Psychological Distress and Experiences Typical to Stuttering

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Introduction

Research has shown that, as a group, adults who stutter (AWS) report affective, behavioral and cognitive ("ABC") experiences in response to their speech disorder (Svenning et al., 2021). These maladaptive reactions include negative emotion and speech disruption (stuttering) associated with particular speaking situations, the use of coping behaviors in anticipation of or during the occurrence of stuttering, and negative thoughts and attitudes toward speaking (Vanryckeghem & Brutten, 2018). Literature examining the presence of psychopathological symptoms in AWS indicates that, at the least, individuals who stutter present with more symptoms of psychological distress, particularly related to negative affect, than adults who do not stutter (AWNS; Iverach et al., 2009; Kraaimaat et al., 2002). However, less is known about the relationship between an AWS' affective, behavioral and cognitive experiences of stuttering and the extent to which they also self-report symptoms of psychological distress and social anxiety.

Participants

A United States based sample of 33 AWS filled out a series of tests via online Qualtrics survey software. 20 were male and 13 were female. Their ages ranged from 18 to 76 with a mean age of 34. In a demographic questionnaire, participants confirmed being diagnosed by a speech-language pathologist (SLP) or Board-Certified Fluency Specialist as a person who stutters (PWS). Exclusionary criteria included the indication of comorbid speech or language disorders other than stuttering, as well as information that would lead the researchers to believe the participants' stuttering was psychogenic or neurogenic in nature.

Purpose

This investigation seeks to shed light on AWS' self-reported affective, behavioral and cognitive experiences of stuttering compared to normative samples and to gauge levels of subjects' psychological distress and social anxiety.

Materials

The **Behavior Assessment Battery** (**BAB**; Vanryckeghem & Brutten, 2018) is a comprehensive collection of self-report tests that assess the multidimensional aspects of stuttering, including affective, behavioral and cognitive components. The battery is comprised of the Speech Situation Checklist (Speech Situation Checklist - Emotional Reaction (SSC-ER) and Speech Situation Checklist - Speech Disruption (SSC-SD), the Communication Attitude Test for Adults Who Stutter (BigCAT) and the Behavior Checklist (BCL).

The **SSC-ER** investigates the presence of *negative emotion* (fear, worry, anxiety) as it relates to particular speaking situations. The **SSC-SD** queries these same scenarios but asks respondents about their level of *speech disruption* (stuttering) in each setting. Both tests utilize a 5-point Likert scale ranging from 1 (not anxious; no speech disruption) to 5 (very anxious; very much speech disruption).

The **BigCAT** investigates the presence of negative *attitude* toward speaking. A series of True/False statements are presented to the respondent for them to indicate what they currently think about their speech. A score of 1 on an item indicates negative thinking, whereas an item answered in a way representing positive cognition is given a 0 score.

The **BCL** queries respondents' use of *coping behaviors*, by asking the respondent if they use a particular coping device when expecting or during the occurrence of stuttered speech. The BCL utilizes a two-point scale: 0 (do not use a particular coping device) or 1 (do use a particular coping behavior).

The BAB gives valuable insight into a person's lived experiences with stuttering, providing a holistic view of the PWS and how the multidimensional disorder might affect one's quality of life (QoL). The BAB's information allows for more accurate differential diagnosis and postulates targets for intervention (Vanryckeghem & Brutten, 2018).

The **Brief Symptom Inventory** (**BSI**–18; Derogatis, 2001) is an 18-item self-report checklist utilized as a screener for symptoms of *psychological distress* and *psychiatric disorders* in community and medical populations. It provides 18 symptom descriptions which are to be rated by respondents along a five-point Likert scale (0 = not at all, 4 = very much) according to how much they have been bothered by the symptom in the past week. It examines three domains of psychopathology: Anxiety (e.g., general nervousness, fear and panic), Depression (e.g., apathy, sadness, suicidal ideation), and Somatization (perception of physical problems; e.g., muscular/stomach pain, cardiovascular problems). Respondents with a Global Severity Index (GSI) total T-score ≥ 63, or a T-score of ≥ 63 on any two of the three symptom scales (Somatization, Depression, and Anxiety), per the test's manual, should be classified as having clinically significant distress (Derogatis, 2001).

The **Social Phobia and Anxiety Inventory** – **23** (**SPAI-23**; Roberson-Nay, et al. 2007) examines the presence and severity of *social-anxiety* and *fear* across a wide range of potentially fear-producing situations and is reliable in discriminating social anxiety disorder (SAD) from other anxiety disorders. Its items pertain to Social Phobia (16 items) and Agoraphobia (7 items). A "Difference Score" is calculated by adding up the total Social Phobia points and subtracting the total Agoraphobia points. A Difference Score of 28 or higher is considered the clinical threshold for possible Social Anxiety Disorder (Schry et al., 2012), with a sensitivity of ~ .96 and a specificity of ~.39 for detecting this diagnosis.

Table 1: Measures of Central Tendency and Variation for BAB Subtests

	BAB Scores for AWS Present Study				BAB Scores for AWNS Normative Data			
	SSC-ER	SSC-SD	BigCAT	BCL	SSC-ER	SSC-SD	BigCAT	BCL
Mean	103.55	103.94	21.52	29.06	53.61	47.49	3.37	3.41
S D	35.50	28.50	8.94	13.96	12.98	10.11	3.39	4.21
Median	100	107	22	30	50.00	45.00	2.00	2.00
Mode	124	107	33	40	38	38.00	1	0
Min.	42	39	0	1	38	38	0	0
Max.	180	153	33	57	92	82	16	18

The mean scores for AWS on all BAB sub-tests were significantly (≥ 2 SD) higher than those of the normative AWNS sample. AWS scored nearly 4 SD above the mean of AWNS on the SSC-ER, 5 ½ SD above the mean on the SSC-SD, just more than 5 SD above the mean on the BigCAT, and just more than 6 SD above the mean for the BCL. When compared to AWS, subjects in this study scored descriptively lower, on average, on the SSC-ER, SSC-SD and BigCAT. They scored descriptively higher than AWS on the BCL.

Table 2: Measures of Central Tendency and Variation for BSI-18 Global Severity Index (GSI) Scores

	GSI T-Scores for AWS Present Study	GSI T-Scores Normative Community Sample
Mean	50.10	50.00
SD	8.13	10.00

Mean BSI-18 GSI scores of the present sample closely approximated that of the standardization sample. AWS in this investigation scored, on average, at the 50th percentile. 12% of AWS in the current sample had GSI T-Scores of ≥ 63, indicating clinically significant levels of psychological distress, compared to 9% of subjects in the community sample.

Table 3: SPAI-23 Measures of Central Tendency and Variation for SPAI-23 Difference Scores for Present Study and Normative Data (Roberson-Nay et al., 2007)

	SPAI-23 Difference Score for AWS Present Study	SPAI-23 Difference Score Nonclinical Sample	SPAI-23 Difference Score Clinical Sample
Mean	24.30	26.99	41.94
SD	13.11	10.61	11.87
Median	25.00	27.00	42.50

Mean scores from the present investigation fell just below those of the non-clinical sample of undergraduate students surveyed by Roberson-Nay et al. (2007), and more than 2 SD below the clinical sample consisting of individuals with generalized or specific SAD. In the current study, 45% of participants obtained a SPAI-23 Difference Score of greater than or equal to 28, falling above Schry and colleagues (2012) clinical threshold that is deemed indicative of possible SAD.

Conclusion

- AWS exhibit, on average, *significantly more* negative emotional reaction and speech breakdown in particular situations, a negative speech-related attitude and use of avoidance and escape behaviors compared to AWNS.
- Compared to the normative data on AWS (Vanryckeghem & Brutten, 2018), participants indicated less negative emotional reaction and speech disruption in various communicative scenarios, as well as a less negative communication attitude. They did, however, report to use more coping behaviors than the average AWS in the normative sample.
- On average, AWS reported levels of psychological distress and well-being that closely resembles that of the general community. This finding is in agreement with investigations showing the presence of psychopathological symptoms in AWS to not significantly deviate from community samples (Manning & Beck, 2013). However, the results are in disagreement with those investigations that show heightened psychopathology in AWS (Iverach et al. 2009; Tran et. al, 2011). Limitations in sample size in the current study are noted and methodological differences related to psychological tests being administered could account for differing results.
- When compared to the normative sample, a descriptively higher proportion of AWS met the clinical threshold for significant levels of psychological distress.
- Nearly half of AWS participants met or exceeded Schry and colleagues' (2012) threshold determination for possible SAD. These levels corroborate other investigations pointing to the high prevalence of social phobia in AWS (Blumgart et al., 2010; Stein et al., 1996). At the least, this would confirm the assumed existence of a sub-group of highly socially anxious AWS (Kraaimaat et al., 2002).

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