ADHD Characteristics in Children Who Stutter

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INTRODUCTION

Attention-Deficit/Hyperactivity Disorder (ADHD) is a neurological disorder which affects approximately 6-8% of children (APA, 2000). The primary characteristics include reduced attention, increased impulsivity and increased hyperactivity (APA, 2000). These deficits have been shown to significantly impact the "efficiency and fluency" of speech for both children and adults with ADHD (Engelhardt, et al., in press).

A growing body of literature has explored the possible link between stuttering and ADHD. Biederman and colleagues (1993) conducted structured self-report interviews pertaining to a variety of academic, medical and psychological concerns with 84 adults with a clinical diagnosis of ADHD. Results revealed that 18% of the adults with ADHD reported a significant history of stuttering.

Alm and Risberg (2007) administered *The Wender Utah Rating Scale,* a 25-item self-report questionnaire for the retrospective assessment of ADHD symptoms, to 32 adults who stutter and 28 nonstuttering controls. Results revealed significant group differences with adults who stutter reporting significantly higher ratings of ADHD-like traits during childhood.

Prevalence estimates for ADHD among children who stutter range from 4% to 26% (Healey & Reid, 2003). Riley & Riley (2000) evaluated 50 school-aged children who stutter using their Revised Components Model. The findings revealed that 26% of their sample presented with an Attending Disorder which, from the authors' description, is comprised of high impulsivity, poor attention and hyperactivity consistent with ADHD. Interestingly, an earlier work by the same group suggested that the presence of an Attending Disorder prior to therapy significantly decreased the likelihood of successful therapy outcomes (Riley & Riley, 1979). Additionally, it was shown that clinicians could increase therapeutic outcomes by addressing the attending issues prior to the initiation of speech modification therapy (Riley & Riley, 1979).

PURPOSE

The aim of this study was to explore whether children who stutter present with high levels of ADHD-like symptoms.

METHOD

Participants:
36 school-age CWS (32 boys and 4 girls) between the ages of 5.0 and 17.2 years (M=10.4, SD=3.9). 18 CWS were recruited from a community based speech clinic focusing on the treatment of stuttering and 18 CWS were drawn from a stuttering clinic within a pediatric hospital setting. Independent samples t-tests were employed to evaluate possible differences on stuttering severity, age, family history of stuttering, and history of neurological insult. No significant differences were found. All participants were native English speakers who were diagnosed with at least mild stuttering on the SSI-3 by a board recognized specialist in fluency disorders.

Procedure:
Parent responses on the *ADHD Rating Scale* (Power et al., 2001) were collected via a retrospective chart review for 36 CWS. This tool was used as part of a stuttering assessment battery to identify CWS who present with high levels of either impulsivity and hyperactivity or inattention. A parental endorsement of 2 or more hyperactive/impulsive items and/or 2 or more inattentive items reflects the referral criterion for a psychological evaluation.

Independent samples t-tests were employed to evaluate possible differences on stuttering severity, age, family history of stuttering, and history of neurological insult between participants meeting the referral criterion and those not meeting the referral

RESULTS

This study explored whether CWS present with high levels of ADHD-like symptoms as reported on the ADHD Rating Scale - Parent Version. Results indicated that 58.3% of the sample reached the referral criterion for ADHD. Group means are presented in Figure 1.

No significant differences were found between participants meeting the referral criterion and those not meeting the referral criterion on stuttering severity, age, family history of stuttering, and history of neurological insult with p-values ranging from .07 to .61.

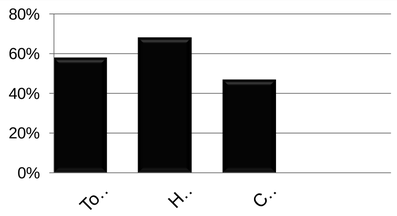

Figure 1. Percentage of participants meeting the referral criteria for ADHD.

RESULTS

The referral criterion for Impulsivity/Hyperactivity was reached by 14% of the sample and 19% of the sample reached criterion for Inattention. The referral criterion for both Impulsivity/Hyperactivity and Inattention was reached by 17% of the sample and 8% presented with a combination of Impulsivity/Hyperactivity and Inattention items (Figure 2).

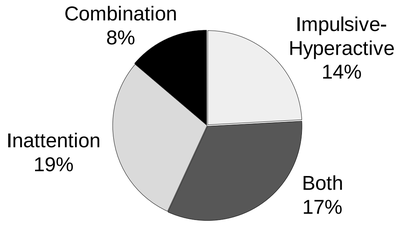

Figure 2. The distribution of ADHD types for those participants meeting the referral criteria .

DISCUSION

The findings are consistent with the literature suggesting that CWS present with high levels of ADHD-like traits by parent report. However, it is unlikely that all CWS who met the referral criterion will also meet the diagnostic criterion for ADHD. Rather, the current findings suggest that a significant subset of CWS present with at least subclinical levels of inattention, impulsivity and/or hyperactivity.

The results offer a compelling argument for screening attention and impulsivity levels in an assessment battery for CWS. Clinicians should be knowledgeable on strategies aimed at increasing attention/focusing within the therapeutic environment when working with CWS.

The results of this study confirm the importance of continuing this line of research. Future studies will need to be multidisciplinary in nature and include both clinical and basic research in an effort to better understand the complex relationship between stuttering and inattention, impulsivity and hyperactivity.

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