Effects of the PROsyntax program in enhancing the syntax of preschool-age children with Developmental Language Disorder and Autism Spectrum Disorder

Background: Children with Developmental Language Disorder (DLD) and Autism Spectrum Disorder (ASD) frequently present syntactic impairments. Early evidence-based interventions are crucial to mitigate long-term impacts. PROsyntax, a syntax-focused intervention program, was recently developed for European Portuguese (EP), but its effectiveness has not been established in a large sample. **Aim:** This study aimed to examine the effects of PROsyntax in expressive and receptive syntax in preschool-age children with DLD or ASD. **Methods:** A nonrandomized controlled trial was conducted with 64 children aged 3-6 years (Experimental Group (EG), n=32; Control group (CG), n=32, 50% with DLD and 50% with ASD per group). At baseline (T1), both groups were assessed using 2 standardized instruments: SIN:TACS for expression and Subtest 3 of ALO for comprehension. EG received 24 biweekly 1-hour PROsyntax sessions, delivered in school settings by a speech and language therapist, while the CG received no intervention. Both groups were reassessed after this period (T2). In a second phase, CG received the same intervention, followed by a third assessment (T3). Correlation analysis was also conducted. **Results:** In Phase 1 (T1-T2), mixed ANOVAs revealed significant Time x Group interactions for expression (SIN:TACS: $F(1,60)=343.87$; $p<0.001$; $\eta_p^2=0.85$) and comprehension (ALO: $F_{TxG}(1,60)=328.50$; $p<0.001$; $\eta_p^2=0.85$). Large effects were observed (SIN:TACS: d=3.10 (DLD), d=4.70 (ASD); ALO: d=3.64 (DLD), d=3.53 (ASD)). Strong correlations were found between expressive and receptive scores at both T1 ($r=0.81$; $p<0.001$) and T2 ($r=0.94$; $p<0.001$). CG improvements after intervention were comparable to those observed in EG. **Conclusions:** PROsyntax led to substantial improvements in expressive and receptive syntax in preschoolers with ASD or DLD, with similar outcomes across diagnoses. These results support its clinical application in early intervention and highlight its potential as an evidence-based resource for EP.

Key-words: developmental language disorder; autism spectrum disorder; intervention; syntax; european portuguese