Group. <https://www.Languagedynamicsgroup.com/cubed-assessment-download>
- Pico, D. L., Hessling Prahll, A., Biel, C. H., Peterson, A. K., Biel, E. J., Woods, C., & Contesse, V. A. (2021). Interventions designed to improve narrative language in school-age children: A systematic review with meta-analyses. *Language, Speech, and Hearing Services in Schools, 52*(4), 1109-1126. https://doi.org/10.1044/2021_LSHSS-20-00160
- Piers, E. V., & Herzberg, D. S. (2002). *Piers-Harris Children's Self-Concept Scale: Manual*. Western Psychological Services (WPS).
- Pittari, C., & Brown, T. (2020). The relationship between school-age children's perceptions of their self-concept & self-esteem and parents'-reported Executive Functioning. *Journal of Occupational Therapy, Schools, & Early Intervention, 13*(3), 283-301. <https://doi.org/10.1080/19411243.2020.1732265>
- Quesque, F., & Rossetti, Y. (2020). What do theory-of-mind tasks actually measure? Theory and practice. *Perspectives on Psychological Science, 15*(2), 384-396. <https://doi.org/10.1177/1745691619896607>
- Reese, E., Haden, C. A., Baker-Ward, L., Bauer, P., Fivush, R., & Ornstein, P. A. (2011). Coherence of personal narratives across the lifespan: A multidimensional model and coding method. *Journal of Cognition and Development, 12*(4), 424-462. <https://doi.org/10.1080/15248372.2011.587854>
- Reese, E., Myftari, E., McAnally, H. M., Chen, Y., Neha, T., Wang, Q., Jack, F., & Robertson, S. J. (2017). Telling the tale and living well: Adolescent narrative identity, personality traits, and well-being across cultures. *Child Development, 88*(2), 612-628. <https://doi.org/10.1111/cdev.12618>
- Reilly, S., Tomblin, B., Law, J., McKean, C., Mensah, F. K., Morgan, A., Goldfeld, S., Nicholson, J. M., & Wake, M. (2014). Specific language impairment: A convenient label for whom? *International Journal of Language & Communication Disorders, 49*(4), 416-451. <https://doi.org/10.1111/1460-6984.12102>
- Rethfeldt, W. S., McNeilly, L., Laasonen, M., Meir, N., Abutbul-Oz, H., Smolander, S., Goulart, B. N. G., & Hunt, E. F. (2023). Assessment of developmental language disorder in multilingual children: Results from an international survey. *Folia Phoniatica et Logopaedica, 76*(2), 127-150. <https://doi.org/10.1159/000533139>
- Rost, G. C., & McGregor, K. K. (2012). Miranda Rights comprehension in young adults with specific language impairment. *American Journal of Speech-Language Pathology, 21*(2), 101-108. [https://doi.org/10.1044/1058-0360\(2011/10-0094\)](https://doi.org/10.1044/1058-0360(2011/10-0094))

- Samson, A. C., Van den Bedem, N. P., Dukes, D., & Rieffe, C. (2020). Positive aspects of emotional competence in preventing internalizing symptoms in children with and without developmental language disorder: A longitudinal approach. *Journal of Autism and Developmental Disorders*, *50*, 1159-1171. <https://doi.org/10.1007/s10803-019-04336-y>
- Schuele, C. M., & Hadley, P. A. (1999). Potential advantages of introducing specific language impairment to families. *American Journal of Speech-Language Pathology*, *8*(1), 11-22. <https://doi.org/10.1044/1058-0360.0801.11>
- Schulz, P. (2015). Comprehensions of exhaustive Wh-questions. In S. Armon-Lotem & J. de Jong (Eds.), *Assessing multilingual children: Entangling bilingualism from language impairment* (pp. 76-94). Blue Ridge Summit: Multilingual Matters. <https://doi.org/10.21832/9781783093137>
- Seiger-Gardner, L. (2009). Language production approaches to child language disorders. In R. G. Schwartz (Ed.), *Handbook of child language disorders* (pp. 465-487). Psychology Press. <https://doi.org/10.4324/9781315283531>
- Silvestri, P. R., Baglioni, V., Cardona, F., & Cavanna, A. E. (2018). Self-concept and self-esteem in patients with chronic tic disorders: A systematic literature review. *European Journal of Paediatric Neurology*, *22*(5), 749-756. <https://doi.org/10.1016/j.ejpn.2018.05.008>
- Skeat, J., Eadie, P., Ukoumunne, O., & Reilly, S. (2010). Predictors of parents seeking help or advice about children's communication development in the early years. *Child: Care, Health and Development*, *36*(6), 878-887. <https://doi.org/10.1111/j.1365-2214.2010.01093.x>
- Smith, E. R., & Conrey, F. R. (2007). Agent-based modeling: A new approach for theory building in social psychology. *Personality and Social Psychology Review*, *11*(1), 87-104. <https://doi.org/10.1177/1088868306294789>
- Spaulding, T. J., Plante, E., & Vance, R. (2008). Sustained selective attention skills of preschool children with specific language impairment: Evidence for separate attentional capacities. *Journal of Speech, Language, and Hearing Research*, *51*(1), 16-34. [https://doi.org/10.1044/1092-4388\(2008/002\)](https://doi.org/10.1044/1092-4388(2008/002))
- Spencer, T. D., Kajian, M., Petersen, D. B., & Bilyk, N. (2013). Effects of an individualized narrative intervention on children's storytelling and comprehension skills. *Journal of Early Intervention*, *35*(3), 243-269. <https://doi.org/10.1177/1053815114540002>
- Spencer, T. D., & Petersen, D. B. (2020). Narrative intervention: Principles to practice. *Language, Speech, and Hearing Services in Schools*, *51*(4), 1081-1096. https://doi.org/10.1044/2020_LSHSS-20-00015
- Spencer, T. D., & Slocum, T. A. (2010). The effect of a narrative intervention on story retelling and personal story generation skills of preschoolers with risk factors and narrative language delays. *Journal of Early Intervention*, *32*(3), 178-199. <https://doi.org/10.1177/10538151103791>
- St Clair, M. C., Forrest, C. L., Yew, S. G. K., & Gibson, J. L. (2019). Early risk factors and emotional difficulties in children at risk of developmental language disorder: A population cohort study. *Journal of Speech, Language, and Hearing Research*, *62*(8), 2750-2771. https://doi.org/10.1044/2018_JSLHR-L-18-0061
- St Clair, M. C., Pickles, A., Durkin, K., & Conti-Ramsden, G. (2011). A longitudinal study of behavioral, emotional and social difficulties in individuals with a history of specific language impairment (SLI). *Journal of Communication Disorders*, *44*(2), 186-199. <https://doi.org/10.1016/j.jcomdis.2010.09.004>
- Storr, W. (2020). *The science of storytelling: Why stories make us human and how to tell them better*. Abrams.

- Suryana, D., Khairma, F. S., Sari, N. E., Mayar, F., & Satria, S. (2020). Star of the week programs based on peer relationship for children social emotional development. *Journal Pendidikan Usia Dini*, 14(2), 288-302. <https://doi.org/10.21009/JPUUD.142.07>
- To, C. K.-S., Stokes, S. F., Cheung, H.-T., & T'sou, B. (2010). Narrative assessment for Cantonese-speaking children. *Journal of Speech, Language, and Hearing Research*, 53(3), 648-669. [https://doi.org/10.1044/1092-4388\(2009/08-0039\)](https://doi.org/10.1044/1092-4388(2009/08-0039))
- Tomblin, J. B., Records, N. L., Buckwalter, P., Zhang, X., Smith, E., & O'Brien, M. (1997). Prevalence of specific language impairment in kindergarten children. *Journal of Speech, Language, and Hearing Research*, 40(6), 1245-1260. <https://doi.org/10.1044/jslhr.4006.1245>
- Tompkins, V., Farrar, M. J., & Montgomery, D. E. (2019). Speaking your mind: Language and narrative in young children's theory of mind development. *Advances in Child Development and Behavior*, 56, 109-140. <https://doi.org/10.1016/bs.acdb.2018.11.003>
- Toseeb, U., Vincent, J., Oginni, O. A., Asbury, K., & Newbury, D. F. (2023). The development of mental health difficulties in young people with and without developmental language disorder: A gene-environment interplay study using polygenic scores. *Journal of Speech, Language, and Hearing Research*, 66(5), 1639-1657. https://doi.org/10.1044/2023_JSLHR-22-00664
- Tyler, A. A., & Sandoval, K. T. (1994). Preschoolers with phonological and language disorders: Treating different linguistic domains. *Language, Speech, and Hearing Services in Schools*, 25(4), 215-234. <https://doi.org/10.1044/0161-1461.2504.215>
- Van den Bedem, N. P., Dockrell, J. E., Van Alphen, P. M., Kalicharan, S. V., & Rieffe, C. (2018). Victimization, bullying, and emotional competence: Longitudinal associations in (pre) adolescents with and without developmental language disorder. *Journal of Speech, Language, and Hearing Research*, 61(8), 2028-2044. https://doi.org/10.1044/2018_JSLHR-L-17-0429
- Van den Bedem, N. P., Dockrell, J. E., Van Alphen, P. M., & Rieffe, C. (2020). Emotional competence mediates the relationship between communication problems and reactive externalizing problems in children with and without developmental language disorder: A longitudinal study. *International Journal of Environmental Research and Public Health*, 17(16), 1-19. <https://doi.org/10.3390/ijerph17166008>
- Vanaken, L., Bijttebier, P., Fivush, R., & Hermans, D. (2022). Narrative coherence predicts emotional well-being during the COVID-19 pandemic: A two-year longitudinal study. *Cognition and Emotion*, 36(1), 70-81. <https://doi.org/10.1080/02699931.2021.1902283>
- Vanaken, L., Bijttebier, P., & Hermans, D. (2021). An investigation of the coherence of oral narratives: Associations with mental health, social support and the coherence of written narratives. *Frontiers in Psychology*, 11, 1-10. <https://doi.org/10.3389/fpsyg.2020.602725>
- Vanaken, L., & Hermans, D. (2020). How am I going to tell you this? The relations between social anxiety and narrative coherence. *Memory*, 28(10), 1191-1203. <https://doi.org/10.1080/09658211.2020.1826971>
- Vanaken, L., & Hermans, D. (2021). Be coherent and become heard: The multidimensional impact of narrative coherence on listeners' social responses. *Memory & Cognition*, 49, 276-292. <https://doi.org/10.3758/s13421-020-01092-8>
- Vanderveren, E., Bijttebier, P., & Hermans, D. (2019). Autobiographical memory coherence and specificity: Examining their reciprocal relation and their associations with internalizing symptoms and rumination. *Behaviour Research and Therapy*, 116, 30-35. <https://doi.org/10.1016/j.brat.2019.02.003>

- Vanderveren, E., Bijttebier, P., & Hermans, D. (2020). Autobiographical memory coherence in emotional disorders: The role of rumination, cognitive avoidance, executive functioning, and meaning making. *PLOS One*, *15*(4), 1-16. <https://doi.org/10.1371/journal.pone.0231862>
- Vandewalle, E., Boets, B., Boons, T., Ghesquière, P., & Zink, I. (2012). Oral language and narrative skills in children with specific language impairment with and without literacy delay: A three-year longitudinal study. *Research in Developmental Disabilities*, *33*(6), 1857-1870. <https://doi.org/10.1016/j.ridd.2012.05.004>
- Vender, M., Hu, S., Mantione, F., Delfitto, D., & Melloni, C. (2018). The production of clitic pronouns: A study on bilingual and monolingual dyslexic children. *Frontiers in Psychology*, *9*, 1-17. <https://doi.org/10.3389/fpsyg.2018.02301>
- Voci, S. C., Beitchman, J. H., Brownlie, E., & Wilson, B. (2006). Social anxiety in late adolescence: The importance of early childhood language impairment. *Journal of Anxiety Disorders*, *20*(7), 915-930. <https://doi.org/10.1016/j.janxdis.2006.01.007>
- Wadman, R., Botting, N., Durkin, K., & Conti-Ramsden, G. (2011). Changes in emotional health symptoms in adolescents with specific language impairment. *International Journal of Language & Communication Disorders*, *46*(6), 641-656. <https://doi.org/10.1111/j.1460-6984.2011.00033.x>
- Wadman, R., Durkin, K., & Conti-Ramsden, G. (2008). Self-esteem, shyness, and sociability in adolescents with specific language impairment (SLI). *Journal of Speech, Language, and Hearing Research*, *51*(4), 938-952. [https://doi.org/10.1044/1092-4388\(2008\)069](https://doi.org/10.1044/1092-4388(2008)069)
- Wadman, R., Durkin, K., & Conti-Ramsden, G. (2011). Social stress in young people with specific language impairment. *Journal of Adolescence*, *34*(3), 421-431. <https://doi.org/10.1016/j.adolescence.2010.06.010>
- Westby, C., & Culatta, B. (2016). Telling tales: Personal event narratives and life stories. *Language, Speech, and Hearing Services in Schools*, *47*(4), 260-282. https://doi.org/10.1044/2016_LSHSS-15-0073
- Wise, J. A. (2016). *A new theory of mind: The theory of narrative thought*. Cambridge Scholars Publishing.
- Wittke, K., & Spaulding, T. J. (2018). Which preschool children with specific language impairment receive language intervention? *Language, Speech, and Hearing Services in Schools*, *49*(1), 59-71. https://doi.org/10.1044/2017_LSHSS-17-0024
- World Health Organization. (2020). *International classification of diseases (ICD-11)*. <https://www.who.int/standards/classifications/classification-of-diseases>
- Wu, S., Zhao, J., de Villiers, J., Liu, X. L., Rolfhus, E., Sun, X., Li, X., Pan, H., Wang, H., & Zhu, Q. (2023). Prevalence, co-occurring difficulties, and risk factors of developmental language disorder: First evidence for Mandarin-speaking children in a population-based study. *The Lancet Regional Health—Western Pacific*, *34*, 1-11. <https://doi.org/10.1016/j.lanwpc.2023.100713>
- Yenen, Z. B. (2023). *Adolescents' personal and vicarious life stories: Thematic coherence, interpretations, and connections*. Middle East Technical University.
- Yew, S. G. K., & O'Kearney, R. (2013). Emotional and behavioural outcomes later in childhood and adolescence for children with specific language impairments: Meta-analyses of controlled prospective studies. *Journal of Child Psychology and Psychiatry*, *54*(5), 516-524. <https://doi.org/10.1111/jcpp.12009>
- Yew, S. G. K., & O'Kearney, R. (2015). The role of early language difficulties in the trajectories of conduct problems across childhood. *Journal of Abnormal Child Psychology*, *43*, 1515-1527. <https://doi.org/10.1007/s10802-015-0040-9>

- Young, A. R., Beitchman, J. H., Johnson, C., Douglas, L., Atkinson, L., Escobar, M., & Wilson, B. (2002). Young adult academic outcomes in a longitudinal sample of early identified language impaired and control children. *Journal of Child Psychology and Psychiatry*, 43(5), 635-645. <https://doi.org/10.1111/1469-7610.00052>
- Zhang, X., & Tomblin, J. B. (2000). The association of intervention receipt with speech-language profiles and social-demographic variables. *American Journal of Speech-Language Pathology*, 9(4), 345-357. <https://doi.org/10.1044/1058-0360.0904.345>