

This article was downloaded by: [EBSCOHost EJS Content Distribution]

On: 2 October 2009

Access details: Access Details: [subscription number 911859084]

Publisher Informa Healthcare

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



International Journal of Language & Communication Disorders

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title-content=t713393930>

Unhelpful thoughts and beliefs linked to social anxiety in stuttering: development of a measure

Tamsen St Clare ^{ab}; Ross G. Menzies ^c; Mark Onslow ^c; Ann Packman ^c; Robyn Thompson ^c; Susan Block ^d

^a School of Behavioural and Community Health Sciences, The University of Sydney, Sydney, Australia ^b

Department of Medical Psychology, Westmead Hospital, Sydney, Australia ^c Australian Stuttering Research

Centre, The University of Sydney, Sydney, Australia ^d School of Human Communication Sciences, La Trobe University, Melbourne, Australia

First Published: May 2009

To cite this Article St Clare, Tamsen, Menzies, Ross G., Onslow, Mark, Packman, Ann, Thompson, Robyn and Block, Susan (2009) 'Unhelpful thoughts and beliefs linked to social anxiety in stuttering: development of a measure', *International Journal of Language & Communication Disorders*, 44:3, 338 — 351

To link to this Article: DOI: 10.1080/13682820802067529

URL: <http://dx.doi.org/10.1080/13682820802067529>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Research Report

Unhelpful thoughts and beliefs linked to social anxiety in stuttering: development of a measure

Tamsen St Clare^{†‡}, Ross G. Menzies[§], Mark Onslow[§],
Ann Packman[§], Robyn Thompson[§] and Susan Block[¶]

[†]School of Behavioural and Community Health Sciences, The University of Sydney, Sydney, Australia

[‡]Department of Medical Psychology, Westmead Hospital, Sydney, Australia

[§]Australian Stuttering Research Centre, The University of Sydney, Sydney, Australia

[¶]School of Human Communication Sciences, La Trobe University, Melbourne, Australia

(Received 23 January 2007; accepted 18 March 2008)

Abstract

Background: Those who stutter have a proclivity to social anxiety. Yet, to date, there is no comprehensive measure of thoughts and beliefs about stuttering that represent the cognitions associated with that anxiety.

Aims: The present paper describes the development of a measure to assess unhelpful thoughts and beliefs about stuttering.

Methods & Procedures: The Unhelpful Thoughts and Beliefs about Stuttering (UTBAS) self-report measure contains 66 items that assess the frequency of unhelpful thoughts and beliefs. Items were constructed from a comprehensive file audit of all stuttering cases seen in a cognitive–behavior therapy based treatment programme over a ten-year period.

Outcomes & Results: Preliminary investigations indicate that the UTBAS has high levels of test–retest reliability ($r=0.89$) and internal consistency (Chronbach's $\alpha=0.98$). It has good known-groups validity, being able to discriminate between stuttering and non-stuttering participants on items that contain no reference to stuttering [$t(38)=8.06$, $p<0.0001$], with a large effect size ($d=2.3$). It has good convergent validity ($r=0.53–0.72$) and discriminant validity ($r=0.24–0.27$). The UTBAS sensitivity to change was supported by improvements in thoughts and beliefs related to social anxiety following cognitive–behavioural treatment for anxiety in stuttering [$t(25)=10.13$, $p<0.0001$]. The effect size was large ($d=2.5$).

Address correspondence to: Mark Onslow, Australian Stuttering Research Centre, The University of Sydney, PO Box 170, Lidcombe NSW 1825, Sydney, Australia; e-mail: M.Onslow@usyd.edu.au

Conclusions & Implications: Implications for the use of the UTBAS as an outcome measure and a clinical tool are discussed, along with the potential value of the UTBAS to explore the well-documented social anxiety experienced by those who stutter.

Keywords: Stuttering, social anxiety, measurement, cognitive behaviour therapy.

What this paper adds

It is known that people who stutter commonly experience social anxiety. Yet, to date, there is no comprehensive measure of thoughts and beliefs about stuttering that are linked to social anxiety which can be used in clinical assessment.

This study begins development of a 66-item scale of Unhelpful Thoughts and Beliefs About Stuttering (UTBAS). Preliminary results suggest the scale is stable and reliable, it can discriminate between stuttering and non-stuttering participants on items that contain no reference to stuttering, and has convergent and discriminant validity. Further, the UTBAS is sensitive to improvements in thoughts and beliefs related to social anxiety that follow cognitive-behavioural treatment for anxiety in stuttering.

Introduction

Development of a measure to assess social anxiety in stuttering

Anxiety appears to figure prominently in the disorder of stuttering. Early case history data and clinical observations suggested a connection between stuttering and a personality trait of anxiety (Despert 1943, Meyer 1945, Honig 1947), and the classic texts on stuttering invariably dealt with anxiety (e.g., Johnson 1955, Van Riper 1982, Ingham 1984, Bloodstein 1995, Guitar 2006). These beliefs appear to have affected clinical practices. Nearly all Australian clinicians in one survey reported believing anxiety to be part of the disorder, and the majority of them attempted anxiolytic procedures with adult clients (Lincoln *et al.* 1996). In the case of American clinicians, Yaruss *et al.* (2002) reported that 56% of their sample of clients reported that their treatments involved 'reducing the fear of stuttering or of speaking situations' (p. 120). In the UK, a survey by Hayhow *et al.* (2002) asked those who stutter to nominate treatments that they had found helpful. Of seven specific treatments nominated, two anxiolytic procedures were included: 'Avoidance reduction/facing fear', and 'Relaxation/anxiety control' (p. 8).

A subsequent body of evidence has confirmed a link between stuttering and trait anxiety with a range of self report assessments with adults and adolescents (Peters and Hulstijn 1984, Craig 1990, Mahr and Torosian 1999, Kraaimaat *et al.* 2002, DiLollo *et al.* 2003, Ezrati-Vinacour and Levin 2004, Messenger *et al.* 2004, Treon *et al.* 2006). These findings have been replicated in a large, non-clinic cohort (Craig *et al.* 2003b). Negative findings of such a general relationship appear to be much fewer in number (Molt and Guilford 1979, Janssen and Kraaimaat 1980, Cox *et al.* 1984, Miller and Watson 1992), but nonetheless constitute some ambiguity in this literature. One explanation of such contradictory findings may relate to the reliance in this literature on unidimensional measures of trait anxiety (Menzies *et al.* 1999).

Trait anxiety is currently thought of not as a single construct but being composed of various constructs such as physical and social anxiety and anxiety about novel situations (Endler *et al.* 1976, 1991a, 1991b).

Indeed, in literature that takes account of this issue, when stuttering participants and controls are compared for social anxiety, a far less ambiguous picture appears to be emerging. Schneier *et al.* (1997), using a measure of social anxiety, reported that a group of 22 stuttering participants scored at equivalent levels to those with social phobia. More recently, there has been a report that around half of the scores of social discomfort for 89 stuttering participants were 'within the range of a group of highly socially anxious psychiatric patients' (Kraaimaat *et al.* 2002). Kraaimaat and colleagues have also shown that 110 stuttering participants score significantly higher than controls on a social anxiety scale, albeit significantly lower than participant with social phobia (Kraaimaat *et al.* 1991). Messenger *et al.* (2004) reported that 32 adults who stutter differed from non-stuttering control participants only on measures of social anxiety and not on more general anxiety scales. The work by Maher and Torosian (1999) contained data indicating that 22 stuttering participants scored higher on social anxiety than controls. These findings are supplemented by recurring reports of stuttering being associated with an extreme form of social anxiety: social phobia. There have been case reports of this occurrence (de Carle and Pato 1996, Paprocki and Rocha 1999), and one report of seven of 16 stuttering clients being given a diagnosis of social phobia (Stein *et al.* 1996). In a recent report from the present group (Menzies *et al.* 2007), 18 of 30 stuttering participants were diagnosed with social phobia with a blinded psychological assessment.

Arguably, these findings are not surprising considering the disfiguring effects of stuttering on verbal communication (Poulton and Andrews 1994). Such findings are also consistent with some findings of aberrant listener responses to stuttering. McDonald and Frick (1954) documented subjective, negative listener responses to stuttering, and Rosenberg and Curtis (1954) documented behavioural listener responses to stuttering. An early study documented physiological respiratory listener response to stuttering (Ainsworth 1939), which was recently replicated by Guntupalli *et al.* (2007) with findings of heart rate and skin conductance changes while watching stuttered speech. Additionally, these findings are consistent with two reports that found that the attentional bias of listeners could not be shifted from stuttered speech to the actual content of the speech (Bar 1967, 1969). They are also consistent with the many reports that listeners harbour negative stereotypes of those who stutter (e.g., Turnbaugh *et al.* 1979, Doody *et al.* 1993, Ruscello *et al.* 1994, Lass *et al.* 1995, Dorsey and Guenther 2000, Klassen 2001, Craig *et al.* 2003b).

In short, it appears that those who stutter have a proclivity towards social anxiety, and that in many cases the anxiety may constitute a prominent and disabling feature of their presentation. From a research perspective, it is imperative to further the understanding of the way in which social anxiety is related to stuttering, the impact that it may have on presentation and prognosis, and whether interventions targeting social anxiety adds to the effectiveness of standard speech restructuring treatments (those based on prolonged speech). From a clinical perspective it is important for speech language pathologists (SLPs) to assess for social anxiety, as the presence of social anxiety may interfere with treatment compliance and early detection may impact significantly on treatment planning (O'Brian *et al.*, in press). Both aims are dependent on accurate and comprehensive measurement of the social anxiety construct.

In clinical psychology, anxiety is viewed as a complex construct that consists of three components: cognitive, behavioural, and physiological (Barlow 2002). The cognitive component refers to unhelpful thoughts and beliefs relating to the anxiety-provoking stimulus. In the case of social anxiety, cognitions generally concern the threat of negative evaluation by others; beliefs that others will judge a person negatively for stuttering and that the opinions of others are important (Wells and Clark 1997, Hofman and Barlow 2002). The behavioural component refers to the degree to which an individual avoids or escapes from an anxiety-provoking situation. The physiological component refers to the changes that occur within the body during the anxiety response, such as increased heart rate, blushing and sweating. There is little debate among contemporary anxiety researchers that individuals may differ markedly in the specific signs of their anxiety response (for example, Menzies and Clarke 1995).

Accurate assessment of the cognitive component of social anxiety in stuttering requires the development of a comprehensive measure of cognitions — thoughts and beliefs — that relate directly to stuttering. To date, research into the role of social anxiety in stuttering has relied on measures of social anxiety that were developed to assess social phobia, and that therefore contain no references to stuttering. Social phobia is not necessarily related to speech or communication. Some sufferers of social phobia may, for example, experience anxiety about other people watching them eat, or listening to them playing an instrument, but not experience anxiety about speaking to others. Existing social anxiety assessment measures include items to assess non-speech anxiety, and because of this they may not be particularly sensitive to the speech-related social anxiety that typifies adults who stutter.

The current paper describes the development and initial validation of a measure of unhelpful thoughts and beliefs relating to stuttering. The aims were: (1) to develop a comprehensive measure of cognitions to assess speech-related social anxiety in adults who stutter; (2) to determine whether scores on the measure were higher for a stuttering group than for a non-stuttering control group; (3) to determine the reliability, known-groups validity, convergent validity and discriminant validity of the measure; and (4) to determine the measure's 'sensitivity to change' by exploring whether scores on the measure decrease following treatment with cognitive behaviour therapy, which known to be effective in reducing social anxiety.

Method

Phase 1: Initial development of the measure

The items were developed by recording unhelpful thoughts and beliefs reported by stuttering patients treated with cognitive-behaviour therapy (CBT) for social anxiety. Because CBT involves the identification and modification of unhelpful cognitions, CBT practitioners assess cognitions thoroughly and retain detailed records of the thoughts and beliefs reported by their clients during treatment. Hence, the investigators had access to many thoughts and beliefs reported by stuttering clients who presented to a Sydney anxiety disorders clinic during a ten-year period. The unhelpful thoughts and beliefs were sourced with a retrospective file audit of all clients who stuttered. Seventy-nine thoughts and beliefs were sourced from these client files. The first two investigators independently reduced the scale by eliminating overlapping items. Where there was disagreement about the independence of items, discussion between these two investigators either produced

a consensus view (i.e. agreement) or prompted an item to be discarded. Thirteen items were discarded in this process, leaving 66 items in the final Unhelpful Thoughts and Beliefs About Stuttering (UTBAS) scale. Thirty-nine of the 66 UTBAS scale items (59%) contain no reference to stuttering (items 8, 9, 13, 16–18, 20–24, 27–29, 31, 33, 35–37, 41–44, 46–60, and 63). The UTBAS scale is presented in the appendix. Each item is rated on a five-point Likert scale according to the frequency with which that thought is experienced (1='never have the thought' and 5='always have the thought'). Possible scores are in the range of 66 to 330.

Phase 2: Construct validity and sensitivity of the UTBAS

Fifty-seven participants took part in Phase 2 of this research. Phase 2 was designed to compare UTBAS scores between PWS and non-stuttering controls, and to assess the sensitivity of the measure to clinical improvements associated with CBT for social anxiety. The control group comprised 31 non-stuttering volunteers (16 men and 15 women) recruited from general staff at The University of Sydney, Australia. The average age of the control participants was 29.5 years (standard deviation (SD)=10.9, range=19–56 years). The stuttering group comprised 26 adult stuttering participants (21 men and five women) taking part in a randomized controlled trial at La Trobe University, Melbourne, Australia. The average age of the stuttering participants was 27.0 years (SD=14.5, range=16–65). The purpose of that trial was to compare the efficacy of speech restructuring treatment alone and speech restructuring treatment plus CBT for social anxiety in alleviating stuttering and speech-related anxiety. Each of the participants in the present study had been randomly assigned to the CBT condition. Exclusion criteria for the CBT trial were: (1) CBT received during the previous six months, (2) intellectual disability, (3) stuttering at less than 2% syllables stuttered during baseline testing, and (4) current use of benzodiazapines. Inclusion criteria for the trial were: (1) 16 years or older, (2) proficiency in English, and (3) psychotropic medication was kept at a stable dose throughout the duration of the trial. Control participants met these inclusion and exclusion criteria also.

Phase 3: Reliability of the UTBAS

Phase 3 of the research was designed to establish the test–retest reliability and internal consistency of the UTBAS. A convenience sample comprising 18 adult stuttering participants (15 men and three women) who were clients of the Australian Stuttering Research Centre was used. All but two had completed treatment programmes for stuttering in the past. Completion of treatment, prior to taking part in the present research, ranged from nine months to 30 years previously. Eight participants were currently on a waitlist for further treatment. Others were taking part in maintenance programmes. The average age of the group was 39.7 years (SD=14.4, range=21–61 years).

Phase 2 procedure

Stuttering participants completed a battery of questionnaires (see below) on two occasions: prior to receiving CBT and immediately after completing CBT. Both

questionnaire batteries were administered prior to the participants receiving any prolonged speech treatment. The CBT was presented in an intensive, group format over five days. The CBT package was developed specifically for adults who stutter (McColl *et al.* 2001), and was focused on speech-related social anxiety. The CBT was administered by the first and second authors, both of whom have a minimum of seven years experience in cognitive-behavioural treatment of anxiety. In summary, the CBT treatment package adapted for stuttering clients incorporates procedures from the four usual domains of CBT. Cognitive Restructuring, as described for social phobia by Mattick *et al.* (1989), is a procedure where clients are trained to systematically identify and modify their irrational thoughts related to anxiety. Graded Exposure, described for social phobia by Mattick *et al.* (1989), requires clients to gradually and progressively confront anxiety-provoking situations, and to repeat that exposure until anxiety decreases to levels that are not regarded as excessively distressing. Behavioral Experiments, as described by Butler (1996), are conducted in conjunction with graded exposure. Predicted negative outcomes are compared with actual outcomes of the exposure exercises. Finally, Attention Training, as described by Clarke and Wardman (1985), involves a focusing task intended to reduce the frequency of threat-related intrusive thoughts by increasing capacity to attend to alternative cognitive targets during a rhythmic breathing exercise.

Phase 2 measures

The test battery completed by participants included the UTBAS scale (see above and Appendix), and the following tests. The Social Phobia Anxiety Inventory (SPAI) (Turner *et al.* 1996) is a comprehensive and widely used measure of social anxiety. Both reliability and validity appear to be excellent (e.g., Ries *et al.* 1998, Peters 2000). The SPAI yields a total score and a difference score, which controls for the presence of agoraphobia symptoms. The difference score was used in our analyses, as it is generally considered a more pure measure of social anxiety. The Fear of Negative Evaluation Scale (FNE) (Watson and Friend 1969) is a 30-item, self-report questionnaire that assesses the extent of concerns about scrutiny and evaluation in social encounters. It is widely used in the assessment of social anxiety, and its psychometric properties are well established (e.g., Oei *et al.* 1991). The Social Avoidance and Distress Scale (SADS) (Watson and Friend 1969) is a 28-item questionnaire designed to assess self-reported avoidance of, and distress associated with, social encounters. It is considered to have adequate psychometric properties (e.g., Ries *et al.* 2001), and is amongst the most commonly used outcome measures for social anxiety. The Beck Anxiety Inventory (BAI) (Beck *et al.* 1988) is a popular measure of general anxiety symptoms. It has several factors; subjective, neurophysiological, panic, and autonomic symptoms. Psychometric studies generally support the factor structure, reliability and validity of this instrument (e.g., Osman *et al.* 1993, Steer *et al.* 1993). The Beck Depression Inventory-II (BDI-II) (Beck 1996) is a widely used measure of depressive symptomatology. It is a 21-item, self-report questionnaire designed to measure the frequency of depressive symptoms. The reliability and validity of the BDI-II are well established (e.g., Osman *et al.* 1997, Dozois *et al.* 1998).

Phase 2 data analysis

Known-groups validity was assessed with a *t*-test to compare scores obtained by the non-stuttering control group on the 39 non-stuttering related UTBAS items with pre-treatment scores obtained on the same 39 items by the stuttering group. Within the stuttering group, pre-treatment UTBAS scores were correlated with pre-treatment scores on the other scales to determine convergent and discriminant validity of the UTBAS. Convergent validity was assessed by measuring the correlations between the UTBAS and other measures of social anxiety. Discriminant validity was assessed by determining whether the correlations between the UTBAS and social anxiety measures were significantly greater than correlations between the UTBAS and measures of unrelated constructs, such as depression. Pre-treatment UTBAS scores were compared with post-treatment UTBAS scores in the stuttering group to determine the sensitivity to change of the UTBAS following CBT, a treatment known to reduce social anxiety successfully.

Phase 3 procedure

The UTBAS was completed by participants on two occasions, one month apart. The instrument was mailed to participants on each occasion. To assess the internal consistency of the UTBAS, Cronbach's alpha was calculated for each set of questionnaires. To assess the stability of the UTBAS over time, test-retest reliability was calculated. The correlation between Time 1 and Time 2 total UTBAS scores was calculated. A paired *t*-test was conducted to test whether any difference between UTBAS totals existed between Time 1 and Time 2.

Results

Phase 2

The two groups (i.e. PWS and Control) differed in UTBAS totals, even after excluding all items that contain reference to stuttering. The difference between these two groups is statistically significant [$t(38)=8.06, p<0.0001$], indicating that the stuttering group scored significantly higher (mean=101.3, SD=25.0) on this measure than the control group (mean=56.9, SD=14.1). The effect size was large at 2.3, suggesting clinical significance also. This finding supports the known-groups validity of the scale.

Correlations between the UTBAS and other measures in the clinical group are shown in table 1. Scores on the UTBAS were correlated significantly with scores on other measures of social anxiety (SPAI, $r=0.72, p<0.0001$; SADS, $r=0.68, p<0.0001$; FNE, $r=0.53, p<0.006$). This finding supports the convergent validity of the scale. The correlation between the UTBAS and the BAI, a general measure of anxiety, was not significant ($r=0.24$). The correlation between UTBAS scores and BDI-II scores, which measures depressive symptomatology, was also not significant ($r=0.27$). The overall pattern of these correlations supports the discriminant validity of the scale, as UTBAS scores were significantly correlated with measures of social anxiety but not with measures of general anxiety or depression.

As shown in table 2, the mean UTBAS score for the clinical group decreased significantly from pre-treatment to post-treatment [$t(25)=10.13, p<0.0001$]. Every

Table 1. Correlations between the Unhelpful Thoughts and Beliefs about Stuttering (UTBAS) and other measures

	Correlation with the UTBAS
SPAI diff	0.72*
SADS	0.68*
FNE	0.53**
BAI	0.24
BDI-II	0.27

* $p < 0.0001$; ** $p < 0.006$.

Table 2. Comparison of pre-treatment and post-treatment total Unhelpful Thoughts and Beliefs about Stuttering (UTBAS) total scores for the stuttering participants

	Pre-treatment ($n=26$)	Post-treatment ($n=26$)
Mean*	172.0	99.9
Standard deviation	38.4	20.6

* $p < 0.0001$.

one of the 26 stuttering participants showed a reduction in scores following treatment. On average, UTBAS scores reduced by more than 40% and the effect size was large at 2.5, suggesting clinical significance. These findings indicate that the UTBAS was sensitive to the changes in social anxiety that resulted from treatment.

Phase 3

Phase 3 of the research sought to establish the reliability of the UTBAS. Cronbach's alpha for Time 1 administration of the UTBAS was an impressive 0.98. Similarly, at Time 2, Cronbach's alpha=0.96. Both findings suggest a very high level of internal consistency for the instrument. The test-retest reliability of the instrument, with one month between administrations of the UTBAS and no intervening treatment, was an impressive $r=0.89$. A paired t -test found no difference ($p=0.99$) between UTBAS total scores at Time 1 (mean=135.6) and Time 2 (mean=135.5).

Discussion

It seems evident from the above data that the Unhelpful Thoughts and Beliefs about Stuttering (UTBAS) is a promising measure of unhelpful thoughts and beliefs concerning speech-related social anxiety in those who stutter. It appears that the UTBAS scale can discriminate between stuttering and control participants' unhelpful cognitions related to social anxiety, with large effect sizes (known-groups validity). Those who stutter are more prone than those who do not stutter to report thoughts such as 'I can't speak to aggressive people', 'people will think that I have no opinions', and 'people will think I'm boring because I have nothing to say' (see the appendix). Having said this, it is worth noting that those who stutter do not experience these thoughts all of the time. On average, individuals in the stuttering

sample, despite having sought treatment, indicated that they had these thoughts no more often than somewhere between 'rarely' and 'sometimes'.

The UTBAS scale appears to have strong internal consistency, test-retest reliability, known groups, convergent and discriminant validity. Further, it appears to be sensitive to changes obtained in treatment with a CBT package designed specifically for social anxiety in stuttering. All clinical participants in Phase 2 had decreased UTBAS scores after this CBT treatment, and a large effect size was obtained. In contrast, the Phase 3 (reliability) sample of PWS did not differ in their total UTBAS scores across two administrations of the measure, with no intervening treatment procedure.

To our knowledge, the UTBAS is the first measure of speech-related social anxiety developed specifically for use with adults who stutter. These results provide preliminary support for the use of the UTBAS as an exploratory tool and an outcome measure in stuttering research trials. There are several immediate applications for such a tool. It could be used to clarify further the role of speech-related anxiety in stuttering, and to determine the degree to which anxiety about speaking may account for poor long-term outcome with standard prolonged-speech interventions for stuttering. Whilst post-treatment outcome for prolonged-speech programmes is generally good, long-term relapse rates are high. Depending on how relapse is defined, estimates of relapse range across studies from 30% to 73% (Howie *et al.* 1981, Martin 1981, Perkins 1981, Boberg and Kully 1994, Craig and Hancock 1995). At this stage it is unclear what variables are related to relapse in adults who stutter. It may be that high levels of speech-related social anxiety influence long-term outcome. In our recent randomized controlled trial evaluating CBT for adults who stutter, participants who received only speech restructuring (without CBT) reported several difficulties during the post-treatment period (Bryant *et al.* 2002). First, they reported concern about, and avoidance of, feared speaking situations. This is likely to have resulted in reduced practice of speech techniques over time, and may therefore have affected their long-term outcome. Second, they reported that they did not always use their PS techniques because they were concerned that their novel speech pattern sounded unnatural, and were uncomfortable having attention drawn to their speech. Both complaints are a result of social anxiety, that is, fear of negative evaluation by others. The development of specific, reliable and valid measures to assess social anxiety in the stuttering population is an essential step towards clarifying poor long term outcomes in treatment for chronic stuttering. The early results suggest that the UTBAS is such a measure.

Whilst the findings from the present study are encouraging, they are clearly preliminary, and are based on quite small samples. Future research should further establish the psychometric properties of the UTBAS by replicating the current study with larger groups of adults who stutter and gender-matched controls, and determining whether those participants with a co-morbid diagnosis of social phobia score higher on the UTBAS than those without. Further work on the factor structure and content validity of the instrument should also be undertaken. To date, on the basis of evidence supporting the internal consistency and convergent validity of the instrument, no items have been cut from the UTBAS. It must be acknowledged that no attempt to exclude items that might be associated with constructs other than social anxiety has occurred in the development of the UTBAS. This might be seen as a weakness of the measure by some. However, in the present authors view, the strong internal consistency of the UTBAS and the need for a

comprehensive instrument to assess unhelpful/negative beliefs among those who stutter, strongly suggest that culling of items at this stage would be premature. Items were chosen because they were reported by clients who stuttered in speaking situations during cognitive-behavioural treatment for anxiety. The UTBAS provides a complete list of the range of unhelpful/negative beliefs of these individuals associated with anxious speaking moments. Large factor analytic studies might, in the future, reveal multiple factors on the UTBAS. This would not be surprising. However, removing items prior to such studies, is unwarranted in our view.

Acknowledgement

Declaration of interest: The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

Appendix: Unhelpful Beliefs About Stuttering (UTBAS) scale

Below we have compiled a list of thoughts, beliefs and attitudes about stuttering that you may experience. Using the numbers from the scale below, please indicate how frequently you have these thoughts. Write the number you choose (1, 2, 3, 4 or 5) for each thought in the space to the left of each item.

1. Never have the thought
2. Rarely have the thought
3. Sometimes have the thought
4. Often have the thought
5. Always have the thought

- | | | |
|-------|-----|---|
| _____ | 1. | People will doubt my ability because I stutter. |
| _____ | 2. | It's impossible to be really successful in life if you stutter. |
| _____ | 3. | I won't be able to keep a job if I stutter. |
| _____ | 4. | It's all my fault — I should be able to control my stutter. |
| _____ | 5. | I'm a weak person because I stutter. |
| _____ | 6. | No one will like me if I stutter. |
| _____ | 7. | I might stutter. |
| _____ | 8. | People focus on every word I say. |
| _____ | 9. | I am incompetent. |
| _____ | 10. | No one could love a stutterer. |
| _____ | 11. | I will stutter. |
| _____ | 12. | Everyone in the room will hear me stutter. |
| _____ | 13. | I'm stupid. |
| _____ | 14. | Other people will think I'm stupid if I stutter. |
| _____ | 15. | I'll never be successful because of my stutter. |
| _____ | 16. | I won't be able to answer their questions. |
| _____ | 17. | I'm hopeless. |
| _____ | 18. | I'm of no use in the workplace. |
| _____ | 19. | People will think I'm incompetent because I stutter. |
| _____ | 20. | I'll block completely and won't be able to talk. |
| _____ | 21. | Everyone will think I'm an idiot. |
| _____ | 22. | I can't speak to people in positions of authority. |
| _____ | 23. | People will think I'm strange. |
| _____ | 24. | People will think I can't speak English. |

- _____ 25. No one would want to have a relationship with a stutterer.
 _____ 26. I can't think clearly because I stutter.
 _____ 27. I can't speak to aggressive people.
 _____ 28. People will think that I have no opinions.
 _____ 29. People will think I'm boring because I have nothing to say.
 _____ 30. If I block, people will think I'm retarded.
 _____ 31. I can't face these people.
 _____ 32. People will wonder what's wrong with me if I stutter.
 _____ 33. What will people think of me if they disagree with what I say?
 _____ 34. Most people view stutterers as less capable.
 _____ 35. I don't want to go—people won't like me.
 _____ 36. My pauses are too long—people will think I'm weird.
 _____ 37. People won't like me because I won't be able to talk.
 _____ 38. I can't convince people of anything I say because I stutter.
 _____ 39. People will think I'm retarded if I stutter.
 _____ 40. I'll block – I know I will.
 _____ 41. I'll make a fool of myself.
 _____ 42. People get tired of waiting for me to get my words out.
 _____ 43. People shouldn't have to wait so long for me to speak.
 _____ 44. I always embarrass the people I'm speaking to.
 _____ 45. People think I have something to hide because my stutter sounds suspicious.
 _____ 46. People will think that I'm worthless
 _____ 47. I'll embarrass myself.
 _____ 48. I can't speak to people I find sexually attractive
 _____ 49. No one will understand what I'm trying to say.
 _____ 50. What's the point of even trying to speak—it never comes out right.
 _____ 51. I won't be able to say exactly what I want to say.
 _____ 52. Everyone will think I'm simple or dumb because I avoid using difficult words.
 _____ 53. I slow up everyone's conversation.
 _____ 54. Everyone hates it when I start to speak.
 _____ 55. I can never speak on the phone.
 _____ 56. I won't be able to ask for what I want.
 _____ 57. The person on the other end of the phone will hang up on me.
 _____ 58. People will laugh at me.
 _____ 59. People will think I'm mute.
 _____ 60. I'll never finish explaining my point – they'll misunderstand me.
 _____ 61. The answering machine will turn off if I block – I won't be able to leave any message.
 _____ 62. They'll think I'm a prank caller if I block.
 _____ 63. I won't be able to say 'hello' when I pick up the phone.
 _____ 64. People who stutter are stupid.
 _____ 65. People who stutter are incompetent.
 _____ 66. People who stutter are boring.

References

- AINSWORTH, S., 1939, Studies in the psychology of stuttering: XII. Emphatic breathing of auditors while listening to stuttering speech. *Journal of Speech Disorders*, **4**, 149–156.
- BAR, A., 1967, Effects of listening instructions on attention to manner and content of stutterers' speech. *Journal of Speech and Hearing Research*, **10**(1), 87–92.
- BAR, A., 1969, Effects of type of listeners and listening instructions on the attention to manner and content of a severe stutterer's speech. *Journal of Communication Disorders*, **2**(4), 344–349.
- BARLOW, D., 2002, *Anxiety and its Disorders: The Nature and Treatment of Anxiety and Panic* (New York, NY: Guilford).
- BECK, A. T., 1996, *The Beck Depression Inventory-II* (San Antonio, TX: Psychological Corporation).

- BECK, A. T., EPSTEIN, N., BROWN, G. and STEER, R. A., 1988, An inventory for measuring clinical anxiety: psychometric properties. *Journal of Consulting and Clinical Psychology*, **56**, 893–897.
- BLOODSTEIN, O., 1995, *A Handbook on Stuttering*, 5th edn (San Diego, CA: Singular).
- BOBERG, E. and KULLY, D., 1994, Long-term results of an intensive treatment program for adults and adolescents who stutter. *Journal of Speech and Hearing Research*, **37**, 1050–1059.
- BRYANT, C., BLOCK, S., MENZIES, R., MCCOLL, T., MCGARTLAND, M., ONSLOW, M. and PACKMAN, A., 2002, The effect of cognitive behaviour therapy in the treatment of adult stuttering: an interim report. Paper presented at the 2002 Speech Pathology Australia National Conference, Alice Springs, Australia.
- BUTLER, G., 1996, Research and practice in the treatment of complex anxiety disorders: developing more effective treatments. In W. Dryden (ed.), *Research in Counselling and Psychotherapy: Practical Applications* (Beverly Hills, CA: Sage), pp. 79–100.
- CLARKE, J. C. and WARDMAN, W., 1985, *Agoraphobia, A Personal and Clinical Account* (Sydney: Pergamon).
- COX, N. J., SEIDER, R. A. and KIDD, K. K., 1984, Some environmental factors and hypotheses for stuttering in families with several stutterers. *Journal of Speech and Hearing Research*, **27**(4), 543–548.
- CRAIG, A., 1990, An investigation into the relationship between anxiety and stuttering. *Journal of Speech and Hearing Disorders*, **55**(2), 290–294.
- CRAIG, A., HANCOCK, K., TRAN, Y. and CRAIG, M., 2003a, Anxiety levels in people who stutter: a randomized population study. *Journal of Speech Language and Hearing Research*, **46**(5), 1197–1206.
- CRAIG, A., TRAN, Y. and CRAIG, M., 2003b, Stereotypes towards stuttering for those who have never had direct contact with people who stutter: a randomized and stratified study. *Perceptual and Motor Skills*, **97**(1), 235–245.
- CRAIG, A. R. and HANCOCK, K., 1995, Self-reported factors related to relapse following treatment for stuttering. *Australian Journal of Human Communication Disorders*, **23**, 48–60.
- DE CARLE, A. J. and PATO, M. T., 1996, Social phobia and stuttering [letter]. *American Journal of Psychiatry*, **153**(10), 1367–1368.
- DESPERT, J. L., 1943, A therapeutic approach to the problem of stuttering in children. *Nervous Child*, **2**, 134–147.
- DILOLO, A., MANNING, W. H. and NEIMEYER, R. A., 2003, Cognitive anxiety as a function of speaker role for fluent speakers and persons who stutter. *Journal of Fluency Disorders*, **28**(3), 167–186.
- DOODY, I., KALINOWSKI, J., ARMSON, J. and STUART, A., 1993, Stereotypes of stutterers and nonstutterers in three rural communities in Newfoundland. *Journal of Fluency Disorders*, **18**(4), 363–373.
- DORSEY, M. and GUENTHER, R. K., 2000, Attitudes of professors and students toward college students who stutter. *Journal of Fluency Disorders*, **25**(1), 77–83.
- DOZOIS, D. J. A., DOBSON, K. S. and AHNBERG, J. L., 1998, A psychometric evaluation of the Beck Depression Inventory-II. *Psychological Assessment*, **10**, 83–89.
- ENDLER, N. F., MAGNUSON, D., EKEHAMMAR, B. and OKADA, M., 1976, The multidimensionality of stait and trait anxiety. *Scandinavian Journal of Psychology*, **17**, 81–96.
- ENDLER, N. S., EDWARDS, J. M. and VITELLI, R., 1991a, *Endler Multidimensionality Anxiety Scales (EMAS): Manual* (Los Angeles, CA: Western Psychological Services).
- ENDLER, N. S., PARKER, J. D. A., BAGBY, R. M. and COX, B. J., 1991b, Multidimensionality of state and trait anxiety factor structure of the Endler Multidimensionality Anxiety Scales. *Journal of Personality and Social Psychology*, **60**, 919–926.
- EZRATI-VINACOUR, R. and LEVIN, I., 2004, The relationship between anxiety and stuttering: a multidimensional approach. *Journal of Fluency Disorders*, **29**(2), 135–148.
- FITZGERALD, H. E., DJURDJIC, S. D. and MAGUIN, E., 1992, Assessment of sensitivity to interpersonal stress in stutterers. *Journal of Communication Disorders*, **25**, 31–42.
- GUITAR, B., 2006, *Stuttering: An Integrated Approach to its Nature and Treatment*, 3rd edn (Baltimore, MD: Lippincott Williams & Wilkins).
- HAM, R. E., 1990, What is stuttering: — Variations and stereotypes. *Journal of Fluency Disorders*, **15**(5–6), 259–273.
- HANSON, B. R., RICE, P. L. and GRONHOVD, K. D., 1978, The short-form speech situation checklist: a clinical scale for identification of speech-related anxiety in stutterers. Paper presented at the American Speech and Hearing Association Convention, San Francisco, CA, USA.
- HAYHOW, R., CRAY, A. M. and ENDERBY, P., 2002, Stammering and therapy views of people who stammer. *Journal of Fluency Disorders*, **27**(1), 1–17.
- HOFMAN, S. G. and BARLOW, D. H., 2002, Social phobia. In D. Barlow (ed.), *Anxiety and its Disorders: The Nature and Treatment of Anxiety and Panic* (New York, NY: Guilford), pp. 454–476.

- HONIG, P., 1947, The stutterer acts it out. *Journal of Speech Disorders*, **12**, 105–109.
- HOWIE, P., TANNER, S. and ANDREWS, G., 1981, Short- and long-term outcome in an intensive treatment program for adult stutterers. *Journal of Speech and Hearing Disorders*, **46**, 104–109.
- INGHAM, R. J., 1984, *Stuttering and Behaviour Therapy: Current Status and Experimental Foundations* (San Diego, CA: College Hill Press).
- JANSSEN, P. and KRAAIMAAT, F., 1980, Disfluency and anxiety in stuttering and non-stuttering adolescents. *Behavioural Analysis and Modification*, **4**(2), 116–126.
- JOHNSON, W., 1955, The time, the place, and the problem. In W. Johnson (ed.), *Stuttering in Children and Adults* (Minneapolis, MN: University of Minnesota Press), pp. 3–24.
- KLASSEN, T. R., 2001, Perceptions of people who stutter: re-assessing the negative stereotype. *Perceptual and Motor Skills*, **92**(2), 551–559.
- KRAAIMAAT, F. W., JANSSEN, P. and BRUTTEN, E. J., 1988, The relationship between stutterers' cognitive and autonomic anxiety and therapy outcome. *Journal of Fluency Disorders*, **13**, 107–113.
- KRAAIMAAT, F. W., JANSSEN, P. and VAN DAM-BAGGEN, R., 1991, Social anxiety and stuttering. *Perceptual and Motor Skills*, **72**, 766.
- KRAAIMAAT, F. W., VANRYCKEGHEM, M. and VAN DAM-BAGGEN, R., 2002, Stuttering and social anxiety. *Journal of Fluency Disorders*, **27**, 319–330.
- LASS, N. J., et al. 1994, School administrators' perceptions of people who stutter. *Language, Speech and Hearing Services in the Schools*, **25**(2), 90–93.
- LASS, N. J., RUSCELLO, D. M., PANNBACKER, M., SCHMITT, J. F., MIDDLETON, G. F. and SCHWEPPEHEISER, K., 1995, The perceptions of stutterers by people who stutter. *Folia Phoniatrica et Logopaedica*, **47**(5), 247–251.
- LEANDERSON, R. and LEVI, L., 1967, A new approach to the experimental study of stress and stuttering. *Acta Otolaryngologica*, **224**, 311–316.
- LINCOLN, M., ONSLOW, M. and MENZIES, R. G., 1996, Beliefs about stuttering and anxiety: research and clinical implications. *Australian Journal of Human Communication Disorders*, **24**(1), 3–10.
- MAHR, G. C. and TOROSIAN, T., 1999, Anxiety and social phobia in stuttering. *Journal of Fluency Disorders*, **24**(2), 119–126.
- MARXS, I. M., 1987, *Fears, Phobias and Rituals: Panic, Anxiety and their Disorders* (New York, NY: Oxford University Press).
- MARTIN, R. R., 1981, Introduction and perspective: review of published research. In E. Boberg (ed.), *Maintenance of Fluency* (New York, NY: Elsevier), pp. 1–30.
- MATTICK, R. P., PETERS, L. and CLARKE, J. C., 1989, Exposure and cognitive restructuring for social phobia: a controlled study. *Behavior Therapy*, **20**, 2–23.
- MCCOLL, T., ONSLOW, M., PACKMAN, A. and MENZIES, R. G., 2001, A cognitive behavioural intervention for social anxiety in adults who stutter. In Proceedings of the 2001 Speech Pathology Australia National Conference, 93–98.
- MCDONALD, E. and FRICK, J., 1954, Store clerks' reaction to stuttering. *Journal of Speech and Hearing Disorders*, **19**, 306–311.
- MENZIES, R. G. and CLARKE, J. C., 1995, Individual response patterns, treatment matching, and the effects of behavioural and cognitive interventions for acrophobia. *Anxiety, Stress and Coping*, **8**, 141–160.
- MENZIES, R. G., ONSLOW, M. and PACKMAN, A., 1999, Anxiety and stuttering: Exploring a complex relationship. *American Journal of Speech–Language Pathology*, **8**, 3–10.
- MESSENGER, M., ONSLOW, M., PACKMAN, A. and MENZIES, R., 2004, Social anxiety in stuttering: Measuring negative social expectancies. *Journal of Fluency Disorders*, **29**, 201–212.
- MEYER, B. C., 1945, Psychosomatic aspects of stuttering. *Journal of Nervous and Mental Disorders*, **101**, 127–157.
- MILLER, S. and WATSON, B. C., 1992, The relationship between communication attitude, anxiety, and depression in stutterers and nonstutters. *Journal of Speech and Hearing Research*, **35**(4), 789–798.
- MOLT, L. M. and GUILFORD, A. M., 1979, Auditory processing and anxiety in stutterers. *Journal of Fluency Disorders*, **4**(4), 255–267.
- O'BRIAN, S., ST CLARE, T. and HARRISON, E., in press, Measures of treatment process and outcome. In M. Onslow (ed.), *Evidence Based Clinical Management of Stuttering* (Austin, TX: PRO-ED).
- OEI, T. P., KENNA, D. and EVANS, L., 1991, The reliability, validity and utility of the SAD and FNE scales for anxiety disorder patients. *Personality and Individual Differences*, **12**, 111–116.
- ONSLow, M., 2006, Connecting stuttering management and measurement: V. Deduction and induction in the development of stuttering treatment outcome measures and stuttering treatments. *International Journal of Language and Communication Disorders*, **41**(4), 407–421.

- OSMAN, A., BARRIOS, F. X., AUKES, D., OSMAN, J. R. and MARKWAY, K., 1993, The Beck Anxiety Inventory: psychometric properties in a community population. *Journal of Psychopathology and Behavioral Assessment*, **15**, 287–297.
- OSMAN, A., DOWNS, W. R., BARRIOS, F. X., KOPPER, B. A., GUTIERREZ, P. M. and CHIROS, C. E., 1997, Factor structure and psychometric characteristics of the Beck Depression Inventory-II. *Journal of Psychopathology and Behavioral Assessment*, **19**, 359–376.
- PAPROCKI, J. and ROCHA, F. L., 1999, Stuttering associated with social phobia. Results with pharmacological treatment. *Jornal Brasileiro de Psiquiatria*, **48**(6), 263–273.
- PERKINS, W. H., 1981, Measurement and maintenance of fluency. In E. Boberg (ed.), *Maintenance of Fluency* (New York, NY: Elsevier), pp. 147–178.
- PETERS, H. F. M. and HULSTIJN, W., 1984, Stuttering and anxiety: the difference between stutters and nonstutters in verbal apprehension and physiologic arousal during the anticipation of speech and non-speech tasks. *Journal of Fluency Disorders*, **9**(1), 67–84.
- PETERS, L., 2000, Discriminant validity of the Social Phobia and Anxiety Inventory (SPAI), the Social Phobia Scale (SPS) and the Social Interaction Anxiety Scale (SIAS). *Behaviour Research and Therapy*, **38**, 943–950.
- PORTER, H. V. K., 1939, Studies in the psychology of stuttering: XIV. Stuttering phenomena in relation to size and personnel of audience. *Journal of Speech Disorders*, **4**, 323–333.
- POULTON, R. and ANDREWS, G., 1994, Appraisal of danger and proximity in social phobics. *Behaviour Research and Therapy*, **32**, 639–642.
- RIES, B. J., McNEIL, D. W., BOONE, M. L., TURK, C. L., CARTER, L. E. and HEIMBERG, R. G., 1998, Assessment of contemporary social phobia verbal report instruments. *Behaviour Research and Therapy*, **36**, 983–994.
- RIES, B. J., McNEIL, D. W., BOONE, M. L., TURK, C. L., CARTER, L. E. and HEIMBERG, R. G., 2001, Psychometric properties of the social phobia and anxiety inventory, the Social Anxiety Scale for Adolescents, the Fear of Negative Evaluation Scale, and the Social Avoidance and Distress Scale in an adolescent Spanish-speaking sample. *Journal of Psychopathology and Behavioral Assessment*, **23**, 51–59.
- RUSCELLO, D. M., LASS, N. J., SCHMITT, J. F. and PANBACKER, M. D., 1994, Special educators' perceptions of stutters. *Journal of Fluency Disorders*, **19**(2), 125–132.
- SCHNEIER, F. R., WEXLER, K. B. and LIEBOWITZ, M. R., 1997, Social phobia and stuttering. *American Journal of Psychiatry*, **154**, 131.
- SIEGEL, G. M. and HAUGEN, D., 1964, Audience size and variations in stuttering behavior. *Journal of Speech and Hearing Research*, **7**, 381–388.
- ST CLARE, T., 2003, Assessment procedures. In R. G. Menzies and P. de Silva (eds), *Obsessive–Compulsive Disorder: Theory, Research and Treatment* (Chichester: Wiley), pp. 239–257.
- STEER, R. A., RANIERI, W. F., BECK, A. T. and CLARK, D. A., 1993, Further evidence for the validity of the Beck Anxiety Inventory with psychiatric outpatients. *Journal of Anxiety Disorders*, **7**, 195–205.
- STEIN, M. B., BAIRD, A. and WALKER, J. R., 1996, Social phobia in adults with stuttering. *American Journal of Psychiatry*, **153**, 278–280.
- TREON, M. and DEMPSTER, L., 2006, MMPI-2/A assessed personality differences in people who do, and do not, stutter. *Social Behavior and Personality*, **34**(3), 271–293.
- TURNBAUGH, K. R., GUITAR, B. E. and HOFFMAN, P. R., 1979, Speech clinicians' attribution of personality traits as a function of stuttering severity. *Journal of Speech and Hearing Research*, **22**(1), 37–45.
- TURNER, S. M., BEIDEL, D. C. and DANCU, C. V., 1986, *SPAI: Social Phobia and Anxiety Inventory* (New York, NY: Multi-Health Systems).
- VAN RIPER, C., 1982, *The Nature of Stuttering* (Englewood Cliffs, NJ: Prentice-Hall).
- WATSON, D. and FRIEND, R., 1969, Measurement of social-evaluative anxiety. *Journal of Consulting and Clinical Psychology*, **33**, 448–457.
- WEBER, C. and SMITH, A., 1990, Autonomic correlates of stuttering and speech assessed in a range of experimental tasks. *Journal of Speech and Hearing Research*, **33**, 690–706.
- WELLS, A. and CLARK, D. M., 1997, Social phobia: A cognitive approach. In G. C. L. Davey (ed.), *Phobias: A Handbook of Theory, Research and Treatment* (Chichester: Wiley), pp. 3–26.
- YAIRI, E. and WILLIAMS, D. E., 1970, Speech clinicians' stereotypes of elementary-school boys who stutter. *Journal of Communication Disorders*, **3**(3), 161–170.
- YARUSS, J. S., QUESAL, R. W., REEVES, L., MOLT, L. F., KLUETZ, B., CARUSO, A. J., McCLURE, J. A. and LEWIS, F., 2002, Speech treatment and support group experiences of people who participate in the National Stuttering Association. *Journal of Fluency Disorders*, **27**, 115–134.