# Profile Analysis of Executive Functioning in Adults with Developmental Disorders on the Behavior Rating Inventory of Executive Function, Second Edition—Adult Version (BRIEF2A)

Maegan D. Sady[1], Adam P. Barrett-Clarke[1], Gerard A. Gioia[2], Allyson G. Harrison[3], Peter K. Isquith[4], Robert M. Roth[5]

[1]PAR, Inc; Lutz, FL [2]Children's National Hospital, George Washington University School of Medicine & Health Sciences; Washington, DC [3]Queens University; Kingston, Ontario, Canada
[4]Boston Children's Hospital, Harvard Medical School; Boston, MA [5]Geisel School of Medicine at Dartmouth; Hanover, NH

## Background and Objective

Executive functioning (EF) weaknesses have been identified in adults with developmental disorders including attention-deficit/hyperactivity disorder (ADHD; Barkley, 1997), autism spectrum disorder (ASD; St. John et al., 2022; Xie et al., 2020), and learning disability (LD; Smith-Spark & Gordon, 2022). While profiles of everyday EF strengths and weakness are well-established in children with these developmental disorders (Gioia et al., 2015), these profiles have not been investigated well in adults.

***Objective:*** We examined profiles of self- and informant-reported EF in adults with ADHD, ASD, and LD on the Behavior Rating Inventory of Executive Function, Second Edition-Adult Version (BRIEF2A; Roth et al., 2024).

## Method

***Participants:*** The sample consisted of 79 adults diagnosed with ADHD, 35 with ASD, and 24 with LD, along with 165 demographically matched (age and gender) healthy adults (HA); see Table 1. Informants also participated, with *n* = 57 with ADHD, 36 with ASD, 24 with LD, and 132 HA; see Table 2.

***Measures and Procedure:*** All participants completed the 70-item Self-Report Form of the BRIEF2A, a measure of everyday executive function; most also had an informant complete the Informant Report Form. Clinical groups completed the measure as part of a neuropsychological or psychological evaluation and healthy adults as part of the BRIEF2A normative sample.

***Analysis:*** Ratings on the BRIEF2A clinical scales were within-subjects dependent variables in a profile analysis with diagnostic group (ADHD, ASD, LD) as the between-subjects factor in two MANOVAs (self and informant).

## Results

***Overall Results:*** See Table 3 for results of MANOVAs. All main effects and interactions were significant ($p < .001$), with substantial differences between diagnostic groups for both self- and informant report ($\eta^2 > .40$), indicating significant differences in average *T* scores. Significant interactions were found on self- and informant report ($\eta^2 = .10$ and .13, respectively), indicating that profiles (patterns) of scale elevations differed between diagnostic groups.

***Profiles of Relative Elevations:*** On self-report, adults in all three clinical groups showed relative elevations compared to HA on the Working Memory and Plan/Organize scales (Cohen's $d = 0.9–2.2$). In addition, adults with ADHD had relative elevations on the Task-Monitor ($d = 1.9$) and Inhibit ($d = 1.8$) scales, adults with ASD had elevations on the Shift scale ($d = 1.3$), and adults with LD had weaknesses on the Inhibit scale ($d = 1.0$). See Figure 1.

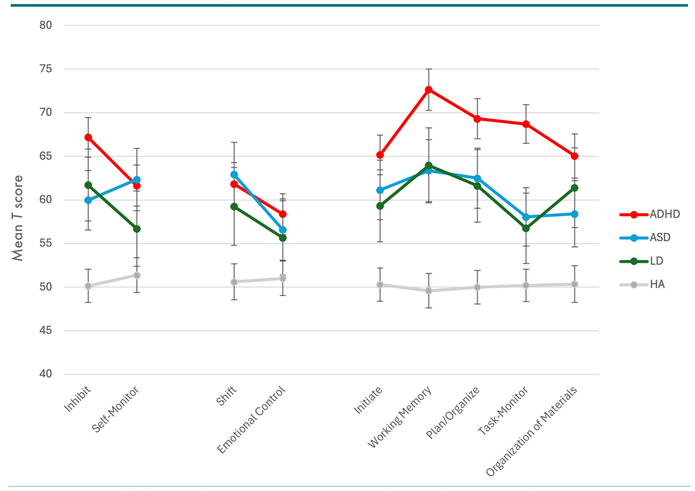
On informant report, a similar pattern emerged. Adults in all three clinical groups were again rated highly on Working Memory and Plan/Organize scales (Cohen's $d = 1.4–2.6$). In addition, adults with ADHD were rated highly on Initiate and Task-Monitor ($d = 2.2$ on both), adults with ASD were rated highly on Shift ($d = 1.9$), and adults with LD were rated highly on Initiate ($d = 1.5$). See Figure 2.

## Conclusions

***Summary:*** Individuals with three common developmental disorders report distinguishable patterns of everyday EF. While all individuals have self- and informant-reported weaknesses in working memory and planning/organization, other areas are unique to each diagnosis. Those with ADHD have substantial difficulty monitoring tasks and inhibiting, those with ASD have difficulty adapting to change, and those with LD show problems inhibiting and initiating.

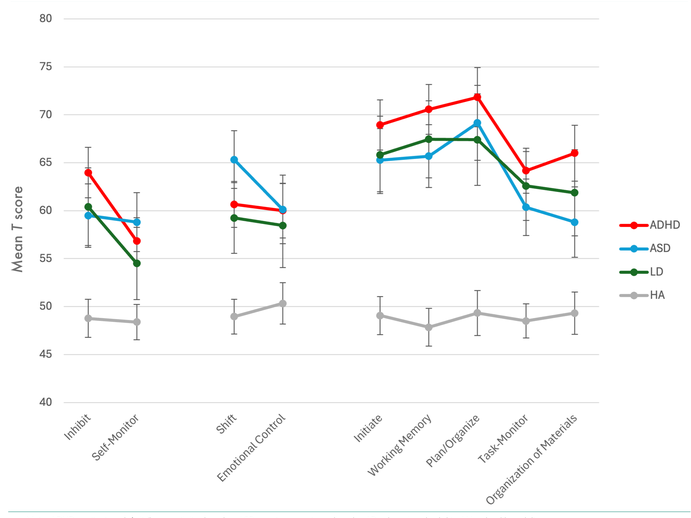
***Clinical Implications:*** Interventions and accommodations to support working memory and planning/organization would be helpful to adults with diverse developmental disorders. Treatment should of course be tailored to each individual, but common treatment targets may include follow-through and impulse control for ADHD, increasing flexibility for ASD, and impulse control and getting started on tasks for LD. The BRIEF2A is helpful in identifying unique problem areas associated with core and associated features of each diagnosis.

**Figure 1. BRIEF2A Self-Report Profiles**




*Note.* ADHD = attention-deficit/hyperactivity disorder, ASD = autism spectrum disorder, LD = learning disability, HA = healthy adults.

**Figure 2. BRIEF2A Informant Report Profiles**




*Note.* ADHD = attention-deficit/hyperactivity disorder, ASD = autism spectrum disorder, LD = learning disability, HA = healthy adults.

**Table 1. Demographic Characteristics of BRIEF2A Self-Report Subsamples**

| | ADHD | ADHD-matched HA | ASD | ASD-matched HA | LD | LD-matched HA |
|---|---|---|---|---|---|---|
| ***N*** | 79 | 79 | 35 | 35 | 24 | 24 |
| **Age in years (min–max)** | 18–74 | 18–74 | 18–58 | 18–58 | 18–38 | 18–38 |
| **Age in years (M(SD))** | 29.14 (13.47) | 29.16 (13.45) | 21.86 (7.78) | 21.86 (7.78) | 20.92 (4.48) | 21.00 (4.43) |
| **Sex n (%)** | | | | | | |
| **Female** | 30 (38%) | 30 (38%) | 6 (17%) | 6 (17%) | 12 (50%) | 12 (50%) |
| **Male** | 49 (62%) | 49 (62%) | 29 (83%) | 29 (83%) | 12 (50%) | 12 (50%) |

*Note.* All healthy comparison samples are age- and gender-matched from the normative sample. ADHD = attention-deficit/hyperactivity disorder; HA = healthy adult; ASD = autism spectrum disorder; LD = learning disability.

**Table 2. Demographic Characteristics of BRIEF2A Informant Report Subsamples**

| | ADHD | ADHD-matched HA | ASD | ASD-matched HA | LD | LD-matched HA |
|---|---|---|---|---|---|---|
| ***N*** | 57 | 57 | 36 | 36 | 24 | 24 |
| **Age in years (min–max)** | 18–49 | 18–49 | 18–58 | 18–58 | 18–38 | 18–38 |
| **Age in years (M(SD))** | 23.25 (8.09) | 23.25 (8.09) | 21.28 (6.93) | 21.28 (6.93) | 20.92 (4.48) | 20.92 (4.48) |
| **Sex n (%)** | | | | | | |
| **Female** | 21 (37%) | 21 (37%) | 8 (22%) | 8 (22%) | 12 (50%) | 12 (50%) |
| **Male** | 36 (63%) | 36 (63%) | 28 (78%) | 28 (78%) | 12 (50%) | 12 (50%) |

*Note.* All healthy comparison samples are age- and gender-matched from the normative sample. ADHD = attention-deficit/hyperactivity disorder; HA = healthy adult; ASD = autism spectrum disorder; LD = learning disability.

**Table 3. MANOVA Results for Comparison of BRIEF2A Scale Scores in Adults with Developmental Disorders Versus Matched Healthy Adults**

| **Test** | *F* | *df* | *p* | $\eta^2$ |
|---|---|---|---|---|
| **Self-Report Form[a]** | | | | |
| Between subjects: diagnostic group | 56.92 | 3 | <.001 | .41 |
| Within subjects: BRIEF2A clinical scale | 12.17 | 8 | <.001 | .05 |
| Interaction: diagnostic group × scale | 8.59 | 24 | <.001 | .10 |
| Error | | 247 | | |
| **Informant Report Form[b]** | | | | |
| Between subjects: diagnostic group | 55.08 | 3 | <.001 | .44 |
| Within subjects: BRIEF2A clinical scale | 35.64 | 8 | <.001 | .14 |
| Interaction: diagnostic group × scale | 9.72 | 24 | <.001 | .12 |
| Error | | 212 | | |

*Note.* MANOVA = mulivariate analysis of variance.
[a]Diagnostic groups included attention deficit/hyperactivity disorder (ADHD; *n* = 79), autism spectrum disorder (ASD; *n* = 35), learning disability (LD; *n* = 24), and age- and gender-matched healthy adults (*n* = 113).
[b]Diagnostic groups included ADHD (*n* = 57), ASD (*n* = 36), LD (*n* = 24), and age- and gender-matched healthy adults (*n* = 99).

## References

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