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Running Head: Personality Disorders and Stuttering

Personality dysfunction in adults who stutter: Another look

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Abstract: Purpose: Given reports of the frequent occurrence of personality disorders (PD) among individuals who stutter, this investigation was designed to determine the presence of personality disorders (PD) for individuals seeking treatment for stuttering, using a different self-report measure.

Method: The sample included 50 adults who were undergoing treatment for stuttering. The participants also completed a self-report measure (Assessment of the DSM-IV Personality Disorders, ADP-IV) that is known to have good differential validity in the assessment of personality disorders as well as good convergent validity with a structured interview administered by a skilled mental health professional.

Results: Four participants met threshold values for one personality disorder (PD) and one participant met criteria for two personality disorders. The remaining 45 participants (90%) did not meet criteria for a PD.

Conclusion: Rates of observed PDs in this sample approximated rates that have been observed in general community samples using structured clinical interviews and trained interviewers. Related reports which have claimed high levels of personality disorders among adults who stutter appear to be inflated by the use of self-report devices that overestimate the occurrence and co-morbidity of these conditions. Implications for the treatment of adults who stutter are discussed.

Keywords: Key words: stuttering; adults; personality disorder

I. Personality traits of those who stutter

Through the first several decades of the 20th century, it was common to view stuttering as a form of psychopathology, a symptom of a repressed, neurotic, unconscious conflict (Bloodstein & Bernstein-Ratner, 2008; Silverman, 2004). More recent research suggests that the etiology of stuttering is influenced by a combination of genetic and neurophysiological factors that affect the production of language and speech. (e.g., Cykowski et al., 2010; Dworzynski et al., 2007; Kang, et al. 2010; Watkins, Smith, Davis, and Howell, 2007). These two perspectives have attracted considerable attention in the literature, with important implications for both speech therapists and mental health professionals who work with people who stutter. Although the issue of personality traits associated with stuttering has been long-debated (Bloodstein & Bernstein-Ratner, 2008; Goodstein, 1958; Sermas & Cox, 1982), this issue continues to spark lively debate in the literature. In this article, we will present data focusing on the presence of personality disorders among individuals who are seeking speech therapy for stuttering. Our aim with this work is to provide another look at the presence of personality dysfunction among persons who stutter and to highlight the role one's choice of assessment instrument has on understanding this important issue.

1.1. The possibility of personality dysfunction

Within the research on individuals who stutter, there are two perspectives concerning the relationship of stuttering and personality. One perspective argues that personality disturbance result from social exclusion and taunting during childhood, interpersonal processes that have been shown to be associated with stuttering in young children and adolescents (e.g., Blood & Blood, 2007; Blood et al., 2011; Langevin et al., 1998). This perspective suggests that

individuals who stutter are plagued by a variety of personality problems, as exemplified in research by Iverach and colleagues (2009a). In a sample of 92 individuals who were seeking treatment for stuttering, Iverach et al. noted that 64.1% met criteria for at least one personality disorder (PD), representing an almost threefold increased odds, relative to an age- and gender-matched control sample. Remarkably, 43.44% of the 92 individuals met the criteria for two or more personality disorders. The most frequently identified personality disorders in the sample were Anxious PD (28.26%, $n = 26$), Paranoid PD (26.09%, $n = 24$), and Impulsive PD (27.17%, $n = 25$).

The findings of Iverach et al. (2009a) have serious implications, in light of current conceptualizations of personality dysfunction. By definition, a Personality Disorder is defined as, “an enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual’s culture, is pervasive and inflexible, has an onset in adolescence or early adulthood, is stable over time, and *leads to distress or impairment*” (italics added) (American Psychiatric Association, 2000, p. 685). Specific examples of PDs noted within samples of people who stutter include Anxious PD (characterized by social avoidance, hypersensitivity to potential criticism), Paranoid PD (characterized by a pervasive distrust of others and suspicion that others are deceiving or using them), and Impulsive PD (characterized by taking extreme chances and doing reckless things), Iverach et al. (2009a) used a first-stage self-report screening device, the *International Personality Disorder Examination Questionnaire* (IDPEQ, Loranger, Janca, & Sartorius, 1997), which could have affected the obtained results (as will be discussed below). The authors concluded that individuals who stutter have significantly greater odds of having many forms of personality disorders and argue for the assessment and treatment of personality disorders among this population.

In a related study, Iverach et al. (2010) noted that a sample of 93 adults selected from waiting lists at university-related clinics in Australia scored within the average range for all five factors of the Five Factor Inventory (NEO-FFI, Costa & McCrae, 1992) which include Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness. Despite being within the normal range, Iverach et al (2010) noted that the mean scores for those seeking treatment for stuttering were significantly higher for Neuroticism and significantly lower for Agreeableness and Conscientiousness than normative samples from Australia and the United States. The authors interpret these findings as reflective of the interpersonal difficulties that persons who stutter experience, owing to speech dysfluency.

1.2. *Anxiety as natural reaction to stuttering*

A second perspective asserts that anxiety, depression and fear of negative evaluation experienced by individuals who stutter is secondary to stuttering and the result of having to cope with a serious communication problem (e. g., Blumgart et al., 2010; Plexico, Manning & Levitt, 2009; Craig & Tran, 2006; Guitar, 2006; Van Riper, 1982). As Guitar (2006, p. 62) states "...the experience of stuttering generates emotions, such as frustration, fear and anger in everyone who stutters." This perspective is noted within the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR)*, as stuttering is mentioned as a condition which may cause excessive social anxiety but is conceptualized as reactive to this medical condition (Anxiety Disorder Not Otherwise Specified).

Research supporting the second perspective has shown that there is inconsistent evidence to indicate that individuals who stutter possess a particular set of personality traits and, in fact, there is great overlap between groups of people who stutter and those who do not in terms of adjustment and emotional health (Bloodstein & Bernstein-Ratner 2008; Miller & Watson, 1992;

Van Riper, 1982). For example, Iverach et al. (2009b) studied the impact of anxiety disorders, depression, and personality disorders on the outcome of speech therapy, using a sample of 64 adults who stuttered. Mental health conditions were determined by the Computerized Version of the Composite International Diagnostic Interview (CIDI-Auto-2.1, World Health Organization, 1997) and the IPDEQ described previously. Regression analyses indicated that having an anxiety disorder was associated with greater self-rated avoidance of speaking situations after treatment and at a 6-month follow-up. However, mood, anxiety, and personality disorders were not associated with other outcome dimensions of speech therapy (e.g., percentage of syllables stuttered, self-rated stuttering severity) immediately following therapy or at follow-up, suggesting that personality dysfunction does not influence the course of treatment for fluency disorders.

In essence, the field has struggled for some time with the issue of whether stuttering is associated with notable personality dysfunction. Two distinct literatures have emerged; one suggesting that personality disorders (long-standing interpersonal difficulties that are markedly outside of social norms and create distress and interference for the individual) are unfortunately common among persons who stutter. The second literature suggests that personality dysfunction is not a notable feature of stuttering but rather, occurs with the same frequency as noted among persons without speech dysfluency. Psychological issues, when noted among persons who stutter, are likely to be a consequence of speech dysfluency and to focus on excessive anxiety, particularly social evaluative fears and concerns. In some respects, measurement issues make resolution of this conundrum difficult.

1.3. Diagnosing personality dysfunction

When considering personality diagnosis, it is preferable to rely on a structured interview, administered by a skilled mental health professional who is familiar with differential diagnosis, as there are instances where other mental health conditions can be confused with Personality Disorders (e.g., Oltmanns & Carlson, 2013). Personality disorders are differentiated from personality traits, in that personality traits are found in everyone, are not maladaptive, do not cause distress, and do not interfere with successful functioning at home, work, and/or school. Clinician-administered structured interviews require considerable resources however, which are not always available. An alternative is to rely on a self-report measure which has been validated against a clinician-administered structured interview for the assessment of PDs. In considering the literature on personality and stuttering, it is salient to note that an array of self-report measures has been utilized. For example, the self-report measure (IDPEQ) used by Iverach et al. (2009a) is designed as a first-stage screening device for personality disorders. Concern has been raised that this measure results in a high rate of false positives (e.g., Loranger et al., 1997; Lewin et al., 2005). This concern is highlighted by the fact that Iverach and her colleagues noted a 38.15% rate of Personality Disorders among their control sample. Epidemiologists consistently estimate PDs to occur in the range of 10-15% of the general population (Schotte et al., 2004), rates that are generally supported by community studies that rely on structured clinical interviews (Coid, et al., 2006). In addition to over-identification of PDs, some instruments also tend to result in excessive rates of co-morbidity (identification of two or more PDs, Schotte, et al. 1998). As such, it is clear that the choice of self-report measure to assess PDs is an important factor in this line of research.

In response to these concerns, Schotte and DeDoncker (1994; 1996) developed the Assessment of the DSM-IV Personality Disorders (ADP-IV). This self-report questionnaire has

been shown to have good validity in the assessment of personality disorders. The questionnaire provides for both categorical and dimensional assessment of the 10 categories of DSM-IV personality disorders. The unique structure of the ADP-IV provides several advantages over other self-report measures. Trait characteristics associated with personality disorders are self-indicated using a seven-point scale (“totally disagree”—“fully agree”) and the distress resulting from the individual’s traits are indicated using a three-point distress scale (“not at all”—“definitely”). The dimensional assessment is determined by summing the Trait scores for each of the 10 personality disorders. When using the ADP-IV, categorical assessment is obtained by combining the Trait and Distress scores using scoring algorithms, which map onto DSM-IV thresholds. As a result of this procedure, and in contrast to other self-report questionnaires, the ADP-IV results in neither over-diagnosis nor the typical high co-morbidity among PD categories (Loranger, 1992; Perry, 1992; Clark et al., 1997; Bronisch & Mombour, 1998 & Schotte, et al., 2004). Moreover, the ADP-IV can differentiate between members of the general population and psychiatric inpatients (Schotte et al., 2004) and the scale has been compared with a clinician-administered interview with good results. Schotte et al. (2004) examined convergent validity by comparing the results of the ADP-IV with the *Structured Clinical Interview for DSM-IV Axis II Personality Disorders, SCID-II* (First et al., 1997). Results indicated a high level of concordance for the two measures in a sample of 59 psychiatric inpatients. Thus, the ADP-IV appears to circumvent some of the issues raised by other self-report measures of personality dysfunction.

The purpose of this investigation is to examine the presence of personality disorders using the ADP-IV within a sample of individuals seeking treatment for stuttering. We hypothesize that individuals who stutter will show levels of personality functioning that will fall

within normative values. Data will be compared with previously-published rates of PDs, in an effort to examine the influence of assessment instrument.

2. Method

2.1. Participants

Fifty participants were included in this report. The majority were male ($n = 33$, 66%); the sample ranged in age from 18 to 71, with an average age of 33.0 (SD 13.7). All participants were native English speakers; 49 participants indicated no history of other speech or language problems, while one indicated a language-learning disability. All participants were currently engaged in treatment for developmental stuttering at one of eight clinics in the United States and England. Table 1 provides information on the participants' education, employment, number of other individuals in the participant's household, as well as scores on several stuttering-specific measures including the Overall Assessment of the Speaker's Experience of Stuttering, the Stuttering Severity Instrument, and percent syllables stuttering (%SS) scores.

2.2. Measures

2.2.1. Sample descriptive measures

The *Overall Assessment of the Speaker's Experience of Stuttering* (OASES, Yaruss and Quesal, 2008) was used to assess the adverse impact of stuttering. The 100 item OASES provides an indication of the speaker's perception of impairment, the reactions to the impact of stuttering on the individual's functional communication in daily situations and the individual's quality of life. The OASES items are scored on a Likert scale ranging from 1 to 5 with higher scores indicating greater negative impact associated with stuttering. Test-retest reliability with 14 adults indicated excellent reliability ($r = 0.90$ to 0.97). Cronbach's alpha coefficient,

calculated independently for each of the four sections of the instrument, revealed strong internal reliability (α ranged from 0.92 to 0.97). In this report, the total OASES score was used and categorized according to guidelines provided by Yaruss and Quesal (2008).

2.2.2 *Speech sample*

A conversational speech sample consisting of a minimum of 300 words was obtained by a clinically certified speech language pathologist. The sample was video-recorded, to permit scoring (*Computerized Scoring of Stuttering Severity* (CSSS-2.0, Bakker & Riley, 2009) by the first author for percent syllables stuttered (%SS). A trained doctoral student also coded %SS for 20 participants to determine reliability of coding. Intra- judge agreement by the first author of $r = 0.98$ and inter-judge agreement of the first author and the doctoral student of $r = 0.92$ indicated good reliability. This metric was then incorporated with the *Stuttering Severity Instrument* (SSI-3, Riley, 1994) in order to provide an estimate of stuttering severity. The SSI-3 total score is obtained by tabulating the percentage of syllables stuttered, the duration of the three longest stuttering events and the occurrence of “physical concomitants” resulting in an overall score in percentiles and severity equivalents. Videos of conversational speech samples were not available for three individuals owing to technical problems and so, it was not possible to tabulate %SS and SSI-3 values for these participants. However, because identification of personality dysfunction was the focus of the investigation rather than the frequency of stuttering, it was decided to include these three participants.

2.3. *Assessment of Personality Disorders*

The *Assessment of DSM-IV Personality Disorders* (ADP-IV; Schotte & De Doncker, 1994) is a 94-item self-report questionnaire, specifically designed to provide both dimensional and categorical measurement of the DSM-IV personality disorders. Trait characteristics

associated with personality disorders are self-indicated using a seven-point scale (“totally disagree”—“fully agree”) and the distress resulting from the individual’s traits are indicated using a three-point distress scale (“not at all”—“definitely”). The ADP-IV can be scored to reflect the 10 DSM-IV PDs (paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidance, dependent, and obsessive-compulsive). The scale was originally presented in Dutch and has been translated into English by its authors. Evidence for the psychometric properties of the ADP-IV is sound. For example, Doering et al. (2007) administered the ADP-IV and the SCID-II to 400 psychotherapy outpatients and a community sample of 385 persons. These authors report that the ADP-IV had satisfactory reliability with a median Cronbach alpha across the 10 subscales of 0.76 and median retest reliability of 0.79. In this report, good concurrent validity was also found between the dimensional ADP-IV subscale scores with the SCID-II and expert consensus ratings.

2.4. Procedure

Following provision of informed consent, participants provided a speech sample and then completed the OASES and the ADP-IV. Each participant was debriefed at the end of participation. All procedures received IRB approval and were identical across the eight research sites.

3. Results

Using the algorithm recommended by Schotte et al. (2004, Trait >5 & Distress >1), the ADP-IV was scored for each of the 10 Personality Disorders identified in the DSM-IV. As noted in Table 2, four participants met threshold for one Personality Disorder, while one additional participant met criteria for two PDs. The remaining 45 participants (90% of the sample) did not meet criteria for a PD. Data from Iverach et al. (2009) are included in Table 2, to facilitate

comparison. As noted, 59 participants (64.13%) met threshold for one or more PDs, using the IPDEQ in Iverach et al.'s sample.

We compared rates of specific PDs within the current sample to those reported by Iverach et al. (2009), as shown in Table 3. It is important to note that the ADP-IV assesses the DSM-defined personality disorders, while the IPDEQ assesses personality disorders based on the International Classification of Diseases (ICD-10, World Health Organization, 1993). As seen, Schizoid, Borderline, Avoidant, and Obsessive-Compulsive PDs were the only PDs that were observed in the current sample, with Borderline PD being the most frequent. Examination of potential gender differences was not possible due to these small sample sizes. Within Iverach's et al.'s data, Obsessive-Compulsive PD was the most frequently-noted PD, although over 25% of the sample was noted to report Paranoid PD, Impulsive PD (a subtype of Borderline PD), and Anxious PD (similar to Avoidant PD in the DSM-IV.)

4. Discussion

The purpose of this investigation was to provide another look at the prevalence of Personality Disorders among individuals seeking treatment for stuttering, using a self-report measure that has demonstrated good convergent and discriminant validity. The results indicated that a total of five (10%) of the 50 participants were identified as having at least one personality disorder, a percentage that falls at the low end of the range (10-15%) of individuals in the community population with a personality disorder (Coid et al., 2006; Schotte et al., 2004). In addition, one participant (2%) of the 50 participants had two PDs. The present findings are in contrast to those of Iverach et al. (2009a) which indicate that 64.13% of Australian adults who

stutter met criteria for at least one personality disorder with 43.44% of the sample meeting criteria for two or more personality disorders.

The differences in the results of the current investigation and the Iverach et al. (2009a, b; 2010) studies are likely the result of the self-report PD measures that were used. As noted, the ADP-IV considers both specific traits and the extent of an individual's distress and impairment resulting from these traits, an essential aspect of the definition of a Personality Disorder in DSM-IV. As a result, the ADP-IV represents a more conservative self-report assessment approach to identifying PDs, relative to a number of other personality measures. Recognizing that measures may be devised for different purposes, it is salient to note that the IPDEQ was originally developed as a first-tier screening questionnaire (Lenzenweger, Loranger, Korfine, & Neff, 1997). Like most screening measures, this instrument is intended to detect the possibility of a PD, which should be followed by a comprehensive structured clinical interview. As such, screening questionnaires often over-estimate PDs, with the rationale that the subsequent clinical interview will be used to determine actual diagnostic status. The differing assessment devices are likely one of the reasons for the large differences in percentage of PDs noted in the current sample and Iverach et al.'s studies.

In considering the current study, it is notable that the presence of PDs among individuals who stutter had not been seriously considered until Iverach et al.'s 2009 publications. The findings from this research group have profound implications for the treatment protocols intended for those who stutter. Because Personality Disorders are long-standing and pervasive, they tend to persist across time (e.g., Warner, Morey, Finch, Gunderson, Skodol, Sanislow, et al., 2004) and are difficult to treat. With the exception of Borderline Personality Disorder (e.g., Linehan, 1993), effective psychosocial treatments have not emerged for most personality

disorders. As such, speculating that high levels of PDs are noted among persons who stutter presents a bleak picture with respect to their likely psychological dysfunction and its treatment. In other words, the diagnosis of a PD is not a small issue within the mental health environment, particularly given the high level of interpersonal dysfunction noted with these conditions and the relatively poor prospect for effective treatment.

The possibility of elevated levels of PDs for individuals who stutter also has notable implications for how those who stutter are perceived by the general public. Considering the likelihood of personality dysfunction to be common among those who stutter adds to the already common and misinformed view that those who stutter have serious psychological problems, as has often been portrayed in books and movies (e.g., Johnson, 2008; Logan et al. 2008). Mislabeling individuals who stutter with one or more PDs unnecessarily adds to this stigma and contributes to social distancing and rejection from others, reduced educational and vocational opportunities, shame and low self-esteem (e.g., Hinshaw, 2007; Hinshaw & Stier 2008; Link, et al. 2001; Sartorius, 1998). As such, determination of the actual prevalence of PDs among persons who stutter has notable clinical and societal implications.

It is common knowledge within the profession that children and adults who stutter can benefit from counseling as part of their program of therapy (e.g., Guitar, 2006; DiLollo & Manning, 2007; Yaruss, Coleman, and Quesal., 2012). Learning alternative responses and desensitization to the high levels of anxiety that may accompany stuttering can be a critical part of speech therapy. It is important to appreciate, however, that such counseling is designed to help speakers cope with the emotional effects of a serious communication problem (Gregory, 1995; Luterman, 2001) and not to address serious personality dysfunction. In considering this issue, it is important to note that the delivery of counseling is a problem in some parts of the world,

particularly if funding by third party payers is limited. Iverach et al. (2011) point out that “in countries such as Australia, government rebates for mental health treatment are only available for people with a *mental health diagnosis* (italics added). This poses a significant limitation for stuttering adults who cannot receive funded treatment without an appropriate diagnosis.” (p. 230). Because anxiety secondary to a medical condition such as stuttering can be appropriately conceptualized as Anxiety Disorder Not Otherwise Specified within the DSM-IV-TR, it is unclear what added advantage the addition of one or more PDs may confer in seeking government support for counseling among individuals who stutter.

In considering the current study, several limitations should be recognized. First, the sample size is relatively small and does not allow determination of prevalence rates. Ideally, future work can continue to collect information concerning PDs among persons who stutter, with careful attention to the choice of assessment instrument. Second, we were unable to include a structured clinical interview assessment of PDs, owing to the inclusion of eight separate data collection sites. This methodological addition clearly represents an important next step in this developing literature, albeit a step which requires considerable resources. Third, it is possible that the rates of PD noted in the current report were somehow influenced by the choice of a treatment-seeking sample. Ideally, inclusion of both community and treatment-seeking samples is prudent, when considering mental health functioning among individuals with speech dysfluency. Lastly, as noted in Table 3, the current report utilized the categorization of PDs provided by DMS-IV, while Iverach et al. (2009a) relied on the ICD-10 categorization (World Health Organization, 1993). Although these two classification systems are similar, they are not identical, resulting in some non-overlap between these two studies.

4.1. Conclusion

The current report suggests that the presence of personality disorders is not notable among a sample of persons who stutter and who are seeking speech therapy. Ten percent ($n = 5$) of the sample reported symptoms which could indicate one PD, while an additional participant reported symptoms which could indicate two such disorders. These observed rates of PD suggest that choice of assessment instrument may play an important role in this literature, which has profound implications for how emotional issues are conceptualized among individuals seeking therapy for stuttering. Additional work in this area is needed, with particular attention to deepening our understanding of specific emotional processes that exacerbate the experience of stuttering or impede the effectiveness of treatment. Future research may be best served by focusing on the role of negative affect, specifically anxiety, depression, and frustration, as these influence the lives of persons who stutter. Conceptualization of these negative emotional states as enduring forms of personality dysfunction does not appear warranted based on our results. As such, routine incorporation of time-intensive interventions focused on specific PDs does not seem useful. Instead, a more useful direction for future research appears to be a focus on how emotional processes either facilitate or diminish healthy functioning among people who stutter.

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Bios

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Continuing Education

Personality dysfunction in adults who stutter: Another look

Multiple Choice Questions

1. According to the American Psychiatric Association two key components of a personality disorder (PD) are behaviors that:
 - a. result in distress but do not deviate markedly from the individual's culture
 - b. are pervasive and inflexible and lead to distress or impairment
 - c. are consistent over time but unique for different cultures
 - d. are rarely pervasive and inflexible throughout one's life
 - e. often result in antagonistic or aggressive behavior
2. The advantage of the *Assessment of the DSM-IV Personality Disorders* (ADP-IV) is that it provides:
 - a. identification of a variety of personality disorders associated with stuttering
 - b. a cost-effective and efficient way for administration and scoring
 - c. prevalence figures that are more accurate than clinical interviews
 - d. a way of indicating both behavioral traits and distress associated with PDs
 - e. takes significantly less time to complete than more traditional measures.
3. The ADP-IV is less likely than other self-report measures to over-inflate the presence of personality disorders because:
 - a. it has good convergent validity with a structured interview administered by a skilled mental health professional.
 - b. specific personality traits are mutually exclusive to each type of personality disorder
 - c. the assessment protocol is standardized for all age groups and cultures
 - d. it provides for stringent Criterion-Based scoring criteria for each personality disorder
 - e. responses to the items are less likely to be influenced by social desirability
4. The adults who stutter in the present investigation were found to have personality disorders occurring at a rate:
 - a. similar to recent investigations where PDs have been identified for adults who stutter
 - b. slightly less than the typical population of psychiatric inpatients
 - c. similar to the general/community population of typically fluent speakers
 - d. in the upper range of adolescents who stutter
 - e. similar to adolescents undergoing treatment for anxiety disorders

5. Characterizing individuals who stutter as having personality disorders:
 - a. is not serious as there are effective treatments for most Axis II/personality disorders
 - b. is marginally different than diagnosing individuals who stutter with Axis I social anxiety
 - c. is likely to result in better treatment outcomes for individuals who stutter
 - d. has the potential to improve intervention and increase funding for treatment
 - e. is likely to result in greater stigma, shame and a reduced quality of life

Key for correct responses: 1—B, 2—D, 3—A, 4—C, 5—E

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Educational objectives: The reader will be able to (a) summarize two basic perspectives of how individuals who stutter are influenced by the possibility of personality dysfunction (b) describe the factors that influence the detection of personality dysfunction using self-report procedures, discuss the important (c) theoretical and (d) clinical implications of accurately identifying personality dysfunction for adults who stutter.

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Research Highlights

- !! Recent reports have indicated that a high percentage adults who stutter also present with Axis II Personality Disorders (PD)
- !! A possible explanation for the exceedingly high occurrence of PD for adults who stutter may be the nature of the self-report measures that have been used.
- !! Fifty adults currently undergoing treatment for stuttering completed the ADP-IV, a self-report measure with characteristics that prevent over-identification and comorbidity of personality dysfunction.
- !! Four participants in the current sample met criteria for one personality disorder and one participant met criteria for two personality disorders; 90% did not meet a criteria for any PD.
- !! Rates of observed PDs in the current sample are similar to those in general community samples.

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Table 1
Demographic and related information for the sample of 50 participants [n (%)].

Education Completed

High School	4 (8.0%)
College	29 (58.0%)
Graduate	13 (26.0%)
Not Specified	4 (8.0%)

Employment

Yes	28 (56%)
No	21 (42%)
Not Specified	1 (2%)

Others in Household

0	7 (14%)
1	15 (30%)
2	12 (24%)
3	8 (16%)
4	6 (12%)
5	2 (4%)

OASES

Mild	2 (4%)
Mild-Moderate	16 (32%)
Moderate	15 (30%)
Moderate-Severe	17 (34%)
Severe	

SSI-3 Level*

Very Mild	19 (40.4%)
Mild	12 (25.5%)
Moderate	7 (14.9%)
Severe	7 (14.9%)
Very Severe	2 (4.62%)

% Syllables Stuttered*

<1%	6 (12.8%)
1-2%	8 (17.0%)
2-4%	9 (19.2%)
4-8%	10 (21.3%)
8-12%	5 (10.6%)
12-20%	7 (14.9%)
>20%	2 (4.26%)

*N = 47

Table 2

Frequency and percentage of 50 adults seeking speech therapy for stuttering who met criteria for a personality disorder using the ADP-IV, including comparison with Iverach et al.'s 2009a findings using the IPDEQ.

	Current sample (n = 50)								
Number of personality disorder diagnoses noted on the ADP-IV	1	2	3	4	5	6	7	8	9
N	4	1	0	0	0	0	0	0	0
%	8%	2%	-	-	-	-	-	-	-
	Iverach et al. (2009) (n = 92)								
Number of personality disorder diagnoses noted on the IPDEQ	1	2	3	4	5	6	7	8	9
N	19	11	7	6	8	4	3	0	1
%	20.65%	11.95%	7.60%	6.52%	8.69%	4.34%	3.26%	-	1.08%

Note: ADP-IV = Assessment of the DSM-IV Personality Disorders, IPDEQ = International Personality Disorder Examination Questionnaire.

Table 3

Frequency and percentage of specific DSM-IV personality disorders in the current sample (n = 50) and Iverach et al. (2009a)

DSM-IV/ICD-10	Current Study (n = 50)		Iverach et al. (2009a) (n = 92)	
	n	%	n	%
Cluster A				
Paranoid PD	0	-	24	26.1%
Schizoid PD	1	2%	21	22.8%
Schizotypal PD	0	-	Not reported	
Cluster B				
Antisocial PD/Dissocial PD	0	-	5	5.4%
Borderline PD	3	6%		
Impulsive PD			25	27.2%
Borderline PD			16	17.4%
Histrionic PD	0	-	16	17.4%
Narcissistic PD	0	-	Not reported	
Cluster C				
Avoidance PD/Anxious PD	1	2%	26	28.3%
Dependent PD	0	-	9	9.8%
Obsessive-Compulsive PD/Anakastic PD	1	2%	38	41.3%

Note: DSM = Diagnostic and Statistical Manual, ICD = International Classification of Diseases, PD = Personality Disorder.