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# Narrative assessment following the Cognitive-Pragmatic Treatment in adolescents with ASD

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Individuals with Autism Spectrum Disorder (ASD) show difficulties in social interaction and communicative skills<sup>1</sup>, namely how to use language<sup>2</sup> and other expressive means such as gestures, facial expressions<sup>3</sup> appropriate to a given context. Communicative-pragmatics includes narrative ability that is the description of real life or fictive-based accounts of temporally and causally related events<sup>4</sup>. Previous studies have reported that verbally fluent children with ASD show impairment in the narrative domain<sup>5</sup>. However, little is known about the narrative competence of adolescents with ASD. Few studies have reported that syntactic oversimplifications persist and that the ability to express temporal and causal connections between events is reduced in adolescents with ASD<sup>6-7</sup>. These narrative alterations have a great impact on daily interactions and only general communicative treatments have focused on such difficulties in adolescents with ASD<sup>8-10</sup>. Little attention has been directed to interventions specifically targeted to narrative abilities in adolescents with ASD<sup>11</sup>. This study aims to assess whether the version for adolescents of the Cognitive-Pragmatic Treatment (A-CPT)<sup>10</sup> is effective in enhancing the narrative skills of 16 verbally fluent adolescents with ASD. We assessed pre- and post-treatment narrative production skills by using a multi-level approach for the analysis of discourse production<sup>12</sup> which focused on both micro- (Mean length of utterance, Omissions of morphosyntactic information, and Complete sentences) and macro-linguistic (Cohesive, Coherence errors, and Lexical information units) skills. We also assessed a set of cognitive and theory of mind abilities before and after training to ascertain whether the effect of the training was specific for the target variable of the study. Results revealed a significant improvement in the post-treatment condition on some micro-linguistic features investigated (Omissions of morphosyntactic information:  $t=3.12$ ;  $p<.007$ ; Complete sentences:  $t=-3.59$ ;  $p<.003$ ) and a decrease in cohesion errors ( $t=3.63$ ;  $p<.002$ ). No significant changes were noted in Mean length of utterance, Coherence errors and Lexical Information Units. Correlation analyses showed relations between the omissions of morphosyntactic information, the increase of complete sentences, and the reduction of cohesive errors. No improvement was detected between pre- and post-training in cognitive and theory of mind abilities, except the Naming task. These results

suggest that a pragmatically oriented rehabilitation program such as the A-CPT may be useful in enhancing grammatical and cohesive efficiency in narrative discourse production tasks.

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