

Does Executive Functioning Affect Performance on the CVLT-C?

Jennifer Long¹, Vilija M. Petrauskas¹, Joseph E. Casey¹, & Erin Picard²

¹Department of Psychology & ²Windsor-Essex Catholic District School Board

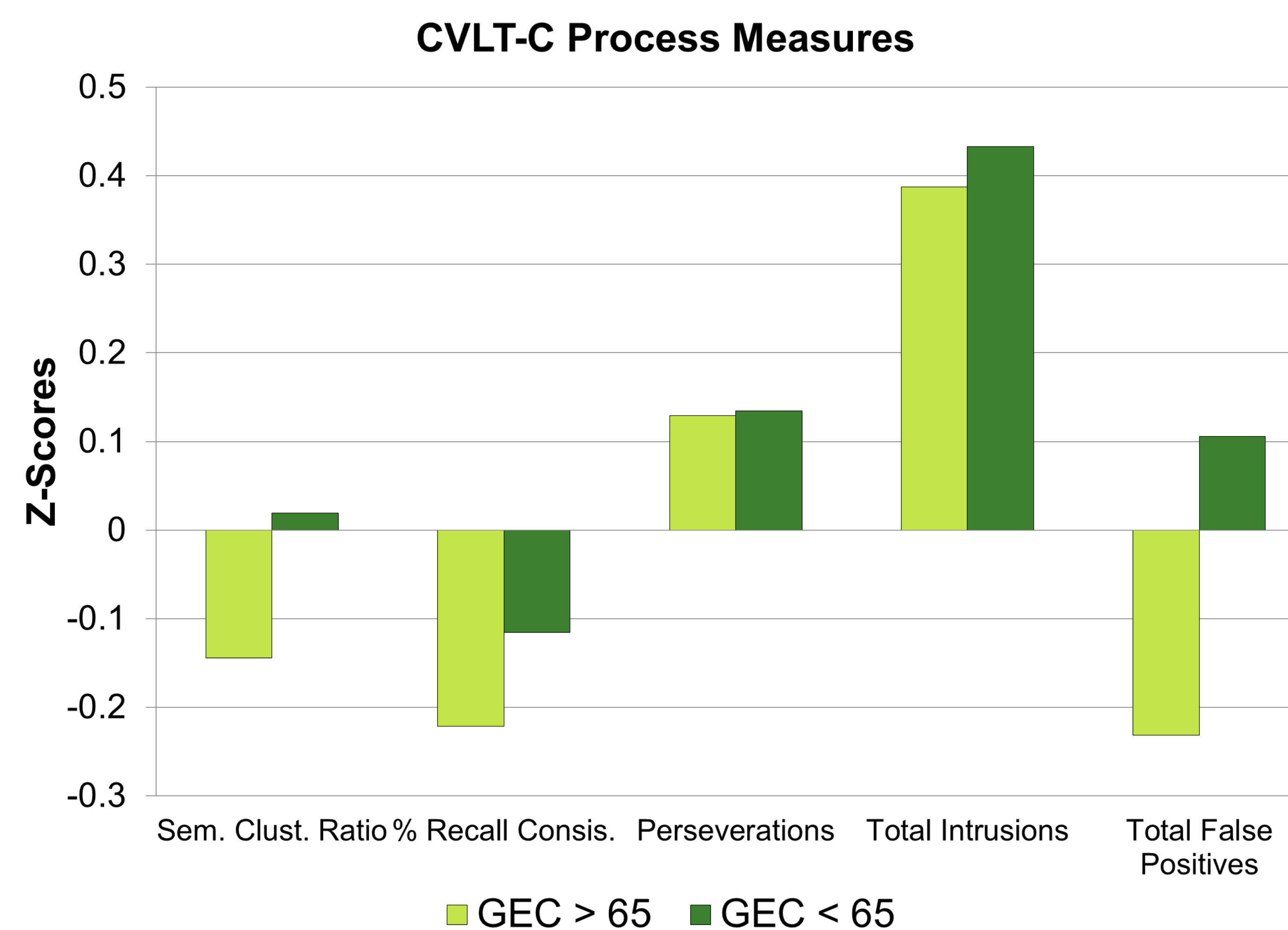
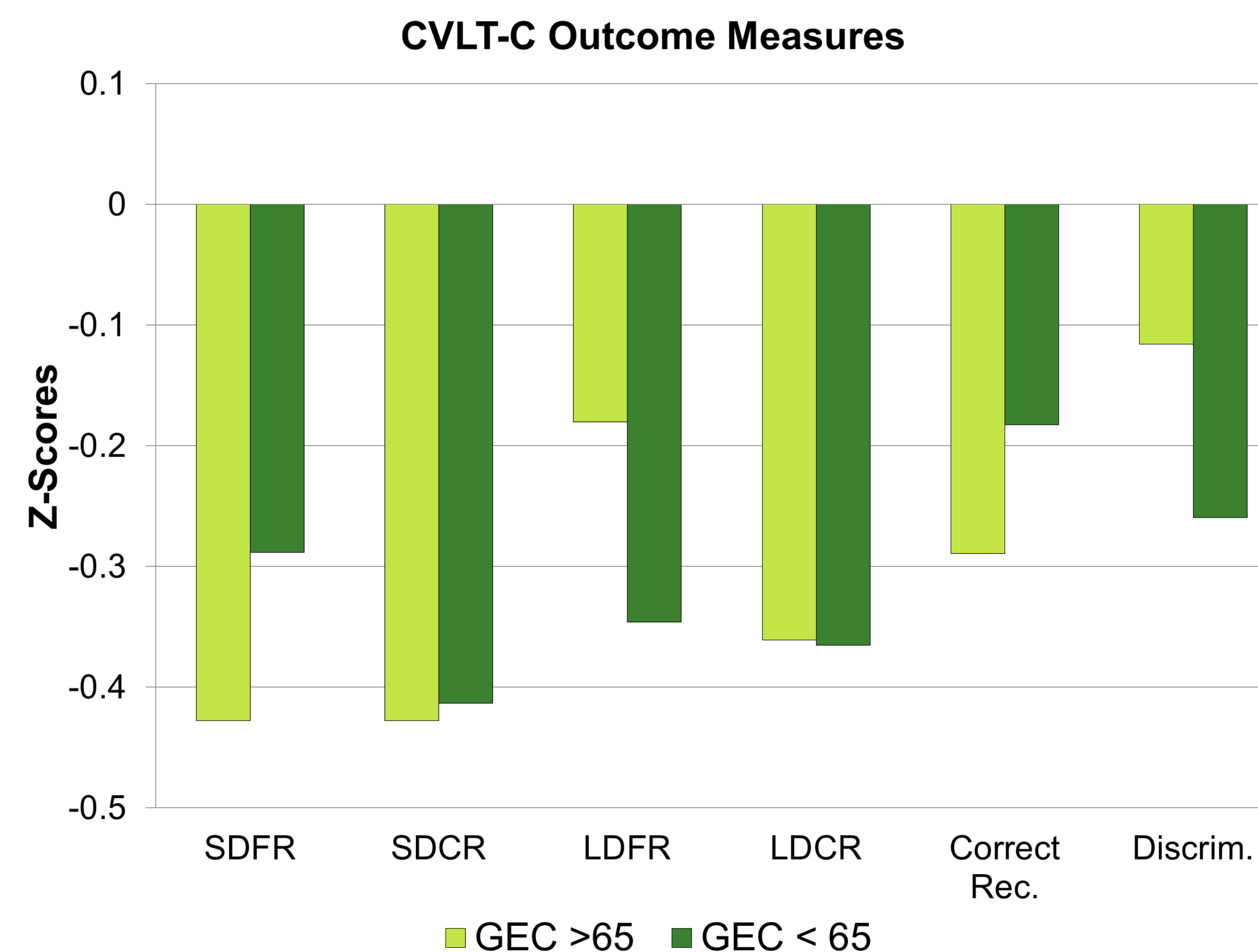


Introduction

- It is believed that executive functions are necessary for list learning memory tests as one must use their own strategies to organize and encode the information for optimal learning and recall (Brooks, Weaver, & Scialfa, 2006)
- Studies with various adult clinical populations have found that deficits in executive functioning negatively affected performance on verbal list learning tests (Ringe, Frol, Saine, & Cullham, 1999; Tremont, Halpert, Javorsky, & Stern, 2000)
- The relationship between executive functioning and performance on a verbal list learning test in children referred for psychoeducational assessment has not yet been investigated
- Executive functioning and memory are cognitive processes important for learning
- Examining how they are related may contribute to further understanding how children experience difficulties with learning in school
- Understanding how these abilities are related may lead to identification of specific areas to target and appropriate intervention strategies
- The purpose of this study is to investigate the relationship between executive functioning and performance on a verbal list learning memory test in children

Methods

- Children referred for psychological assessment through their school were classified as having EF impairment ($n = 81$) and no EF impairment ($n = 41$)
- EF was measured using the Behavior Rating Inventory of Executive Function (BRIEF) – Teacher Form
- Children were classified as having EF impairment if their Global Executive Composite (GEC) was in the clinically significant range (i.e., $GEC \geq 65$)
- Performance on outcome and process measures of the CVLT-C were compared between the EF groups using MANOVA
- Correlations between BRIEF and CVLT-C scores were also examined



Demographics

	GEC ≥ 65	GEC < 65
Gender	91 M, 37 F	47 M, 13 F
Age	11.25 (1.99)	10.66 (2.06)
FSIQ	80.42 (12.01)	81.27 (11.18)
VCI	83.40 (11.61)	82.80 (11.61)
PRI	87.78 (14.99)	88.28 (16.18)
WMI	82.23 (11.46)	81.70 (10.99)
PSI	83.23 (11.46)	86.25 (9.86)
GEC	78.72 (10.14)	56.03 (6.65)

Results

- Groups did not differ on Full Scale IQ, Verbal Comprehension Index, Working Memory Index, or Perceptual Reasoning Index scores of the WISC-IV
- There were no group differences on any of the CVLT-C learning outcome measures ($F[7, 114] = .542, p > .05, \text{Wilk's } \lambda = .968$)
- There were no group differences on any of the CVLT-C learning process measures ($F[5, 116] = 1.107, p > .05, \text{Wilk's } \lambda = .954$)
- No significant correlations were found between any of the BRIEF Indexes and CVLT-C scores

Discussion & Conclusions

- Better EF, as measured by the BRIEF, did not result in better performance on the CVLT-C
- The findings from this study do not support the idea that more effective processing strategies (i.e., better EF) result in better performance on the CVLT-C
- A different study with adolescents without any impairments found that measures of EF correlated poorly with measures of learning process, and correlated significantly with measures of learning outcome (Beebe et al., 2000)
- This suggests that EF as measured by direct measures may be assessing different aspects of EF from that assessed via questionnaires (i.e., the BRIEF)
- That EF is not fully developed in children may account for a lack of effect as compared to adults