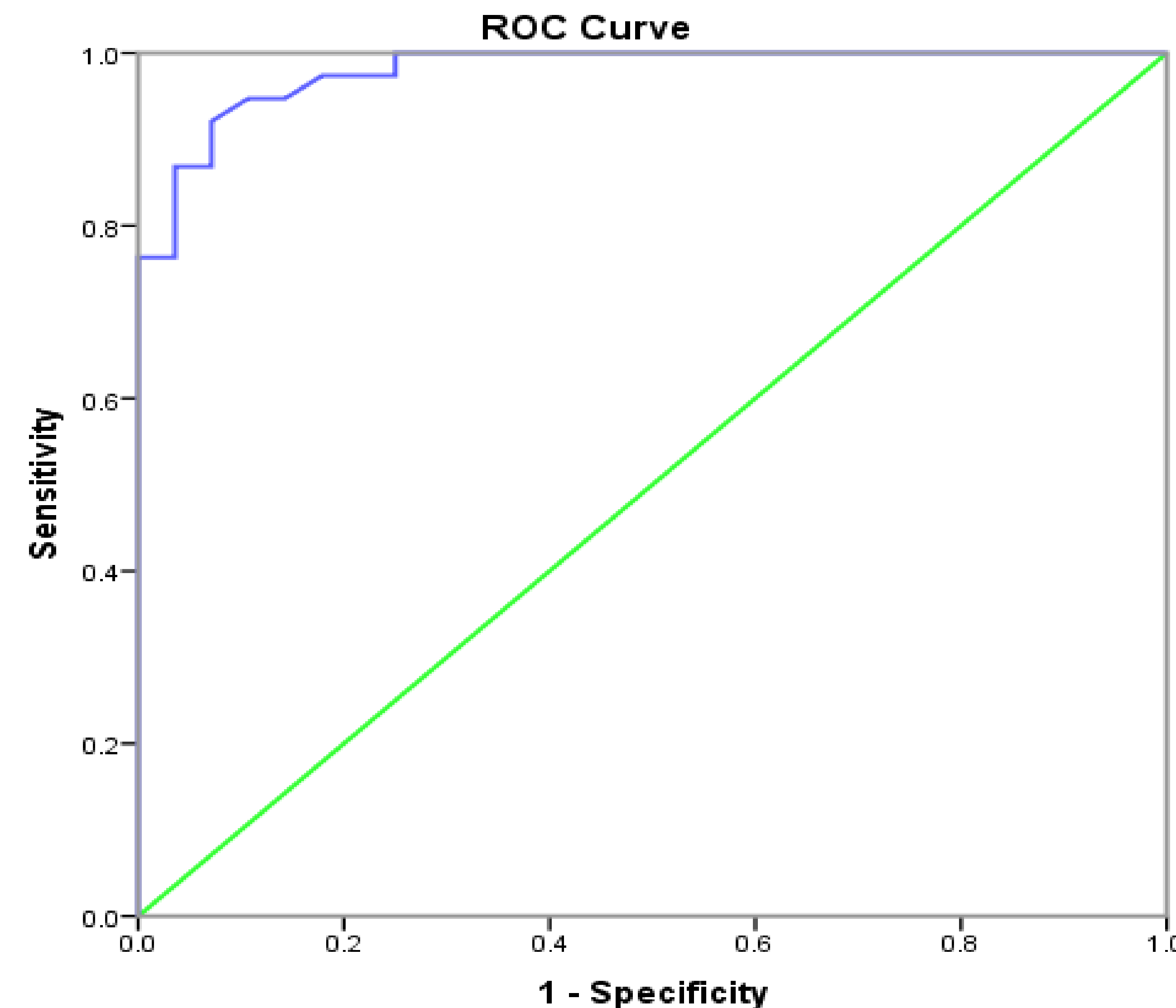




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Introduction

- The use of rating scales for the clinical assessment of executive function (EF) deficits is advocated due to advantageous ecological and predictive validity (Isquith et al., 2013; Barkley & Murphy, 2011; Mcauley et al, 2011).
- The Barkley Deficit of Executive Functioning Scale - Children and Adolescents (BDEFS-CA; 2012) is a new parent-completed behaviour rating scale intended for clinical evaluation of EF.
- In addition to five factor scales, the BDEFS-CA includes a screening scale, ADHD-EF Index, devised to identify children at risk for ADHD.
- Scale items intentionally avoid DSM-IV based diagnostic criteria for ADHD.
- There is no independent evaluation of the effectiveness of the ADHD-EF Index in identifying ADHD.
- **The present study** examined the ability of ADHD-EF Index to identify children diagnosed with ADHD and neurotypical children using Receiver Operating Characteristic (ROC) curve analysis.



ADHD-EF Index Score*	Sensitivity	Specificity	ADHD-EF Index Score	Sensitivity	Specificity
9.0	1.00	.000	24.5	.763	1.00
10.5	1.00	.393	25.5	.711	1.00
11.5	1.00	.571	26.5	.632	1.00
12.5	1.00	.643	27.5	.500	1.00
13.5	1.00	.750	28.5	.368	1.00
14.5	.974	.750	30.0	.342	1.00
15.5	.974	.821	31.5	.237	1.00
16.5	.947	.857	32.5	.211	1.00
17.5	.947	.893	33.5	.132	1.00
18.5	.921	.929	34.5	.105	1.00
19.5	.868	.929	36.0	.053	1.00
21.0	.868	.964	38.0	.026	1.00
22.5	.816	.964	40.0	.000	1.00
23.5	.763	.964			

*raw scores; range 10-40

Methods

Participants

- An archival data set based on a sample recruited from the community for a study examining the fine motor skills of children with ADHD was analyzed.
- ADHD group inclusion criteria were prior ADHD diagnosis and T-score ≥ 70 on Conner's DSM-IV-TR Inattentive and/or Hyperactive subscales.
- Control group comprised of children without prior ADHD and neurological diagnoses and T-score ≤ 50 on Conner's DSM-IV-TR Inattentive and/or Hyperactive subscales.
- Groups were comparable for age and ethnicity
- Groups differed significantly on estimated IQ, Conners Inattention and Hyperactivity subscales, and BDEFS-EF Index.

Analysis

- ROC curve analysis using the EF Index scores.

Results & Conclusions

- BDEFS-CA ADHD-EF Index score identified with high accuracy ADHD and control participants (area under the curve=.979; $p < .001$; $SE \pm .013$)
- Suggested clinically significant score values reported in the manual corresponded to optimal sensitivity (95%) and specificity (89%) estimates.
- Score of 17 falls at the lower border of recommended clinically significant range
- Scores indicative of high ADHD risk (≥ 24) correspond to 100% specificity values, with loss in sensitivity ($\leq 76\%$) (values highlighted in table)
- Results provide preliminary evidence of clinical utility of BDEFS-CA in identifying children with ADHD from neurotypical children.
- Further validation with non-ADHD clinical samples is necessary.

	ADHD	Controls
n	38	28
Mean age (months)	11.6 (1.5)	11.4 (1.5)
Estimate IQ	94.8 (12.5)	106.1 (12.9)
Inattention subscale	80.6 (8.1)	45.3 (6,4)
Hyperactivity subscale	81.1 (10.0)	43.8 (4.9)
EF Index Score	27.5 (5.7)	12.6 (3.6)