

Self-Reported Acceptance of Social Anxiety Symptoms: Development and Validation of the Social Anxiety - Acceptance and Action Questionnaire

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Abstract

Mindfulness and acceptance-based interventions have been used in social anxiety treatments with initial success. Further research requires the psychometrically sound measurement of mechanisms of change associated with these treatments. This research was conducted to develop and evaluate such a measure, the Social Anxiety – Acceptance and Action Questionnaire (SA-AAQ) which was created to assess acceptance specific to social anxiety symptoms. The results indicated that the SA-AAQ has good internal consistency and good convergent and divergent validity. Findings suggest that the SA-AAQ is a psychometrically sound instrument proposed to measure acceptance of social anxiety symptoms, a potential mechanism of change in mindfulness and acceptance-based interventions for social anxiety. Keywords: anxiety, social anxiety, mindfulness, acceptance, acceptance and commitment therapy (ACT)

Social anxiety disorder (SAD) is characterized as a persistent fear of negative evaluation in social situations. This chronic condition is the fourth most common psychiatric disorder (Kessler, Berglund, Demler, Jin, & Walters, 2005), and is most often treated using cognitive behavior therapy (CBT). Although CBT has been widely demonstrated as efficacious for treating social anxiety, many individuals with social anxiety do not benefit from this treatment modality or only experience minimal improvement (Hofmann & Bögels, 2006). Therefore, clinicians and researchers have been drawn to other approaches to treatment, including mindfulness and acceptance-based interventions.

Briefly, mindfulness can be described as intentional present moment awareness and a sense of nonjudgmental acceptance towards life's events (Kabat-Zinn, 1994). Mindfulness is a concept derived from eastern spiritual traditions, and has increasingly been incorporated by clinical researchers into interventions that are applied in medical and mental health settings. The acceptance component is of particular importance to the current study, and is often conceptualized along a continuum. The scope of acceptance ranges from experiential avoidance (or a lack of acceptance), where an individual is unwilling to remain in contact with internal experiences (such as thoughts and feelings), to acceptance, where an individual actively experiences his/her internal events (Hayes, Strosahl, & Wilson, 1999).

Mindfulness and acceptance-based treatments, including acceptance and commitment therapy (ACT; Hayes et al., 1999), have emerged as efficacious for a wide spectrum of clinical disorders (Baer, 2003). ACT evolved from CBT and has retained some of its fundamentals, such as exposure (albeit following a different rationale), and builds upon them. Specifically, ACT aims to help clients increase acceptance of thoughts and feelings, choose valued directions for their lives, and commit to actions which are consistent with those values (Hayes et al., 1999). Within the ACT model, mindfulness and acceptance are related and distinct strategies used to increase psychological flexibility, or the ability to be aware of the present moment, in the pursuit of valued goals (Lillis, Hayes, Bunting, & Masuda, 2009). The goal of acceptance may be particularly significant for psychologists because disruptions in the acceptance component appear to be relevant in psychopathology (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996).

A growing body of research has provided evidence for the usefulness of mindfulness and acceptance-based interventions specifically in the context of social anxiety (Bögels, Sijbers, & Voncken, 2006; Dalrymple & Herbert, 2007; Herbert & Cardaciotto, 2005; Kocovski, Fleming, & Rector, 2009;

Koszycki, Benger, Shlik, & Bradwejn, 2007; Ossman, Wilson, Storaasli, & McNeill, 2006). These findings in support of mindfulness and acceptance-based treatments for social anxiety are encouraging; however, further examinations of such interventions are necessary to build support for their use and also to address how these treatments work. Valid and reliable indices assessing mindfulness and/or acceptance are integral for understanding the mechanisms by which mindfulness and acceptance-based therapies result in beneficial changes.

In recent years, a number of general self-report measures of mindfulness and acceptance have been developed and validated (Baer, Smith, & Allen, 2004; Brown & Ryan, 2003; Buchheld, Grossman, & Walach, 2001; Feldman, Hayes, Kumar, & Greeson, 2004). One such instrument is the Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004). The AAQ is a measure commonly used by ACT researchers to assess experiential avoidance, or a lack of acceptance of negative private events (e.g., thoughts, feelings, physical sensations). The AAQ has been validated across a wide variety of populations and shown to be relatively psychometrically sound, and several complaint-specific measures have been adapted from this scale.

Context-specific indices of acceptance have arisen from the belief that general measures of acceptance may possess less utility than those that pertain to certain circumstances. Theoretically, individuals may find it difficult to report avoiding decontextualized thoughts and feelings, as listed in these nonspecific measures, and may find it easier to respond that they avoid specific internal events that are associated with particular settings. For example, a socially anxious individual may be able to report more accurately the avoidance of thoughts that are socially distressing rather than negative thoughts in general. Further, it is of greater interest to assess the degree to which socially anxious thoughts and feelings are avoided, rather than negative thoughts and feelings in general. In support of this assertion, several context-specific measures of acceptance have been developed, and have been found to be sensitive to change across acceptance-based treatments. These include AAQs that are specific to Body Image (Sandoz, 2010), weight (Lillis & Hayes, 2008), diabetes (Gregg, Callahan, Hayes, & Glenn-Lawson, 2007), auditory and command hallucinations (Shawyer, Ratchiff, Mackinnon, Farhall, Hayes, & Copolov, 2007), cigarette smoking (Gifford, Kohlenberg, Hayes, Antonuccio, Piasecki, Rasmussen-Hall, et al., 2002), chronic pain (McCracken, Vowles, & Eccleston, 2004), epilepsy (Lundgren, Dahl, & Hayes, 2008), and trauma (Braekkan, 2007). Despite the growing body of complaint-specific acceptance measures, none have assessed acceptance specific to social anxiety.

Empirical literature has demonstrated that mindfulness and acceptance-based protocols have led to promising results in the treatment of social anxiety (Bögels et al., 2006; Dalrymple & Herbert, 2007; Kocovski et al., 2009; Ossman et al., 2006), yet further research is required. The lack of specificity of current measures makes it difficult to evaluate mechanisms of change within the intervention, which is an integral part of investigating therapeutic efficacy. In order to further examine the use of such treatments, it is necessary to measure acceptance specific to the complaint being treated. Therefore, this study was designed to address these shortcomings within the literature.

The first study involved the creation of a novel instrument designed to measure this construct in addition to its psychometric evaluation. The Social Anxiety – Acceptance and Action Questionnaire (SA-AAQ) is an instrument adapted from the AAQ and designed to be a context-specific extension of the AAQ, measuring acceptance specific to social anxiety symptoms.

The second study was conducted to provide support for the validity of the SA-AAQ. This was done by administering relevant measures concurrently and examining the relationship between the SA-AAQ and these other instruments. Because increased acceptance as measured using the AAQ has been positively associated with measures of mindfulness (e.g., Kentucky Inventory of Mindfulness Skills; Baer, Smith, & Allen, 2004), it was expected that the SA-AAQ would correlate positively with more

general measures of mindfulness and conversely, that it would correlate negatively with a measure of thought suppression. In addition, the AAQ has been shown to be significantly negatively correlated with measures of psychopathology, namely anxiety and depression. Thus, it was expected that the SA-AAQ would correlate negatively with measures of social anxiety. Due to the design of the SA-AAQ measuring acceptance unique to social anxiety, it was also expected that the SA-AAQ would be less associated with a measure of depression than with measures of social anxiety.

Study 1: Development, Factor Structure, and Internal Consistency of the SA-AAQ

The first study in the current research involved the development of the SA-AAQ, which was designed to assess acceptance and action specific to social anxiety symptoms. The psychometric properties of this measure were initially examined.

Method

Participants. The sample used to construct the SA-AAQ consisted of 352 undergraduate participants (mean age: 18.6; 66.1% female; 78.7% Caucasian) who were recruited for participation in return for extra credit in their introductory psychology course.

Procedure. The Social Anxiety – Acceptance and Action Questionnaire (SA-AAQ) was designed to assess acceptance of social anxiety symptoms, or the extent to which an individual is aware of thoughts and feelings about their social anxiety without attempting to change them. This measure was developed by examining existing mindfulness and acceptance and related measures and adapting items to be more specific to social anxiety. Of paramount importance in this process was the 16-item version of the Acceptance and Action Questionnaire (AAQ; Bond & Bunce, 2003). Items from this measure were only slightly modified in order to measure the same construct specific to social anxiety. Additionally, items were adapted from other scales, including the Body Image-AAQ (Sandoz, 2010), the Nonjudging of Experience subscale of the 5-Factor Mindfulness Questionnaire (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006), the Struggle and Control- Trait questionnaire (Rodebaugh & Heimberg, 2006), the White Bear Suppression Inventory (Wegner & Zanakos, 1994), the Philadelphia Mindfulness Scale (Cardaciotto, Herbert, Forman, Moitra, & Farrow, 2008) and the Experiences Questionnaire (Fresco et al., 2007).

The original SA-AAQ item pool included 56 items. Sample items included “I criticize myself for having irrational or inappropriate social anxiety” and “I get on with my life even when I feel socially anxious”. Following the structure of the original AAQ, each item was rated on a 7-point Likert scale ranging from 1- Never True to 7- Always True. The instructions asked participants to respond to the items focusing on situations where they may experience social anxiety. The initial 56-item pool of the SA-AAQ was then administered as a web-based questionnaire.

Results and Discussion

Factor analysis. In order to establish the factor structure of this measure, a principal components analysis (PCA) using oblique PROMAX rotation was conducted on the SA-AAQ item pool. The results of this analysis suggested two factors, based on a visual examination of the scree plot. The first factor accounted for 50.33% of the variance. The second factor accounted for an additional 9.87% of the variance. A second PCA analysis was conducted to extract two factors again using an oblique PROMAX rotation. Items that did not load on the first two factors were deleted. The following PCA resulted in a clear two-factor 19-item solution (Cronbach's $\alpha = .94$, $M = 94.05$, $SD = 18.79$). The factor loadings appear in Table 1. A total of nineteen items had factor loadings on one factor above .35; however, these loadings indicated that items loaded together on the basis of the valence of the statements. Specifically, the first factor included all items worded in the direction of lack of acceptance (reverse-scored), and the

second factor included all items worded in the direction of acceptance. Three items loaded on both factors. This effect has also been reported in the development of the Body Image – Acceptance and Action Questionnaire (Sandoz, 2010) where positively worded items loaded together on a single factor, and negatively worded items loaded together separately. This suggests that there is one conceptual factor, which is being obscured by method effects. The authors of the BI-AAQ reported completing a second principal factor analysis where one factor was extracted. Similar findings were reported for the AAQ-II (Bond et al., 2008) whereby the researchers reported the emergence of a two-factor solution. The authors completed additional analyses of the factor structure, including confirmatory factor analysis (CFA), to test for these types of method effects, and determined that the AAQ-II had a one-factor solution after specifying a method effect. The single factor AAQ-II was designed to improve upon the psychometrics of the initial versions of the AAQ and the newly developed, domain-specific acceptance measures are only one factored as well. The strength and magnitude of the correlation between the two factors provided further support that the scale is likely one-factored. These two factors were correlated significantly in the present study ($r = .70, p < .001$); the strength and magnitude of this correlation appeared to indicate that these two factors were measuring the same or a very similar construct, suggesting that this scale may be unidimensional.

Table 1

Study 1: Factor Loadings of the Social Anxiety – Acceptance and Action Questionnaire (N = 352)

Item of the SA-AAQ	Acceptance	Action
1. Despite feeling socially anxious at times, I am in control of my life.	.03	.70
2. If I am anxious in a social situation, I can still remain in it.	.07	.74
3. There are not many activities that I stop doing when I am feeling socially anxious.	-.17	.73
4. I get on with my life even when I feel socially anxious.	.11	.73
5. Being socially anxious makes it difficult for me to live a life that I value. (R)	.49	.41
6. I would gladly sacrifice important things in my life to be able to stop being socially anxious. (R)	.45	.36
7. I care too much about whether or not I feel anxious in social situations. (R)	.67	.16
8. I worry about not being able to control social anxiety. (R)	.68	.15
9. I can move toward important goals, even when I am feeling socially anxious.	.05	.68
10. My social anxiety must decrease before I can take important steps in my life. (R)	.50	.35
11. My social anxiety does not interfere with the way I want to live.	.32	.56
12. I find myself going around and around in circles thinking about my social anxiety. (R)	.78	.11
13. It seems like I'm fighting with myself about my social anxiety. (R)	.76	.17
14. I have thoughts about social anxiety that I get caught up in. (R)	.78	.11

15. I tell myself that I shouldn't have certain thoughts about social anxiety. (R)	.85	-.13
16. I criticize myself for having irrational or inappropriate social anxiety. (R)	.87	-.09
17. I believe that having socially anxious thoughts is abnormal or bad and I shouldn't think that way. (R)	.76	.17
18. I make judgments about whether my thoughts about my social anxiety are good or bad. (R)	.89	-.15
19. I disapprove of myself when I feel socially anxious. (R)	.85	-.11

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; “R” in parentheses indicates a reverse scored item; Factor loadings greater than .35 are in bold.

Internal consistency. The SA-AAQ was evaluated for internal consistency. Cronbach's alpha was .94, suggesting excellent internal consistency. These results provided further support that the SA-AAQ is a unidimensional construct.

Study 2: Validation of the SA-AAQ

The second study in the present research was designed to examine the validity of the SA-AAQ. The newly created SA-AAQ was administered concurrently with existing and empirically validated instruments. It was expected that (a) the SA-AAQ would correlate negatively with measures of social anxiety; (b) the SA-AAQ would correlate positively with measures of mindfulness and negatively with a measure of thought suppression; and (c) the SA-AAQ would be less associated with measures of depression than measures of social anxiety.

Method

Participants. The sample used to validate the initial item solution consisted of 339 undergraduate participants (mean age: 18.9; 81.2% female; 84.8% Caucasian) who also were recruited for participation in return for extra credit in their introductory psychology course.

Measures.

The Social Anxiety – Acceptance and Action Questionnaire. The 19-item final version of the SA-AAQ was used in this study. Higher scores on the SA-AAQ are indicative of a greater stance of acceptance of social anxiety symptoms.

Social anxiety. Four standardized and psychometrically sound measures of social anxiety were used for convergent validity assessment. The Social Phobia Scale and Social Interaction Anxiety Scales (SPS and SIAS; Mattick & Clarke, 1998) are commonly-used measures of social anxiety severity, each consisting of 20 items. Participants respond on a five-point scale from not at all to extremely characteristic, and responses are scored such that higher scores indicate greater anxiety pertaining to social situations. Both the SPS and SIAS have demonstrated good validity and excellent internal consistency (Heimberg, Mueller, Holt, & Hope, 1992; Mattick & Clarke, 1998). The Liebowitz Social Anxiety Scale (LSAS; Liebowitz, 1987) is used to assess the range of social interaction and performance situations that individuals with social phobia may fear and/or avoid. This measure consists of 24 items which are rated on anxiety (0 to 3 = none, mild, moderate, severe) and avoidance (0 to 3 = never, occasionally, often, usually). Excellent internal consistency and validity have been demonstrated (Fresco et al., 2001; Heimberg et al., 1999). The Liebowitz Self-Rated Disability Scale (LSRDS; Schneier,

Heckelman, Garfinkel, & Campeas, 1994) is an 11-item measure which assesses current and lifetime impairment related to social anxiety across several different domains. The domains include alcohol abuse, drug abuse, mood dysregulation, education, career, family relationships, romantic relationships, friendships, hobbies, activities of daily living, and suicidality. Participants were asked to rate how much their social anxiety limits their ability to do various things. Ratings for the LSRDS range from 0 to 3, with 3 being most severe. Adequate internal consistency has been found and there are data to support its validity (Hambrick, Turk, Heimberg, Schneier, & Liebowitz, 2004). As the SA-AAQ was designed to assess acceptance specific to social anxiety, it was expected that it would be negatively correlated with these measures of social anxiety.

Mindfulness, acceptance, and thought suppression. The Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2008) is a 10-item instrument designed to measure acceptance, or the lack thereof, and was developed to address psychometric concerns of the original version of the AAQ. This questionnaire has good reliability and yields a single factor (Bond et al., 2008). Higher scores on this measure indicate greater acceptance. The Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003) is a 15-item scale which measures the frequency of everyday mindful states, using both general and situation-specific statements. Participants are asked to rate how frequently or infrequently they have each experience on a scale ranging from almost always to never. Good internal consistency and validity have been found (Brown & Ryan, 2003). The 39-item Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006) measures five aspects of mindfulness, namely nonreactivity, observing, acting with awareness, describing, and nonjudging. Participants were asked to rate how true each statement is of them ranging from never to very often. Each of the five facet scales show adequate to good internal consistency (Baer et al., 2006). It was expected that the SA-AAQ would be positively associated with these indices of mindfulness. The White Bear Suppression Inventory (WBSI; Wegner & Zanakos, 1994) was included in the present study as it is believed that suppression is one possible antithesis of mindfulness. The WBSI is a 15-item scale which assesses chronic thought suppression. Responses are based on a 5-point Likert scale ranging from A (strongly disagree) to E (strongly agree). Wegner and Zanakos (1994) demonstrated that this instrument possesses good internal consistency. Due to the WBSI being scored such that greater scores indicate greater thought suppression, it was expected that the SA-AAQ would correlate negatively with this measure.

Depression. The Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996) is a commonly used 21-item scale assessing severity of depression symptoms. This measure has been consistently found to demonstrate considerable validity and reliability (Beck et al., 1996). Anxiety and depression often co-occur, so it was expected that there would be a negative correlation between the SA-AAQ and the BDI-II. However, it was predicted that the SA-AAQ would be less associated with this measure of depression than with the measures of social anxiety.

Procedure. The final 19-item version of the SA-AAQ was administered as a web-based questionnaire along with the additional validation measures.

Results

Descriptive statistics for the measures included in this study are presented in Table 2.

Table 2

Study 2: Descriptive Statistics (N = 339)

Questionnaire	Mean	SD	Alpha
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Social Anxiety Measures			
SA-AAQ	98.75	19.47	.94
SPS	19.40	12.61	.92
SIAS	25.48	14.30	.94
LSAS	39.47	20.06	.94
LSRDS	12.21	10.45	.91
Mindfulness Measures			
MAAS	3.66	.78	.88
AAQ-II	46.27	6.93	.80
FFMQ			
Nonreactivity	20.47	3.69	.71
Observe	24.11	4.79	.74
Act with Awareness	25.12	5.49	.88
Describe	25.42	5.73	.88
Nonjudging	26.95	6.43	.92
Other Measures			
WBSI	50.38	10.81	.90
BDI	12.01	9.70	.91

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale; LSAS = Liebowitz Social Anxiety Scale; LSRDS = Liebowitz Self Reported Disability Scale; MAAS = Mindful Attention and Awareness Scale; AAQ-II = Acceptance and Action Questionnaire II; FFMQ = Five Facet Mindfulness Questionnaire; WBSI = White Bear Suppression Inventory; BDI = Beck Depression Inventory.

Factor analysis. In order to further investigate the factor structure of the SA-AAQ, a principal components analysis using oblique PROMAX rotation was conducted on these data. The PCA again yielded a two-factor solution using a visual examination of the scree plot which, upon examination, suggested that items were again loading together based on valence of item wording. Factor 1 was comprised of 13 items, with an Eigenvalue of 9.55 and accounted for 50.28% of the variance. Factor 2 was comprised of 6 items, with an Eigenvalue of 1.82 and accounted for 9.56% of the variance. There were no items that loaded on both factors. See Table 3 for factor loadings. A Pearson's bivariate correlation was calculated for the association between the two factors which resulted in a value of .74, $p < .01$.

Table 3
Study 2: Factor Loadings of the SA-AAQ (N = 339)

Item of the SA-AAQ	Acceptance	Action
1. Despite feeling socially anxious at times, I am in control of my life.	.01	.76
2. If I am anxious in a social situation, I can still remain in it.	-.16	.88

3. There are not many activities that I stop doing when I am feeling socially anxious.	-.10	.77
4. I get on with my life even when I feel socially anxious.	-.05	.87
5. Being socially anxious makes it difficult for me to live a life that I value. (R)	.58	.28
6. I would gladly sacrifice important things in my life to be able to stop being socially anxious. (R)	.58	.08
7. I care too much about whether or not I feel anxious in social situations. (R)	.72	.08
8. I worry about not being able to control social anxiety. (R)	.70	.18
9. I can move toward important goals, even when I am feeling socially anxious.	.06	.70
10. My social anxiety must decrease before I can take important steps in my life. (R)	.47	.33
11. My social anxiety does not interfere with the way I want to live.	.29	.46
12. I find myself going around and around in circles thinking about my social anxiety. (R)	.76	.13
13. It seems like I'm fighting with myself about my social anxiety. (R)	.83	.09
14. I have thoughts about social anxiety that I get caught up in. (R)	.85	.05
15. I tell myself that I shouldn't have certain thoughts about social anxiety. (R)	.87	-.23
16. I criticize myself for having irrational or inappropriate social anxiety. (R)	.96	-.13
17. I believe that having socially anxious thoughts is abnormal or bad and I shouldn't think that way. (R)	.68	-.02
18. I make judgments about whether my thoughts about my social anxiety are good or bad. (R)	.77	-.13
19. I disapprove of myself when I feel socially anxious. (R)	.81	-.09

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; “R” in parentheses indicates a reverse scored item; Factor loadings greater than .35 are in bold.

The SA-AAQ compared to the AAQ-II. Of paramount importance to the present study was the question of whether the SA-AAQ is a better predictor of variability in social anxiety than the AAQ-II. To answer this question, several analyses were conducted. First, bivariate correlations were calculated to determine the differential relationships between the SA-AAQ, the AAQ-II, and several social anxiety measures. Next, these correlations were compared using the test outlined by Meng, Rosenthal, and Rubin (1992) to determine which measure of acceptance (SA-AAQ or the AAQ) is more strongly correlated with social anxiety. Finally, regression analyses were performed to examine the unique predictive ability of the SA-AAQ. The bivariate correlations are presented in Table 4. Although all correlations were significant, the relationships between the SA-AAQ and the social anxiety measures were of greater magnitude than the relationships between the AAQ-II and the same indices. The test developed by Meng and colleagues (1992) was used to compare these correlations. Results indicated that the SA-AAQ was correlated with the social anxiety measures with significantly greater magnitude than the AAQ with the same social anxiety measures ($z = -4.46$ to -2.46 , $p < .05$). These findings may indicate that the SA-AAQ is more sensitive than the AAQ-II with respect to social anxiety.

Table 4

Correlations between Acceptance and Social Anxiety Measures (N = 339)

	SA-AAQ	SPS	SIAS	LSAS	LSRDS
AAQ-II	.63*	-.54*	-.56*	-.42*	-.53*
SA-AAQ		-.70*	-.71*	-.57*	-.62*
SPS		-	.81*	.72*	.58*
SIAS			-	.77*	.57*
LSAS				-	.61*

Note. AAQ-II = Acceptance and Action Questionnaire – II; SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale; LSAS = Liebowitz Social Anxiety Scale; LSRDS = Liebowitz Self Reported Disability Scale.

* $p < .01$

Next, a hierarchical regression analysis was conducted to examine whether the SA-AAQ was a better predictor of social anxiety than the AAQ-II. The SPS was entered as the dependent variable, the AAQ-II was entered at Step 1, and the SA-AAQ was entered at Step 2. The AAQ-II significantly predicted social anxiety ($R^2 = .29, p < .01$), and the SA-AAQ was also a significant predictor of social anxiety above and beyond that of the AAQ-II (R^2 Change = .21, $p < .01$). These findings indicate that the SA-AAQ predicts variability within social anxiety above and beyond that of general acceptance, as assessed using the AAQ-II. See Table 5 for regression coefficients.

Table 5

Regression coefficients for hierarchical regression examining the SPS as the dependent variable (N = 339)

	B	SE B	
Step 1			
Constant	64.70	3.91	
Acceptance (AAQ-II)	-.98	.08	-.54*
Step 2			
Constant	71.09	3.33	
Acceptance (AAQ-II)	-.30	.09	-.17*
Acceptance of Social Anxiety (SA-AAQ)	-.38	.03	.59*

Note. SPS = Social Phobia Scale; AAQ-II = Acceptance and Action Questionnaire II ; SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire. * $p < .01$

SA-AAQ as distinct from social anxiety. In order to show that the SA-AAQ is not just another measure of social anxiety, correlations were examined and a series of regressions were run. With respect to the correlational analyses, as predicted, the SA-AAQ was significantly negatively correlated with all measures of social anxiety. All values ranged between $-.57$ and $-.71$. Correlations between the social anxiety measures were significant and positive, ranging from $.57$ to $.81$ (see Table 4 for values). Next, correlations were compared following the procedures set out by Meng and colleagues (1992) to determine whether the SA-AAQ is assessing a construct distinct from social anxiety. With the exception of the LSRDS, the social anxiety indices correlated at a significantly higher magnitude with one another than they did with the SA-AAQ ($z = -7.05$ to $-4.13, p < .01$). The relationship between the LSRDS and the SA-

AAQ was not significantly different from the relationships between the LSRDS and the other social anxiety measures. This may be due in part by the nature of the LSRDS. It assesses impairment in different domains, such as asking how much social anxiety interferes with daily life, as opposed to the other measures (SPS, SIAS, LSAS), which assess distress associated with social anxiety. Despite this, these findings add support that the SA-AAQ is not merely assessing social anxiety. Had the SA-AAQ been solely a measure of social anxiety, it is likely that the correlations between it and the other social anxiety measures would not have significantly differed in magnitude.

A hierarchical regression analysis was conducted to provide additional support that the SA-AAQ is not merely a measure of social anxiety. The dependent variable was the SA-AAQ and the independent variables were a social anxiety measure¹ (the SPS) that was entered on Step 1, and a measure of trait acceptance (the AAQ-II) was entered on Step 2. After controlling for social anxiety, which significantly predicted distress ($R^2 = .48, p < .01$), levels of trait acceptance contributed an additional amount of the variance (R^2 Change = .09, $p < .01$) beyond that of social anxiety. These findings indicate that the SA-AAQ may be assessing a construct beyond that of social anxiety, as the inclusion of the AAQ-II in the model significantly predicts additional variance. Regression coefficients for this analysis are presented in Table 6.

Table 6

Regression coefficients for hierarchical regression examining the SA-AAQ as the dependent variable (N = 339)

	B	SE B	
Step 1			
Constant	119.58	1.40	
Social Anxiety (SPS)	-1.07	.06	-.70*
Step 2			
Constant	66.72	6.29	
Social Anxiety (SPS)	-.77	.07	-.50*
Acceptance (AAQ-II)	1.02	.12	.36*

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; AAQ-II = Acceptance and Action Questionnaire II. $p < .01$

Another regression was conducted to examine whether the SA-AAQ predicted distress associated with social anxiety beyond levels of social anxiety alone. This was done using a hierarchical regression where the dependent variable was distress associated with social anxiety (the LSRDS) and the independent variables were social anxiety (the SPS) which was entered on Step 1, followed by social anxiety symptom acceptance (the SA-AAQ) on Step 2. After controlling for social anxiety, which significantly predicted 33% of the variance ($p < .01$), the SA-AAQ significantly contributed an additional 10% of the variance ($p < .01$) beyond that of social anxiety. Regression coefficients are presented in Table 7.

¹ All hierarchical regressions were also conducted using the other social anxiety scales (SIAS and LSAS) and only marginal differences were found between those results and the results using the SPS.

Table 7

Regression coefficients for hierarchical regression examining the LSRDS as the dependent variable (N = 339)

	B	SE B	
Step 1			
Constant	3.06	1.11	
Social Anxiety (SPS)	.44	.05	.58*
Step 2			
Constant	29.86	4.90	
Social Anxiety (SPS)	.21	.06	.28*
Acceptance (SA-AAQ)	-.23	.04	-.43*

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; LSRDS = Liebowitz Self Reported Disability Scale.

* $p < .01$

To provide additional support for the findings of the previous regression, the same analysis was performed using the AAQ-II as the predictor in the second step. After controlling for social anxiety, which again significantly predicted 33% of the variance ($p < .01$), the AAQ-II significantly predicted only 8% of the variance ($p < .01$) beyond that of social anxiety. This supports the assertion that the SA-AAQ (which predicted 10% of the variance in the previous regression) is a better predictor of distress due to social anxiety.

Mindfulness, acceptance, and thought suppression. Correlations between the SA-AAQ and the other scales were computed to investigate the relationship between the newly developed measure and existing measures of general mindfulness. As predicted, the SA-AAQ was significantly positively correlated with the MAAS, the AAQ-II, and four of five subscales of the FFMQ. All values ranged between .30 and .63. See Table 8 for correlations.

Table 8

Correlations between SA-AAQ and Mindfulness Measures (N = 339)

	MAAS	AAQ-II	FFMQ_NR	FFMQ_OB	FFMQ_ACT	FFMQ_DES	FFMQ_NJ
SA-AAQ	.42*	.63*	.30*	-.01	.41*	.36*	.62*
MAAS	-	.41*	.20*	.03	.73*	.35*	.47*
AAQ-II		-	.34*	.02	.39*	.23*	.59*
FFMQ_NONREACT			-	.29*	.23*	.27*	.26*
FFMQ_OBSERVE				-	-.02	.26*	-.14*
FFMQ_ACTAWARE					-	.26*	.52*
FFMQ_DESCRIBE						-	.29*

Note. SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; MAAS = Mindful Attention and Awareness Scale; AAQ-II = Acceptance and Action Questionnaire II; FFMQ = Five Facet Mindfulness Questionnaire; NONREACT = Nonreactivity subscale of the FFMQ; FFMQ_OBSERVE =

Observe subscale of the FFMQ; FFMQ_ACTAWARE = Acting with Awareness subscale of the FFMQ; FFMQ_DESCRIBE = Describe subscale of the FFMQ; FFMQ_NONJUDGE = Nonjudging subscale of the FFMQ.* $p < .01$

It was also predicted that the SA-AAQ would be negatively associated with thought suppression. Correlations were also computed between the SA-AAQ and a measure of thought suppression, the White Bear Suppression Inventory. As predicted, there was a significant correlation between acceptance of social anxiety symptoms and thought suppression ($r = -.47, p < .01$). A regression analysis was conducted to investigate whether the SA-AAQ had unique predictive value for thought suppression, beyond that of social anxiety. This was completed using a hierarchical regression where the dependent variable was thought suppression (the WBSI) and the independent variables were social anxiety (the SPS) which was entered on Step 1, followed by the SA-AAQ on Step 2. After controlling for social anxiety, which significantly predicted 19% of the variance in impulsivity ($p < .01$), acceptance of social anxiety symptoms significantly predicted an additional 5% of the variance ($p < .01$) beyond that of social anxiety. See Table 9.

Table 9

Regression coefficients for hierarchical regression examining the WBSI as the dependent variable (N = 339)

	B	SE B	
Step 1			
Constant	43.07	.97	
Social Anxiety (SPS)	.38	.04	.44**
Step 2			
Constant	63.68	4.48	
Social Anxiety (SPS)	.19	.06	.22*
Acceptance (SA-AAQ)	-.17	.04	-.31**

Note. WBSI = White Bear Suppression Inventory; SA-AAQ = Social Anxiety – Acceptance and Action Questionnaire; SPS = Social Phobia Scale; LSRDS = Liebowitz Self Reported Disability Scale.* $p < .05$
** $p < .01$

Depression. It was predicted that correlations between the SA-AAQ and the BDI would be significant and negative, however at a lower magnitude than that of the SA-AAQ and the social anxiety measures. This hypothesis was partially supported. The correlation between the SA-AAQ and the BDI was significant and negative ($r = -.57, p < .01$), however its magnitude was similar to that of the SA-AAQ and other social anxiety measures which ranged from $-.57$ to $-.71$.

Discussion

The purpose of the second study was to provide support that the SA-AAQ is a valid measure of acceptance of social anxiety symptoms. Due to the questions concerning the factor structure that emerged in Study 1, another principal components analysis was conducted in order to further examine the nature of this instrument.

The results of this analysis provided a more clear interpretation of the factor structure; namely, that the valence of the items was responsible for the two-factor solution. More specifically, the negatively worded items (or reverse scored) loaded together to create factor one, and the positively worded items loaded together on factor two. Contrary to the findings in the previous study, there were no items that loaded on more than one factor, which further supports the idea that a two-factor solution was merely a method effect. As discussed earlier, both the Body Image - Acceptance and Action Questionnaire

(Sandoz, 2010) and the Acceptance and Action Questionnaire – II (Bond et al., 2008) report similar method effects causing a two-factor solution. Thus, based on these findings, the SA-AAQ has been determined to be one-factored.

An important question in the present study was whether it could be determined if the SA-AAQ was more sensitive to social anxiety than the AAQ-II. In correlational analyses, measures of social anxiety had relationships of higher magnitude with the SA-AAQ than the AAQ-II. This demonstrates that the SA-AAQ may be more sensitive in the context of social anxiety than the measure of decontextualized general acceptance. Using a hierarchical regression, it was also demonstrated that the SA-AAQ predicted a significant amount of variability in a measure of social anxiety above and beyond that of the AAQ-II. This suggests that the SA-AAQ may outperform the AAQ-II in assessing acceptance specific to social anxiety contexts. In sum, these findings support the use of the SA-AAQ as an index of contextualized acceptance specific to social anxiety; and thus, may be a better tool for assessing acceptance of social anxiety symptoms than a more general measure could be. Additional clinical research may further support the use of the SA-AAQ, such as examining both the SA-AAQ and the AAQ-II as mechanisms of change across treatment for social anxiety.

Correlations between the SA-AAQ and the other measures in this study were predominantly in the hypothesized direction. As predicted, the SA-AAQ and measures of mindfulness were positively related such that higher levels of acceptance of social anxiety were associated with higher levels of general mindfulness. This provides support that the SA-AAQ is measuring a construct related to general mindfulness. The results of correlational analyses provide support that the SA-AAQ is strongly related to both social anxiety and mindfulness separately; however, regressions indicate that the SA-AAQ is unique to each of these. In addition, there was a significant negative correlation between the SA-AAQ and a measure of thought suppression, the WBSI. Thought suppression can be seen as an indicator of a lack of acceptance; therefore, the finding that increased SA-AAQ scores are related to decreased thought suppression adds weight to the notion that the SA-AAQ is indeed measuring acceptance. Similarly, the SA-AAQ was negatively related to measures of social anxiety, indicating that higher levels of acceptance of social anxiety symptoms is associated with lower levels of self-reported social anxiety symptoms. However, correlations between the SA-AAQ and measures of social anxiety were of a lower magnitude than correlations among the social anxiety measures, adding support that the SA-AAQ is not merely a measure of social anxiety. Taken together, these correlational analyses indicate that the SA-AAQ is assessing a construct related to both general mindfulness and social anxiety, supporting the validity of this measure.

Contrary to predictions, the magnitude of the correlation between the SA-AAQ and the BDI was similar to that between the SA-AAQ and measures of social anxiety. It was hypothesized that the correlation with the BDI would be a smaller magnitude due to the nature of the newly developed SA-AAQ. The SA-AAQ was designed to assess acceptance of social anxiety symptoms rather than acceptance of depressive symptoms. However, psychological literature repeatedly demonstrates that social anxiety and depression are highly related (Brown & Barlow, 1992; Kessler et al., 1994). Therefore, it is not surprising that these correlations were found to be similar.

Finally, it was important to examine in greater depth whether the SA-AAQ was assessing a construct beyond that of social anxiety. Using the SA-AAQ as the dependent variable in a hierarchical regression, and entering a measure of social anxiety at step one and entering a measure of general acceptance at step two, results supported that this newly created instrument does in fact assess a construct which is predicted by both social anxiety and general acceptance. Thus, the prediction that this measure is assessing the intended construct was supported. Moreover, additional regressions examining the SA-AAQ as an independent variable, or predictor, also indicate that the newly developed measure is a valid instrument. The analyses indicated that the SA-AAQ significantly predicted general acceptance (as

measured by the AAQ-II) and social anxiety related disability (as measured by the LSRDS) beyond that which was predicted by social anxiety alone.

In sum, upon examination of the correlational and regression analyses, there is support that the SA-AAQ is a valid instrument for assessing acceptance specific to social anxiety symptoms.

General Discussion

The purpose of the present investigation was to develop a measure of acceptance specific to social anxiety symptoms. The need for such an instrument was based on the paucity of complaint-specific acceptance measures. Further, the necessity of such a measure is predicated by the notion that the assessment of acceptance is difficult when it is decontextualized. Hayes (2008) has stated that individuals do not avoid abstract concepts such as “emotions” or “thoughts”; rather, they avoid such concepts in relation to particular contexts. An example of this may be thoughts of avoidance pertaining to potentially socially evaluative situations in the case of social anxiety. Hayes elaborates by stating that creating measures which are targeted to specific complaints may be necessary for researchers applying interventions such as ACT to their respective domains. Currently there are few domain-specific measures of acceptance and this was deemed a critical limitation within the area considering the growing number of researchers and clinicians investigating mindfulness and acceptance-based strategies within the context of certain complaints. Thus, the Social Anxiety – Acceptance and Action Questionnaire (SA-AAQ) was developed and evidence was gathered supportive of its validity in the current research.

Accordingly, the goal of Study 1 was to develop a measure that captured the constructs of nonjudgmental acceptance and action towards valued goals within the framework of social anxiety. The development of the SA-AAQ began with the creation and/or adaptation of items capturing the intended concepts of acceptance and action, based on ACT-consistent theory. Based on the definitions of acceptance and action used for the original AAQ (Hayes et al., 2004), an initial item pool was developed. Study 1 also provided an initial evaluation of the factor structure of this instrument. The results indicated a two-factor solution; however, this was thought to be caused by a method effect whereby items of similar valence loaded together.

Following from the examination of the factor structure within the first study, one of the goals of Study 2 was to further clarify these findings. The results supported the hypothesis that a two-factor solution was indeed solely a method effect, and the SA-AAQ was determined to be a one-factor measure upon close examination of the factors. As mentioned, this effect has been seen not only in the acceptance domain (e.g., AAQ-II; Bond et al., submitted, and Body Image – Acceptance and Action Questionnaire; BI-AAQ; Sandoz, 2010) but also within other lines of psychological research (e.g., Rosenberg Self-Esteem Scale; Rosenberg, 1965). In addition, existing measures of mindfulness and social anxiety were administered concurrently to investigate the reliability and content validity of this newly created measure, and to compare this instrument to measures of related and unrelated constructs to evaluate construct validity. As hypothesized, the SA-AAQ was highly correlated with measures of mindfulness, acceptance and social anxiety, demonstrating that the SA-AAQ was measuring a construct related to these variables. Comparisons of correlations between the SA-AAQ, the AAQ-II, and measures of social anxiety indicated that the SA-AAQ may be a more sensitive measure of acceptance than the AAQ-II in the context of social anxiety. Regression analyses provided further support that this measure had a unique predictive ability beyond that of social anxiety, and of general acceptance, and was a valid and useful measure of social anxiety symptom acceptance.

After examining the findings of these current studies, there is support that the SA-AAQ is a reliable and valid one-factor measure of social anxiety symptom acceptance. This instrument can potentially be added to a growing list of domain-specific variants of the AAQ, such as the BI-AAQ

(Sandoz, 2010), the Acceptance and Action Diabetes Questionnaire (AADQ; Gregg, Callahan, Hayes, & Glenn-Lawson, 2007), the trauma specific AAQ (AAQ-TS; Braekkan, 2007) and the Voices Acceptance and Action Scale (VAAS; Shawyer et al., 2007). Additionally, the results provide support for the proposed theoretical model. Acceptance of social anxiety symptoms appears to be an important predictor of who may experience greater distress related to socially relevant contexts beyond that of social anxiety alone. This has direct implications for how the treatment of social anxiety may be approached differently. Researchers have already indicated that mindfulness and acceptance-based strategies are promising for the treatment of social anxiety (Bögels et al., 2006; Dalrymple & Herbert, 2007; Kocovski et al., 2009; Ossman et al., 2006). The SA-AAQ is a tool intended to assess processes of change in acceptance-based protocols. Thus, its use may lend support to the use of such treatments as it may verify their utility and demonstrate the mechanisms by which individuals achieve behavioral adjustment.

The development of the SA-AAQ and the evidence of its validity are not without limitations. The foremost consideration is that an undergraduate sample was used. The SA-AAQ was designed for use in diverse clinical applications; however the use of student participants limits the generalizability of this instrument. An obvious direction for future study is the use of this measure with a clinically socially anxious population in order to provide further support for its application in such a setting. Nevertheless, the student samples used contained many participants who could qualify as clinically socially anxious according to their scores on the SPS and the SIAS. Furthermore, the current sample had a mean AAQ-II score of 46.27 (SD = 6.93), which is within the values determined to be clinical cutoff scores for this measure in preliminary studies (M = 45-48; Bond et al., 2008). This indicates there is a possibility that half of the present sample reported a clinically significant level of nonacceptance; therefore, a sample with greater variability in the domain of acceptance is preferable for further study. An additional limitation is the inadequate variability of gender, age, education, and cultural diversity. It will be important to validate this measure using a diverse community sample before confidently administering the SA-AAQ to more heterogeneous populations. Additionally, replication with either nonclinical or clinical participants would provide a more rigorous evaluation of the SA-AAQ's validity and reliability.

Overall, the current research provides evidence that suggests that the SA-AAQ is psychometrically sound, and that it may have potential for application in clinical research and treatment. This measure could contribute greatly to the investigation of the utility of mindfulness and acceptance-based treatments for social anxiety, in addition to contributing to the larger body of research examining mechanisms of change within such protocols. This measure seems to be a timely addition to a growing body of work examining mindfulness and acceptance, especially considering that "third wave" interventions are becoming increasingly more common in both social and clinical psychological research.

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