Title: Narrative Retell Skills of School-Age Children with Down Syndrome

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Introduction: Children with Down syndrome (DS) exhibit below average nonverbal intelligence and impaired language skills; however, their spoken narrative production is a relative strength (e.g., Chapman & Hesketh, 2000; Finestack, Palmer, & Abbeduto, 2012; Miles & Chapman, 2002). We examined spoken fictional narrative retells and examined how they contribute to literacy skills of children with DS.

Method: Fifteen, 8- to 18-year old children with Down syndrome produced spoken fictional narratives following a clinician model using the wordless picture book *Frog Goes to Dinner* (Mayer, 1969). Spoken fictional narratives following a modeled story were analyzed at the microstructure and macrostructure level. Receptive vocabulary, word-level reading, and reading comprehension also were measured.

Results: Children with DS produced limited syntactic (MLU-M: $M = 6.59$, $SD = 2.50$) and semantic diversity (NDW: $M = 54.53$, $SD = 24.17$). Further analyses of sentence complexity using the Narrative Assessment Protocol (NAP; Justice, Bowles, Pence & Gosse, 2010) revealed that the spoken narratives of children with DS rarely contained compound or complex sentences; however, prepositional phrases were frequently used to elaborate utterances. In addition, NAP analysis revealed that participants used verbs more often than nouns and modifiers. At the macrostructure level, children with DS included many essential story grammar components (e.g., main characters, conflict/resolution pairings) but did not provide sufficient detail (e.g., modifiers, elaborated noun phrases). Results reflect mastery over concrete ideas but a diminished ability to produce abstract concepts such as characters’ thoughts or emotions. A series of regression analyses were completed to investigate whether narrative performance was related to word-level reading and reading comprehension. Macrostructure was the only variable that contributed unique variance to reading comprehension after controlling for word level reading and receptive vocabulary, $F(1,11) = 5.79$, $p = .035$. We then considered that word level reading, instead of reading comprehension, may be more sensitive to variation in performance among the participants in this study. After controlling for receptive vocabulary, all four narrative measures (MLU-M, NDW, NAP, NSS) contributed unique variance to word level reading. Additionally, strong correlations (range: $r = .63-.97$) were found between narrative microstructure and macrostructure skills and literacy skills.

Discussion: The majority of research on literacy skills of children with Down syndrome has focused on identifying how receptive language skills and not expressive language skills are related to reading (e.g., Laws, Brown, & Main, 2016). We found that expressive language skills, specifically spoken narrative skills, are related to word-level reading and reading comprehension for children with Down syndrome. Narrative analysis using the Narrative Assessment Protocol provided detailed analysis, beyond MLU and NDW, of the sentence structure of spoken narrative retells. Findings from this study support the use of narrative microstructure and macrostructure analyses as a valuable tool for educators to guide assessment and intervention planning for school-aged children with DS. Knowing information about a child’s narrative skills provides information not only about their expressive language skills, but also about literacy skills. Future studies should consider the efficacy of intervention strategies to improve the narrative skills of children with DS and determine whether improvement of narrative skills increases their word-level reading and reading comprehension.

References/Citations: