The role of psychological processes in estimates of stuttering severity

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A B S T R A C T

Purpose: To examine the associations of trait anxiety (STAI), social anxiety (SIAS), depression (BDI-II), and personality features (ADP-IV) with three measures of stuttering severity: %SS, Stuttering Severity, Instrument, and the Overall Assessment of the Speaker’s Experience of Stuttering.

Method: Fifty adults with a history of stuttering served as participants. Participant scores on trait, anxiety, social anxiety, depression, and personality features were entered into a regression analysis, with the criterion variables (DVs) being: %SS, SSI-3, OASES total score. In order to explore the OASES, further, each of the four OASES subscales were also examined. A separate regression was conducted for each dependent variable.

Results: The OASES total score model was significant (p < .0001) and revealed that social anxiety and, trait anxiety were the only significant predictors, with medium effect sizes noted for both variables. In contrast, percent syllables stuttered and the SSI were not significantly associated with psychological variables, suggesting that anxiety may not always be related to overt indicators of stuttering. Depression and personality dysfunction were not significantly associated with any measure of stuttering severity.

Conclusion: Anxiety in the form of social and trait anxiety are significantly associated with stuttering, severity as indicated by the OASES. Traditional procedures for assigning severity ratings to individuals, who stutter based on percent syllables stuttered and the Stuttering Severity Instrument are not, significantly related to psychological processes central to the stuttering experience. Depression and, personality characteristics do not meaningfully account for stuttering.

Educational objectives: The reader will be able to: (a) differentiate forms of anxiety that are likely to be associated with stuttering (b) understand the importance of determining features of stuttering that go beyond the obvious, surface characteristics of stuttering frequency, and (c) discuss the important clinical and theoretical implications for understanding the degree of psychological dysfunction that is likely to be characteristic of those who stutter.

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1. Introduction

The purpose of this investigation, as it was for a companion study (Manning & Beck, 2013), was to take another look at the role of psychological factors among adults who stutter. Recently, Iverach and colleagues (2009a) (see below for

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details) reported extraordinarily high levels of Axis II personality dysfunction in a sample of 92 adults who were seeking treatment for stuttering. In light of studies examining both anxiety and depression among individuals who stutter, the present investigation is designed to compare the associations of anxiety, depression, and personality dysfunction with stuttering severity. Because stuttering has been recognized as a multidimensional construct (e.g., Conture, 2001; Riley & Riley, 1984, Smith & Kelly, 1997), three separate measures of stuttering were examined (percent syllables stuttered, Stuttering Severity Instrument, and Overall Assessment of the Speaker’s Experience of Stuttering).

For many years, it has been apparent to researchers in the field of fluency disorders that anxiety is a common characteristic for speakers who stutter. Researchers have repeatedly documented this association using a variety of physiological measures such as heart rate, blood pressure, EEG, and skin conductance response (e.g., Berlinsky, 1955; Bruten, 1963; Fletcher, 1914; Knot, Correll, & Shepherd, 1959; Robbins, 1920; Travis, Tuttle, & Cowan, 1936) and self-report measures such as the Endler Multidimensional Scales (e.g., Messenger, Onslow, Packman, & Menzies, 2004), the most often used measure, the State and Trait Anxiety Inventory (e.g., Blood, Blood, Bennett, Simpson, & Sussman, 1994; Blumgart, Tran, & Craig, 2010; Craig, 1990; Craig, Hancock, Tran, & Craig, 2003; Ezrati-Vinacour & Levin, 2004; Miller & Watson, 1992; Mulcahy, Hennessey, Beilby, & Byrnes, 2008), and the Taylor Manifest Anxiety Scale (e.g., Boland, 1953; Kraaimaat, Janssen, & Van Dam-Baggen, 1991).

In considering this literature, investigators have recently begun to recognize that different types of anxiety-related processes may be relevant. For example, Blumgart et al. (2010) used five measures of anxiety including the State and Trait Anxiety Inventory (STAI) and several measures of social anxiety to compare 200 adults who stuttered with 200 adults who were fluent. The STAI assesses general levels of anxiety and tension, captured on a state scale (which assesses current levels of anxiety) and a trait scale (which assesses usual or typical levels of anxiety). In contrast, social anxiety measures focus on an individual’s anxiety in social–evaluative settings. Blumgart et al. found that adults who stuttered had significantly greater levels of state and trait anxiety, as well as social anxiety, with moderate to large effect sizes noted on all anxiety measures. Stuttering severity, as indicated by percent syllables stuttered (PSSS) was unrelated to any anxiety measure. Blumgart et al. (2010) concluded that stuttering influences general anxiety (trait), current anxiety (state), and social anxiety.

In contrast, other investigators found few significant differences in anxiety levels when comparing individuals who stutter with control groups of fluent speakers (e.g., Andrews & Craig, 1988; Andrews & Harris, 1964; Andrews et al., 1983; Hedge, 1972; Cox, Seider, & Kidd, 1984; Craig & Hancock, 1996; Lanyon, Goldsworthy, & Lanyon, 1978; Miller & Watson, 1992; Molt & Gulford, 1979; Peters & Hulstijn, 1984; Prins, 1972). The following literature highlights several factors that influence the detection of anxiety and other forms of psychological distress in participants who stutter.

1.1. The possibility of depression

Because it is common for anxiety and depression to co-occur (Barlow, 2002; Gurney, Roth, & Garside, 1970; Leckman, Weissman, Merikangus, Pauls, & Prusoff, 1983), depression has also been considered a possible psychological process that may occur with stuttering. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000), depression is characterized by five or more symptoms that are dissimilar to one’s previous functioning (e.g., depressed mood, loss of interest or pleasure, insomnia, loss of energy) during a two-week period. The relatively few investigations of depression for those who stutter have generally yielded equivocal results. While some investigators have reported higher levels of self-reported depressive symptoms for individuals who stutter (Liu et al., 2001; Tran, Blumgart, & Craig, 2011; Yanagawa, 1973), the findings of other studies have failed to support the impression that those who stutter are more depressed than their fluent peers (Bray, Kehle, Lawless, & Theodore, 2003; Miller & Watson, 1992). Miller and Watson studied the relationships among communication attitude, anxiety and depression, with 53 participants who stuttered (mean age: 41; range: 16–68) and a control group of nonstuttering participants (mean age: 41; range: 17–67). Each group contained 38 males and 14 females. The two groups were matched for age, gender, ethnic background, and highest education level. Using a 5-point scale, participants self-rated their severity of stuttering, resulting in very mild to mild: n = 19, moderate: n = 23, severe to very severe: n = 10. The results indicated that communication attitude became more negative as self-rated stuttering severity increased. However, no significant group differences were found for anxiety (State-Trait Anxiety Inventory (STAI) (Spielberger et al., 1983) or depression (Beck Depression Inventory (BDI) (Beck, 1987) in this study. Mean depression scores for both stuttering and nonstuttering groups fell within the normal range of 0–9.

In contrast to the findings of Miller and Watson (1992), a recent investigation by Tran et al. (2011) found that, in comparison to a matched group of non-stuttering controls, adults who stuttered (N = 200) were significantly more likely to report elevated levels of negative mood symptoms including depressive mood. These results are in contrast to earlier research by these authors (Craig & Tran, 2006) and as Tran et al. (2011) suggest, may be due to the factor structure of the self-report Symptom Checklist (Revised, SCL-90-R, Derogatis, 1994) that was used for the stuttering dataset. Given the inconsistency of these results, the relatively few studies of depression, and the extreme levels of anxiety recently reported by Iverach and associates (2009a, 2011) the possibility of elevated levels of depression was considered in the current investigation.

1.2. The extent of personality dysfunction

Research concerning the relationship of anxiety and stuttering has, for the most part, supported the idea that those who stutter are likely to experience elevated levels of anxiety, particularly as it relates to circumstances that require verbal communication. Although the role of depression is at present unclear, recent discussion in the literature has emphasized
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