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Mindfulness and Acceptance-Based Group Therapy for Social Anxiety Disorder: An Open Trial

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Mindfulness and Acceptance-Based Group Therapy (MAGT) for Social Anxiety Disorder (SAD) is based largely on Acceptance and Commitment Therapy (ACT; Hayes et al., 1999), with enhanced mindfulness mostly from Mindfulness-Based Cognitive Therapy (MBCT; Segal et al., 2002). The purpose of this study was to assess the feasibility and initial effectiveness of MAGT for the treatment of SAD. Forty-two SAD patients were invited to take part in an open trial of MAGT. Participants completed measures of social anxiety, mindfulness and acceptance, depression, and rumination at pretreatment, midtreatment (6 weeks), posttreatment (12 weeks), and at a 3-month follow-up session. Twenty-nine participants completed the treatment and these participants reported that the treatment was helpful. Effect sizes for treatment completers ranged from 1.00 to 1.17 for the social anxiety symptom measures at follow-up. Intent-to-treat analyses revealed significant reductions in social anxiety, depression, and rumination and significant increases in mindfulness and acceptance, with effect sizes ranging from .65 to .76 on the social anxiety measures. This study demonstrates that MAGT is feasible and acceptable to SAD patients and provides further support for the use of mindfulness and acceptance-based interventions for the treatment of SAD.

Social anxiety disorder (SAD) is a chronic condition characterized by a persistent fear of negative evaluation in social and/or performance situations, as well as avoidance of and/or distress in the feared situations, and it is a very common disorder, representing the fourth most common mental health diagnosis (Kessler, Berglund, Demler, Jin, & Walters, 2005). Despite considerable evidence for the efficacy of Cognitive Behaviour Therapy (CBT) for SAD, there is significant room for improvement (Heimberg, 2002; Huppert, Roth, & Foa, 2003; Rodebaugh, Holaway, & Heimberg, 2004; Rowa & Antony, 2005). Hofmann and Bögels (2006) estimated that 40% to 50% of SAD patients treated with conventional CBT show minimal improvement. A recent study found that following treatment with Cognitive Behavioral Group Therapy (CBGT; Heimberg & Becker, 2002), patients with SAD still reported considerable dissatisfaction with their lives (Eng, Coles, Heimberg, & Safren, 2005). Refinement of existing CBT interventions is one current approach to improving psychological treatment for SAD (e.g., Clark et al., 2006; Hofmann & Scepkowski, 2006; Huppert et al., 2003; Voncken & Bögels, 2006), while another current approach is the exploration of mindfulness and acceptance interventions (Bögels, Sijbers, & Voncken, 2006; Herbert & Cardaciotto, 2005). The present research focuses on the latter approach, as has been done in other areas of psychopathology (e.g., Roemer & Orsillo, 2005; Segal, Williams, & Teasdale, 2002; see Baer, 2003; and Hayes, Luoma, Bond, Masuda, & Lillis, 2006, for reviews).

The primary aim of the present study was to evaluate the feasibility and initial effectiveness of a new group intervention for SAD that utilizes acceptance, mindfulness, and exposure strategies adapted from Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) and from Mindfulness-Based Cognitive Therapy (MBCT; Segal et al., 2002). There are similarities and overlap in ACT and MBCT. Being present (or mindful) is one of the core processes of ACT, and the developers of ACT suggested a homework assignment of "practicing awareness of experience" (Hayes et al., 1999, pp. 178–179), although they also referred to mindfulness training as one of "a number of techniques other than ACT" (p. 62). More recently, others have increased the emphasis of mindfulness within ACT, notably Eifert and Forsyth (2005), who also adapted exercises from MBCT for use in the area of anxiety disorders. They suggested 5 minutes of practice in most sessions and recommended assigning acceptance practice (similar to mindfulness practice) based on written instructions, rather than audio-

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recordings. In the present study, mindfulness training played a much larger role in the treatment sessions and homework assignments.

Therapeutic strategies from ACT and MBCT were chosen to target the core attentional, cognitive, and behavioral processes that have been shown to maintain SAD. Although these processes were originally identified within a cognitive behavioral model (Clark & Wells, 1995; Rapee & Heimberg, 1997), they can also be conceptualized within a mindfulness and acceptance framework. Attentional processes include heightened *self-focus* on public aspects of the self such as visible physical symptoms of anxiety (e.g., blushing, sweating, trembling, etc.) and social performance, as well as *external focus* on potential threat (such as signs of disapproval from others) (see Bögels & Mansell, 2004, for a review). Cognitive processes include anxious rumination before (i.e., anticipatory processing), during, and after (i.e., post-event processing) social situations with a tendency to dwell on the likelihood of being negatively evaluated by others. Behavioral processes include overt and subtle avoidances (i.e., safety behaviors) that are engaged in to reduce anxiety and negative evaluation. These processes interact to maintain social anxiety.

Mindfulness and Acceptance Approach to Social Anxiety

Within a mindfulness and acceptance framework the narrow and evaluative attentional processes in SAD can be seen as the antithesis of paying "mindful attention," which has been defined as "paying attention in a particular way—on purpose, in the present moment and nonjudgmentally" (Kabat-Zinn, 1994, p. 4). Mindfulness practice in SAD patients involves focusing not just on how one is coming across in the situation, but to the full range of experience in the moment. Instead of judging one's experience, mindfulness practice encourages an attitude of acceptance and allowing towards physical sensations, feelings, and thoughts.

Within the ACT model of psychopathology, the concept of cognitive fusion addresses cognitive processes in SAD. Cognitive fusion is "the tendency of human beings to get caught up in the content of what they are thinking so that it dominates over other useful sources of behavioural regulation" (Luoma, Hayes, & Walser, 2007, p. 13). In SAD, fusing with thoughts about negative evaluation can be seen to fuel avoidance behaviors. Cognitive defusion strategies are employed to help clients see thoughts as what they are—events in the mind—so that they can be responded to in terms of their workability given the client's values, rather than in terms of their literal meaning (Luoma et al.).

Finally, the concepts of experiential avoidance and lack of valued actions within the ACT model can be seen to address the behavioral processes in SAD. Experiential avoidance is "the attempt to control or alter the form, frequency, or situational sensitivity of internal experiences (i.e., thoughts, feelings, sensations, or memories), even when doing so causes behavioral harm" (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996, as cited in Luoma et al., 2007, p. 11). In SAD, experiential avoidance is manifested in avoidance and subtle avoidance behaviors, which lead to impairment in all aspects of life for SAD individuals (e.g., relationships, career, health, etc.). Further, acceptance can be viewed as a moderator of the relationship between social anxiety and behavioral disruption, with low levels of acceptance leading to attempts to control the anxious thoughts and feelings, with significant behavioral disruption (Herbert & Cardaciotto, 2005). Conversely, with high levels of acceptance of social anxiety, a person would simply note any anxious thoughts and feelings and not try to control or avoid them, thus leading to minimal behavioral disruption. In the mindfulness and acceptance approach, the emphasis is on reversing the costs of avoidance and living a richer, more meaningful life. This is accomplished by making commitments to work toward valued goals, while choosing willingness to accept anxiety in the moment.

Empirical Support for the Use of Acceptance and Mindfulness Interventions for SAD

There is empirical support for the use of ACT with a variety of conditions, including depression and anxiety disorders (Hayes et al., 2006). ACT has been tailored for use with patients with anxiety disorders (Eifert & Forsyth, 2005) and for SAD in particular (Herbert & Dalrymple, 2004), and there is preliminary evidence for the use of ACT in SAD as an individual intervention (Dalrymple & Herbert, 2007) and as a group intervention (Ossman, Wilson, Storaasli, & McNeill, 2006). Dalrymple and Herbert conducted an open trial of an individual ACT intervention for SAD in a sample of 19 patients and obtained large effect sizes on measures of social anxiety, quality of life, valued living, and experiential avoidance, and had low attrition, supporting the continued investigation of ACT for SAD. Using an ACT group intervention, Ossman and colleagues (2006) also found significant improvements in social anxiety, experiential avoidance, and valued living, but had a high rate of attrition (i.e., only 12 of 22 participants attended at least 7 of 10 group sessions). Data on reasons for dropping out were not collected; however, among the several reasons speculated by the authors was their liberal inclusion criteria, namely that participants could meet criteria for either generalized or discrete SAD and they only needed to have a score on the Social Phobia and Anxiety Inventory (Turner, Beidel, Dancu, & Stanley, 1989) in the mild range. As such, it is difficult to compare this study with other SAD

group intervention studies and further research on the use of ACT in a group format is warranted.

ACT contains a mindfulness component; however, other interventions more strongly focus on mindfulness training as the core intervention. Two studies have examined the use of mindfulness interventions with SAD (Bögels et al., 2006; Koszycki, Benger, Shlik, & Bradwejn, 2007). Bögels and colleagues (2006) conducted a pilot group intervention that incorporated MBCT (Segal et al., 2002) in addition to task concentration training. Seven of nine treatment completers no longer met criteria for SAD post-intervention and treatment gains were maintained at a 2-month follow-up, thus supporting the continued investigation of mindfulness interventions for SAD. More recently, Koszycki and colleagues (2007) completed a randomized controlled trial comparing CBGT (Heimberg & Becker, 2002) and Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1990). While patients in both groups achieved similar levels of improvement on measures of disability and quality of life and large within-group social anxiety effect sizes, those in CBGT showed greater reductions in social anxiety. This is a remarkable finding for the MBSR group on three accounts: there was no explicit exposure component; the MBSR instructor was not a mental health professional and had no experience treating SAD patients; and finally, although the authors outlined a plausible rationale for using mindfulness with SAD, this conceptualization was not shared with the participants. With regard to this final point, the developers of MBCT (Teasdale, Segal, & Williams, 2003; see also Kocovski, Segal, & Battista, 2009) have cautioned against applying mindfulness training without adequately understanding the processes involved in the disorder to be treated and how mindfulness might positively impact those processes. As an integral part of this problem formulation approach they advocate sharing the conceptualization with clients and reinforcing it during the mindfulness practices. Additionally, Teasdale and colleagues recommend the integration of mindfulness training into more comprehensive theory-driven interventions. The present study adopted such a problem formulation, integrative approach.

Individual vs. Group Therapy for SAD

Mindfulness interventions (e.g., MBSR, MBCT) tend to be delivered in a group format while ACT is delivered both individually and in group format (Walser & Pistorello, 2004). As far as the efficacy of individual versus group treatments for SAD, earlier studies found that individual and group CBT were equally effective (Scholing & Emmelkamp, 1993; Wlazlo, Schroeder-Hartwig, Hand, Kaiser, & Münchau, 1990). However, more recently there has been support for the enhanced efficacy of individual cognitive therapy, specifically Clark's individual cognitive therapy program (Clark et al., 2003, 2006), compared to a group version of the same treatment (Stangier, Heidenreich, Peitz, Lauterbach, & Clark, 2003). While both forms of therapy were effective in reducing levels of social anxiety, the individual format resulted in significantly greater reductions than the group format, leading the authors to speculate that the group format did not allow for enough individualized attention, which may be necessary to challenge strongly held idiosyncratic beliefs. Clark and colleagues (2006) acknowledge that the individual cognitive therapy program is resource intensive (i.e., requires 90-minute individual therapy sessions, video camera for video feedback, use of confederates) and therefore some mental health clinics may not be able to provide the treatment. In addition to cost-effectiveness, there are a number of other possible advantages to group therapy for SAD, namely, social support from other group members, naturalistic exposure to groups, and the availability of group members for in-session exposure exercises (Heimberg & Becker, 2002). As such, even though more recent research supports the use of individual rather than group treatment for SAD, the practical and economic considerations warrant the continued development of group therapy approaches for SAD. Mindfulness training and ACT lend themselves nicely to group formats.

Present Study

The primary aim of the present study was to evaluate the feasibility and initial effectiveness of Mindfulness and Acceptance-Based Group Therapy (MAGT) for SAD in five pilot groups. MAGT is a combination of mindfulness, acceptance, and exposure strategies based in large part on ACT (Hayes et al., 1999) with enhanced mindfulness adapted from MBCT (Segal et al., 2002) and MBSR (Kabat-Zinn, 1990). As reviewed above, there is support for the use of ACT and mindfulness interventions with SAD patients. While MAGT has many similarities with previously evaluated mindfulness and ACT interventions, it is unique in its integration of ACT and enhanced mindfulness strategies in a group format. Therefore, prior to conducting a randomized controlled trial, it was necessary to evaluate whether this particular form of treatment is feasible and acceptable to patients and whether reductions in social anxiety are of a similar magnitude as obtained with other SAD treatments. With respect to effectiveness, it was hypothesized that MAGT would result in decreased social anxiety, increased mindfulness and acceptance, and decreased rumination, and that these gains would be maintained at follow-up. Participants were assessed at pre-, mid-, and posttreatment, as well as at a 3-month follow-up so that the pattern of change could be examined. A final aim of the present study was to examine

whether mindfulness, acceptance, and rumination may represent mechanisms of change.

Method

Participants

This study was approved by the local Research Ethics Board and participants provided informed consent. Participants (N=42; 29 women, 13 men) were outpatients of an anxiety disorders clinic of a university-affiliated psychiatric hospital in a large city who met *DSM-IV* criteria for primary SAD, Generalized. The mean duration of SAD was 22.33 years (SD=13.00, n=39, data on duration was missing for 3 participants). Exclusion criteria were current primary major depressive episode, current substance abuse or dependence, primary obsessive-compulsive disorder, psychotic symptoms, mania, and significant suicide ideation. Inclusion and exclusion criteria were determined by the Structured Clinical Interview for DSM (SCID; First, Spitzer, Gibbon, & Williams, 1994) mostly administered by the second author (psychiatrist), with some administered by the first author (psychologist). Additionally, some participants were administered the SCID by a well-trained psychology doctoral student (n=5) supervised by the first or second author. All three clinicians were SCID trained prior to the present study and as part of that training observed videotapes, observed or were observed on 5 to 10 SCIDs, and had reliable ratings prior to conducting independent SCIDs.

As this was a completely new treatment approach in the clinic it was decided not to offer it as a first-line treatment until the feasibility and acceptability of the approach had been examined with patients who had already received the current gold-standard psychological treatment, namely CBT. Therefore, the first group consisted of patients (n=10) who had not responded to a course of group or individual CBT for SAD in the year prior to the study. Nonresponse was defined as continuing to meet criteria for primary generalized SAD. Additionally, participants had to report they would be willing to complete daily homework. Eight patients had received group CBT based largely on the Clark and Wells (1995) model (from two different groups). One patient had been treated individually following the Clark and Wells model. Finally, 1 patient had been treated with CBGT (Heimberg & Becker, 2002). The remaining 32 patients were recruited from psychiatric consultations within the clinic and had not received CBT in the past year. There were five groups that ranged in size from 8 to 10 participants. Of the people who were eligible for the study following a SCID, only 3 people declined to participate in the study: 2 decided to seek CBT and 1 did not give a reason.

With respect to demographic information, participants ranged in age from 18 to 63 years (M=34.17, SD=11.03). Most participants were White (n=35), 3 were Black, 3 were Asian, and the remaining participant reported being of mixed ethnicity. Most participants were employed (n=28) and the remaining participants reported being students (n=7), unemployed (n=4), retired (n=2) and on disability (n=1). With respect to marital status, most participants reported being single (n=27), some were married (n=9) or cohabiting (n=5), and 1 participant was divorced. Most participants were taking psychotropic medications (e.g., paroxetine, venlafaxine, fluoxetine, fluvoxamine, sertraline, clonazepam, lorazepam), the dosages of which were not adjusted 3 months prior to the study or during the study. Additionally, participants were asked to refrain from receiving other treatments while in the trial.

The most common comorbid diagnosis was depression, with over half of the participants reporting either current or past depression. Comorbid mood disorder diagnoses for the sample were past major depression (n=10), secondary current major depression (n=8), major depression in partial remission (n=5), bipolar disorder (n=2), current dysthymia (n=1), and past dysthymia (n=1). Comorbid anxiety disorders included secondary generalized anxiety disorder (n=5), secondary OCD (n=4), specific phobia (n=2), and past panic disorder (n=1). Finally, 3 participants met criteria for past substance abuse.

Measures

Social anxiety. Four standardized self-report measures of social anxiety were used, all with adequate psychometric properties, to allow for the assessment of different aspects of social anxiety and also so that the results of the present study can be more easily compared with past and future SAD trials. The Liebowitz Social Anxiety Scale (LSAS; Liebowitz, 1987) is a 24-item scale assessing ratings of fear and avoidance of a range of social situations. Although originally developed as a clinician-rated measure, Baker, Heinrichs, Kim, and Hofmann (2002) have reported data supporting its use as a self-report instrument. The Social Phobia Scale (SPS; Mattick & Clarke, 1998) is a 20-item scale widely used to assess fears of being observed by others during routine activities. The Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998) is a 20-item measure developed in conjunction with the SPS to assess anxiety in social interaction situations. Brown and colleagues (1997) found support for the discriminant validity of the SPS and SIAS in that social phobia patients scored higher on both scales compared to patients with other anxiety disorders and healthy controls. They also found support for the convergent validity of the SPS and SIAS as scores on these measures were moderately related to clinician-rated symptom severity.

The Social Phobia Inventory (SPIN; Connor et al., 2000) is a 17-item self-report measure of fear and avoidance of a range of social situations and of physiological symptoms of anxiety. The SPIN has been validated for use in clinical populations, has strong convergent and divergent validity, and good internal consistency and test-retest reliability (Radomsky et al., 2006).

Depression. The Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996) is a commonly used 21-item measure for the assessment of the severity of symptoms of depression in the past week. There is considerable validity and reliability data on this measure across various populations (Beck et al., 1996).

Mindfulness and acceptance. Two measures of mindfulness were used in the present study, one of which measures mindfulness as a unitary construct focusing on awareness, while the second takes a multifaceted approach to the assessment of mindfulness. The Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003) is a 15-item self-report measure of the general tendency to be attentive to and aware of present-moment experiences in daily life. Test-retest reliability of 4 weeks and internal consistency were very good. The scale differentiates mindfulness practitioners from others and was negatively correlated with rumination and social anxiety. In a study of cancer patients, increases in scale scores over the course of MBSR predicted decreases in two indicators of psychological disturbance (Carlson & Brown, 2005). The Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004) is a 39-item scale that assesses four aspects of mindfulness consistent with the conceptualization of mindfulness within Dialectical Behavior Therapy (Linehan, 1993): observing, describing, acting with awareness, and accepting without judgment. It has good internal consistency and test-retest reliability.

Acceptance was assessed with the 16-item version of the Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004). The AAQ has two subscales, the Willingness scale, which assesses "willingness to experience internal events," and the Action scale, which assesses "ability to take action, even in the face of unwanted internal events" (Bond & Bunce, 2003, p. 1060). Acceptable internal consistency and test retest reliability were found. As well, higher scores predicted better mental health and job performance 1 year later in a work place sample (Bond & Bunce). In the present study, the AAQ was scored such that higher scores reflect greater acceptance (or less experiential avoidance).

Rumination. The Reflection-Rumination Questionnaire–Rumination subscale (RRQ-R; Trapnell & Campbell, 1999) is a 12-item self-report instrument that assesses the tendency to rehash or evaluate past events and to dwell on unwanted thoughts about the self. It has excellent internal consistency.

All of the above measures were administered at four points in time: pretreatment, midtreatment (6 weeks), posttreatment (12 weeks), and follow-up (3 months posttreatment). Alpha reliabilities were generally excellent for all measures in the present study (ranging from .86 to .93 at baseline) with the exception of the AAQ, which had an alpha of .70 at baseline. Related to the first group of 10 patients who completed CBT prior to the present study, four of the above measures had also been administered pre- and post-CBT: the LSAS, SPS, SIAS and BDI.

MAGT-specific measures. Homework record forms were distributed at the end of each group session for participants to record daily homework, including the duration (in minutes) of mindfulness homework. Additionally, a feedback questionnaire was administered posttreatment, which asked participants to rate the helpfulness of each component of MAGT on a 5-point Likert scale (from "not at all helpful" to "extremely helpful").

Therapists

The first two authors were cotherapists for all five groups, a psychologist and psychiatrist, respectively. Both received formal training in ACT and MBCT and one additionally in MBSR (second author). The MBCT and MBSR training both involved 7-day intensive workshops offered by the treatment developers. The second author also observed one full MBCT group. The ACT training involved several introductory and advanced experiential workshops (ranging from a few hours to 2 days) offered locally and at the ACT summer institutes. At the start of this open trial, both therapists had less than a year of experience in delivering these interventions. Both also had experience in conducting individual and group CBT for SAD.

Therapy Protocol

There were 12 two-hour group sessions and 1 follow-up session 3 months posttreatment. For the most part, the first hour of each session consisted of a specific mindfulness practice plus review of homework. In the second hour, ACT concepts were introduced using metaphors and experiential exercises (Sessions 2–6) or ACT-consistent exposure exercises were carried out (Sessions 7–12). Given that formal exposure to valued social situations did not begin until Session 7, it was of particular interest to examine any change that might have occurred prior to then (i.e., by the midpoint assessment).

Session 1: Socialization to the model. After introductions, housekeeping items, and a mindful eating exercise, the focus of the first session was on providing an explanation of the model of factors that maintain social anxiety and describing the components of treatment. This model represents an integration of social anxiety research and

theory (e.g., Clark & Wells, 1995) and mindfulness and ACT processes. For example, the therapists described control strategies (i.e., safety behaviors) as being key factors in the maintenance of SAD and explained the relevant intervention as working to cultivate an acceptance of social anxiety in the moment, rather than using strategies aimed at controlling social anxiety. Avoidance was identified as the ultimate control strategy—one that interferes significantly with the pursuit of one's life goals. Clients were told that time would be spent in therapy identifying values and goals, and that keeping values at the forefront is an important step in engaging in anxiety-provoking activities. The therapists identified the elevated self-focused attention found among patients with SAD and described the intervention of paying mindful attention to all aspects of the situation. Therapists also described the negative self-image found among patients with SAD, defining the intervention as cultivating an acceptance of self as is. Finally, the therapists described developing a different relationship to thoughts that occur before, during, and after social events. The mindfulness practice was described as one way in which clients would practice acceptance of social anxiety thoughts, images, feelings, and physical sensations.

Mindfulness exercises. Most of the mindfulness exercises were adapted from Segal and colleagues (2002), starting with the basics of paying mindful attention to taste, sound, sight, breathing, and awareness of the body in stillness and when stretching, and progressing to mindful awareness of thoughts and emotions. Following Roemer and Orsillo (2005), the mountain meditation (Kabat-Zinn, 1994) was introduced to encourage a transcendent sense of self. An acceptance of social anxiety meditation, adapted from Eifert and Forsyth (2005), included instructions to bring to mind a specific feared social situation and allow any associated anxious thoughts and/or physical sensations to be present without judging them or needing them to be any different. Given that homework consisted of other components (see below) and not just mindfulness practice, it was decided that the mindfulness practices assigned for homework would be shorter than is typical for MBCT. Participants were typically assigned 15 minutes of daily mindfulness homework, including formal practice using CDs, which were recorded by the therapists, and informal mindfulness of daily activities such as eating, showering, and walking. From Session 7 onward, participants were encouraged to find a daily mindfulness practice that they could stick with after termination of treatment.

ACT exercises. ACT exercises and metaphors were adapted from Hayes and Smith (2005) and Eifert and Forsyth (2005). Two sessions (Sessions 2 and 5) were devoted to the unworkability of experiential control with willingness to experience anxiety as the alternative. One session was used to clarify values and goals (Session 3). Participants came up with lists, similar to the hierarchy of feared situations used in CBT, except they identified activities that reflected their valued goals and that would allow them to practice willingness to experience anxiety, starting with activities that would be easiest to do and progressing to the most difficult. One session (Session 4) was about gaining distance/defusing from anxious thoughts through the use of exercises such as labeling ("I am having the thought that ..."), and replacing "but" with "and" ("I want to go to the party *and* I am anxious" replaces "I want to go to the party *but* I am anxious"). The group played "anxiety mind volleyball" with each group member taking turns at playing the roles of the thinker immersed in her thoughts (i.e., the volleyball tossed back and forth over her head while other group members shout anxiety thoughts such as "my opinion is stupid" and control thoughts such as "keep your opinion to yourself"), and the thinker observing her thoughts from a distance (i.e., same setup except standing away from the other players). ACT-consistent interoceptive exposure (Eifert & Forsyth, 2005) was carried out in Session 6 as a way of practicing willingness to experience physical sensations of anxiety. ACT-consistent exposure exercises were called "willingness exercises" to highlight their purpose of providing opportunities to practice being willing to experience anxiety while engaged in feared activities. In-session willingness exercises were adapted from Hayes (1987) and from Hayes and Smith (2005). Participants were assigned willingness exercises for homework from Session 7 onward.

Follow-up. Participants were asked to continue with mindfulness practice and willingness exercises during the 3 months posttreatment. At the follow-up session, barriers to practicing mindfulness and willingness exercises were addressed and long-term goals set.

Data Analysis

Two approaches to data analysis were planned: treatment completer analyses and intent-to-treat analyses. Given the goal of the present study was to examine the effectiveness of MAGT, the hypotheses were tested via the treatment completer analyses, for which repeated measures analyses of variance were planned for all variables with time as the within-subjects factor. Further, repeated contrasts were chosen so that for each measure each mean (except the baseline mean) could be compared with the previous mean (e.g., mean at midtreatment is compared with mean at pretreatment, mean at posttreatment is compared with mean at midtreatment, mean at follow-up is compared with mean at posttreatment), which is helpful for evaluating the pattern of change across treatment. For

the intent-to-treat analyses, last observation carried forward was the planned approach for dealing with missing data as a result of dropouts and *t*-tests were used to compare scores pre- and posttreatment on all variables. Finally, within-treatment effect sizes were calculated according to Cohen (1988) using pooled standard deviation estimates, and reliable change and clinically significant change were determined as per Jacobson and Truax (1991).

Results

Because the recruitment strategy differed for the first group compared to the rest of the groups, the first step in the analyses was to compare baseline scores for group one versus groups two through five. There were no significant differences on any of the baseline measures (e.g., on the SPS, Group 1: $M=36.60$, $SD=11.94$, Groups 2–5: $M=38.66$, $SD=13.88$) or demographic variables (e.g., Group 1 Age: $M=29.40$ years, $SD=8.24$, Groups 2–5 Age: $M=35.66$, $SD=11.48$) and as such, analyses reported below are for all groups combined. Additionally, the analyses reported below were repeated for group one alone and for groups two through five. These results were very similar to one another and to the results obtained with the whole sample as reported below.

Attrition

Of the 42 participants initially enrolled in the study, 29 (69%) were treatment completers and 13 (31%) were dropouts. The dropouts did not differ significantly from the treatment completers on the baseline measures. Four of the dropouts occurred in the first group, which took place shortly after participants completed CBT. Reasons for discontinuing treatment for these four participants included difficulty attending due to work commitments ($n=2$), decision to pursue individual therapy ($n=1$), and one participant did not provide a reason but it is noteworthy that her scores on the social anxiety symptom measures decreased by over 30% by the midpoint assessment. Other participants discontinued treatment due to illness ($n=1$), illness in the family ($n=1$), difficulty making the time commitment due to work and other factors ($n=4$), and preference to seek individual therapy ($n=1$). One participant only attended the first session and did not provide a reason, and similarly, one other participant did not provide a reason for discontinuing treatment.

Missing Data

Data were collected at four points in time. As for the baseline assessment, data were complete, with the exception of one participant who did not complete the RRQ. Data are available for 35 participants at midtreatment (28 of 29 treatment completers and 7 of 13 dropouts). Additionally, at midtreatment, 3 participants did not complete the RRQ and 1 participant failed to complete the BDI. At treatment completion, data are available for all 29 treatment completers, as well as 1 dropout, with no additional missing questionnaire data. At follow-up, 27 of the 29 treatment completers submitted the final questionnaire package and there were no additional missing questionnaire data. For cases where one questionnaire was missing at a single point in time, hot-deck imputation was used (Streiner, 2002). Hot-deck imputation was also used for the midtreatment assessment for the 1 treatment completer who did not complete that assessment. Last observation carried forward was used for the 2 treatment completers who did not complete the follow-up assessment and for the dropouts for the intent-to-treat analyses.

Treatment Completer Analyses

Table 1 presents means and standard deviations across all four time points for the treatment completers, as well as effect sizes at treatment completion and at follow-up, for all measures used in the present study. Table 2 presents this information for the subscales (i.e., LSAS, AAQ, and KIMS subscales).

Social anxiety. There were significant reductions in social anxiety across time, from baseline to follow-up for all four measures of social anxiety, including the LSAS, $F(3, 84)=33.43$, $p<.001$, the SPS, $F(3, 84)=30.47$, $p<.001$, the SIAS, $F(3, 84)=31.49$, $p<.001$, and the SPIN, $F(3, 84)=21.95$, $p<.001$. The pattern for all four measures of social anxiety was that there was a significant reduction by midtreatment [LSAS: $F(1, 28)=14.87$, $p<.01$, SPS: $F(1, 28)=20.32$, $p<.001$, SIAS: $F(1, 28)=21.64$, $p<.001$, SPIN: $F(1, 28)=10.87$, $p<.01$], a further significant reduction by posttreatment [LSAS: $F(1, 28)=38.15$, $p<.001$, SPS: $F(1, 28)=26.78$, $p<.001$, SIAS: $F(1, 28)=19.78$, $p<.001$, SPIN: $F(1, 28)=16.18$, $p<.01$], and then treatment gains were maintained at the 3-month follow-up, but there were no further gains [LSAS: $F(1, 28)=0.16$, $p=.69$, SPS: $F(1, 28)=0.41$, $p=.53$, SIAS: $F(1, 28)=0.00$, $p=.97$, SPIN: $F(1, 28)=0.65$, $p=.43$]. The fear and avoidance subscales of the LSAS demonstrated the same pattern of results (see Table 2). Effect sizes for the social anxiety measures ranged from 1.00 to 1.09 at treatment completion and from 1.00 to 1.17 at follow-up, indicating a large effect regardless of the social anxiety measure used.

Mindfulness and acceptance. There were significant increases in mindfulness across the assessment points as measured by the KIMS, $F(3, 84)=14.87$, $p<.001$, and the MAAS, $F(3, 84)=13.50$, $p<.001$. There was also a significant increase in acceptance, representing a decrease in experiential avoidance, $F(3, 84)=14.87$, $p<.001$. The pattern of change across time was such that scores on the KIMS and AAQ increased significantly at

Table 1
Treatment Completers: Means, Standard Deviations, and Effect Sizes for all Measures (n = 29)

Scale	Descriptive Statistics								Effect Sizes	
	Baseline		Mid-Treatment		Post-Treatment		Follow-up		Post-Treatment	Follow-up
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
LSAS	81.95_a	17.43	74.00_b	16.36	64.10_c	18.12	63.21_c	20.00	1.00	1.00
SPS	39.45_a	11.78	33.97_b	11.46	27.00_c	10.95	25.93_c	11.30	1.09	1.17
SIAS	54.14_a	12.24	47.86_b	11.91	41.03_c	13.32	40.97_c	13.93	1.03	1.00
SPIN	42.31_a	11.89	36.90_b	10.17	30.66_c	10.98	29.41_c	13.32	1.02	1.02
AAQ	56.55_a	9.36	62.07_b	9.08	66.72_c	11.53	68.44_c	10.91	.97	1.17
KIMS	103.97_a	15.31	111.28_b	17.02	116.21_c	16.85	118.14_c	19.36	.76	.81
MAAS	3.35_a	.81	3.41_a	.80	3.82_b	.84	3.89_b	.71	.57	.71
BDI	18.10_a	11.12	14.07_a	9.69	8.59_b	7.96	10.38_b	8.26	.98	.79
RRQ	51.31_a	5.42	46.28_b	6.83	43.90_c	7.74	43.07_c	9.67	1.11	1.05

Note. Means in the same row that do not share subscripts are significantly different from one another ($p < .05$). LSAS = Liebowitz Social Anxiety Scale, SPS = Social Phobia Scale, SIAS = Social Interaction Anxiety Scale, SPIN = Social Phobia Inventory, AAQ = Acceptance and Action Questionnaire, KIMS = Kentucky Inventory of Mindfulness Skills, MAAS = Mindful Attention Awareness Scale, BDI = Beck Depression Inventory, RRQ = Rumination subscale of the Reflection-Rumination Questionnaire.

mid-treatment [KIMS: $F(1, 28) = 9.50$, $p < .01$, AAQ: $F(1, 28) = 12.53$, $p < .01$] and increased further at posttreatment [KIMS: $F(1, 28) = 8.85$, $p < .01$, AAQ: $F(1, 28) = 10.52$, $p < .01$] and then gains were maintained at follow-up [KIMS: $F(1, 28) = 0.98$, $p = .33$, AAQ: $F(1, 28) = 1.63$, $p = .21$]. There was a difference with the MAAS in that midtreatment scores were not significantly different from baseline scores, $F(1, 28) = 0.33$, $p = .57$, but there was a significant increase from midtreatment to posttreatment, $F(1, 28) = 29.65$, $p < .001$, and treatment gains were maintained at follow-up, $F(1, 28) = 0.80$, $p = .38$. The pattern of change was similar for the two subscales of the AAQ, willingness and action (see Table 2). Effect sizes were medium to large for mindfulness and acceptance.

Looking next at the facets of mindfulness as measured by the KIMS, there were differences across the facets (see Table 2). First, the Observe subscale did not change significantly across the four time points, $F(3, 84) = 1.21$, $p = .31$, while there were significant increases in Describe, $F(3, 84) = 5.57$, $p < .01$, Act with Awareness, $F(3, 84) = 10.93$, $p < .001$, and Accept without Judgment, $F(3, 84) = 9.19$, $p < .001$. Looking more closely at the patterns of change, the Describe subscale scores increased significantly from midtreatment to posttreatment, $F(1, 28) = 6.02$, $p < .05$, but did not change significantly from baseline to midtreatment, $F(1, 28) = 1.86$, $p = .18$, or from posttreatment to follow-up, $F(1, 28) = 0.27$, $p = .61$. A similar pattern was evident for the Accept Without Judgment subscale, with the significant increase taking place from midtreatment to posttreatment, $F(1, 28) = 6.67$, $p < .05$, and no further change from posttreatment to follow-up $F(1, 28) = 0.93$, $p = .34$. However, there was a trend from pretreatment to midtreatment for the Accept Without Judgment subscale, $F(1, 28) = 3.55$, $p = .07$. There was a slightly different

Table 2
Treatment Completers: Means, Standard Deviations, and Effect Sizes for subscales (n = 29)

Scale	Descriptive Statistics								Effect Sizes	
	Baseline		Mid-Treatment		Post-Treatment		Follow-up		Post-Treatment	Follow-up
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
LSAS-Fear	44.59_a	8.71	39.97_b	9.12	35.69_c	10.06	35.53_c	10.86	.95	.92
LSAS-Avoid	37.36_a	10.44	34.04_b	9.09	28.41_c	9.55	27.67_c	10.47	.90	.93
AAQ-Will	22.52_a	5.09	24.86_b	6.16	27.59_c	6.89	28.83_c	6.62	.84	1.07
AAQ-Action	34.03_a	7.32	37.21_b	5.77	39.14_b	6.67	39.62_b	6.11	.73	.83
KIMS-Obs	36.21_a	7.87	37.86_a	7.09	37.86_a	5.55	38.21_a	7.54	.24	.26
KIMS-Desc	21.66_a	6.25	22.76_a	6.73	24.21_b	6.15	24.55_b	7.14	.41	.43
KIMS-Act	23.72_a	6.47	26.07_b	6.12	27.31_b	6.72	27.69_b	6.61	.54	.61
KIMS-Accept	22.38_a	6.01	24.59_a	6.47	26.83_b	6.32	27.69_b	7.45	.72	.78

Note. Means in the same row that do not share subscripts are significantly different from one another ($p < .05$). LSAS = Liebowitz Social Anxiety Scale, AAQ = Acceptance and Action Questionnaire, Will = Willingness, KIMS = Kentucky Inventory of Mindfulness Skills, Obs = Observe, Desc = Describe, Act = Act with Awareness, Accept = Accept without Judgment.

pattern for the Act With Awareness subscale with the significant change occurring from baseline to midtreatment, $F(1, 28) = 7.83$, $p < .01$, a trend from midtreatment to posttreatment, $F(1, 28) = 3.69$, $p = .07$, and no further change from posttreatment to follow-up, $F(1, 28) = 0.38$, $p = .54$.

Depression. There was a significant reduction in depression scores, $F(3, 84) = 11.31$, $p < .001$. The pattern was such that scores did not decrease significantly until the posttreatment assessment, $F(1, 28) = 10.86$, $p < .001$, and then gains were maintained at follow-up, $F(1, 28) = 2.09$, $p = .42$. There was a trend for a decrease at midtreatment, $F(1, 28) = 3.78$, $p = .06$.

Rumination. There was a significant reduction in rumination, $F(3, 84) = 18.57$, $p < .001$. The pattern was such that scores decreased significantly by midtreatment, $F(1, 28) = 17.73$, $p < .001$, decreased further at posttreatment, $F(1, 28) = 8.20$, $p < .01$, and then gains were maintained at follow-up, $F(1, 28) = 0.69$, $p = .42$. The effect size was large at posttreatment and at follow-up.

Treatment compliance. There were two indicators of treatment compliance: attendance and homework completion. Treatment completers attended an average of 10 (out of 12) sessions. With respect to homework, participants handed in weekly homework record forms on which they were asked to report on the number of minutes they spent on mindfulness practice, as well as other assigned tasks for that week. With respect to mindfulness practice, participants reported completing an average of 10 minutes of mindfulness meditation daily. Willingness exercises were assigned as part of homework from Weeks 7 through 11. Participants were asked to complete willingness exercises daily; however, on average, participants completed willingness exercises 3.7 days per week assigned. During the follow-up period, participants were asked to keep a record of their mindfulness practice each week and such data are available for 19 participants. The mean for formal mindfulness practice was 1.09 hours per week ($SD = 1.30$) and the mean for informal mindfulness practice was 2.39 hours per week ($SD = 3.91$).

The impact of homework completion across the 12 weeks of treatment, both mindfulness homework and the completion of willingness exercises, on outcome was examined. Homework completion was not significantly correlated with change in social anxiety symptoms. However, greater homework completion was significantly correlated with increased acceptance as measured with the AAQ ($r = .47$, $p = .01$ for days of willingness exercises; $r = .36$, $p = .056$ for mindfulness practice). The AAQ subscales were next examined separately and it appears that the correlation between the AAQ and homework completion was driven primarily by the Willingness subscale ($r = .51$, $p < .01$ for days of willingness exercises; $r = .40$, $p < .05$ for mindfulness practice) as the correlations between the Action subscale and homework completion were not significant. Homework completion was not correlated with mindfulness as assessed by the MAAS, and was only correlated with the Accept Without Judgment subscale of the KIMS ($r = .46$, $p = .01$ for willingness exercises; $r = .32$, $p = .089$ for mindfulness practice). Overall, it appears that the more homework participants completed, the more accepting of their experience they became, as measured by both the AAQ and the KIMS.

Reliable change. The SPS was used for the determination of reliable change (see Cox, Ross, Swinson, & Direnfeld, 1998, for data supporting treatment sensitivity for the SPS). Of the 29 treatment completers, 20 demonstrated reliable change at follow-up. Additionally, one of the dropouts demonstrated reliable change. Therefore, half of the original sample (21 of 42 participants) demonstrated reliable change at follow-up. Additionally, 2 participants were classified as having demonstrated reliable change at posttreatment, but their scores increased somewhat by follow-up and they no longer met criteria for reliable change. To ensure that these results were not specific to the SPS, reliable change was evaluated using SIAS data and very similar results were obtained.

Clinically significant change. For a participant to be classified as having made clinically significant change, Jacobson and Truax (1991) recommend that the patient demonstrate reliable change and have a score on the outcome measure that is within two standard deviations of the normal population. Using the community SPS data reported in Mattick and Clarke (1998), 18 of the 21 patients who demonstrated reliable change at follow-up were classified as having made clinically significant change, which represents 43% of the initial sample.

Feedback questionnaire. At the end of Session 12, participants rated how helpful the strategies were on a scale of 1 (*not at all helpful*) to 5 (*extremely helpful*). This questionnaire was submitted anonymously by all 29 treatment completers. The means for all items were in the moderately helpful to very helpful range. The mean rating for in-session mindfulness exercises was 4.07 ($SD = 0.84$), indicating that participants on average found the in-session mindfulness exercises to be very helpful. The mean ratings for the in-session work done on values, defusion, and exercises and metaphors to demonstrate the problem of control and willingness to experience anxiety as the alternative, ranged from 3.74 ($SD = 1.17$) to 4.05 ($SD = 0.90$). The mean for the various willingness exercises done in-session was 3.57 ($SD = 0.90$), whereas the mean for willingness exercises done as part of homework was 4.17 ($SD = 0.80$). The mindfulness homework means were 3.83 for mindfulness homework using CDs, 3.45 ($SD = 1.15$) for mindfulness homework without CDs, and 3.97 ($SD = 1.15$) for mindfulness of daily

activities. Overall, it appears that participants found the in-session exercises and homework exercises to be quite helpful.

Intent-to-Treat Analyses

Table 3 presents means and standard deviations for the intent-to-treat sample (N=42) at baseline and posttreatment, as well as effect sizes. There were significant reductions in social anxiety from baseline to posttreatment, as measured with the LSAS, $t(41) = 6.65$, $p < .001$, the SPS, $t(41) = 5.67$, $p < .001$, the SIAS $t(41) = 6.99$, $p < .001$, and the SPIN, $t(41) = 5.79$, $p < .001$. There were significant increases in mindfulness as measured with the MAAS, $t(41) = -3.39$, $p < .01$, and the KIMS, $t(41) = -5.17$, $p < .001$, and acceptance (AAQ), $t(41) = -6.21$, $p < .001$. Finally, there were significant decreases in rumination, $t(41) = 4.41$, $p < .001$, and depression, $t(41) = 4.95$, $p < .001$. Effect sizes were in the medium range for social anxiety reduction for the intent-to-treat sample.

Group 1: Change Across CBT and MAGT

As mentioned above, the participants in the first group completed a course of CBT prior to enrolling in this study. There were six treatment completers from the first group and they had attended an average of 10.5 (out of 12) CBT group sessions. Scores on the social anxiety symptom measures reflect an improvement across CBT, but the end-point values indicate a group of patients that remained significantly affected by social anxiety disorder. For example, Mennin and colleagues (2002) recommended a cutoff of 30 on the LSAS for a diagnosis of social anxiety disorder and 60 as a cutoff for the generalized subtype, and the mean for this group of patients following CBT was over 75 (CBT Effect Size of 0.52). Figure 1 displays scores for these six participants pre- and post-CBT, and pre-, mid-, post-MAGT and follow-up for the four symptom measures that were available at those times (LSAS, SPS, SIAS, and BDI). As displayed in the figure, patients generally improved across CBT, worsened somewhat prior to starting MAGT, and then showed a decline in symptoms at post-MAGT and then maintained these gains at the follow-up session 3 months later. It is important to note that the interval between post-CBT and pre-MAGT may have been up to a year, depending on the participant and so the decline in treatment gains following CBT could have occurred later than 3 months post-CBT. A more detailed description of these analyses can be obtained from the authors.

Table 3
Intent-to-Treat: Means, Standard Deviations, and Effect Sizes (N=42)

Scale	Baseline		Post-Treatment		t	Effect Sizes
	M	*SD*	*M*	*SD*		
Social Anxiety:						
LSAS	80.63	19.94	67.17	21.69	6.65**	.65
SPS	38.17	13.33	28.86	13.49	5.67**	.69
SIAS	54.00	12.48	43.48	15.06	6.99**	.76
SPIN	42.12	11.80	32.81	13.08	5.79**	.75
Mindfulness/Acceptance:						
AAQ	57.21	9.73	65.24	12.18	−6.21**	.73
KIMS	104.67	16.15	114.43	17.47	−5.17**	.58
MAAS	3.39	.89	3.70	.93	−3.39*	.34
Depression/Rumination:						
BDI	18.94	11.87	11.89	10.80	4.95**	.62
RRQ	49.95	7.50	45.14	9.04	4.41**	.58

Note. LSAS=Liebowitz Social Anxiety Scale, SPS=Social Phobia Scale, SIAS=Social Interaction Anxiety Scale, SPIN=Social Phobia Inventory, AAQ=Acceptance and Action Questionnaire, KIMS=Kentucky Inventory of Mindfulness Skills, MAAS=Mindful Attention Awareness Scale, BDI=Beck Depression Inventory, RRQ=Rumination subscale of the Reflection-Rumination Questionnaire.
*$p < .01$. **$p < .001$.

Mechanisms of Change: Exploratory Analyses

A final aim of the present study was to examine mechanisms of change. Given that the present study was an open trial, only exploratory analyses could be carried out (Doss & Atkins, 2006) and the primary goal was to identify variables that can be tested in a randomized controlled trial. The SPS was once again chosen as the primary outcome variable. As a first step, correlations between change on the SPS and change on the hypothesized mediators (acceptance, mindfulness, rumination) from baseline to posttreatment were examined. Change on the SPS was strongly correlated with change on both the AAQ (r=.72, $p < .001$) and the Accept Without Judgment subscale of the KIMS (r=.70, $p < .001$) and moderately correlated with change on the MAAS (r=.46, $p < .05$). Finally, with respect to rumination, there was a trend for the association between change on the SPS and change on the RRQ (r=.33, p=.08), however, change on the SIAS was significantly correlated with change on the RRQ (r=.38, $p < .05$).

Next, the patterns of change for the possible mediators were examined. Given that the MAAS did not demonstrate significant change by midtreatment, it was not examined further, whereas the AAQ, KIMS, and RRQ did change significantly by midtreatment. Consistent with Dalrymple and Herbert (2007), who also examined possible process variables in an open trial for SAD, hierarchical regression analyses were carried out. First, a hierarchical regression analysis was carried out predicting change in SPS from midtreatment to posttreatment, with

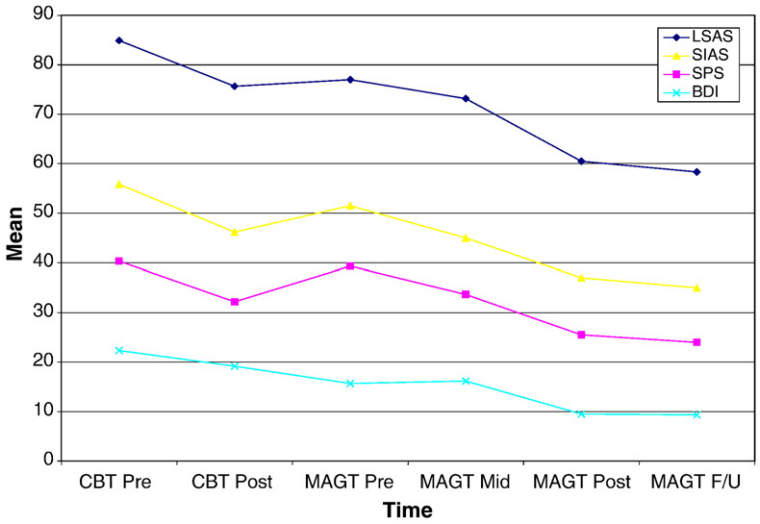

Figure 1. Mean Scores on the Symptom Measures across CBT and MAGT for the first Group of Treatment Completers ($n=6$).

change in SPS from baseline to midtreatment entered at the first step and change in AAQ from baseline to midtreatment entered at the second step. Change in AAQ from baseline to midtreatment significantly predicted change in social anxiety from midtreatment to posttreatment, controlling for change in social anxiety from baseline to midtreatment ($\beta=.45$, $p<.05$). This analysis was repeated for each of the other possible mediators (KIMS, RRQ) but they were not significant predictors in their respective models (KIMS: $\beta=.20$, $p=.35$; RRQ: $\beta=.22$, $p=.25$). Overall, there is evidence that the AAQ may be a mediator of change, although the design of this study does not allow for causal statements and it is important to note that participants also experienced significant change on social anxiety by midtreatment; thus, there is not evidence of the change in AAQ occurring prior to the change in social anxiety symptoms.

Discussion

A mindfulness- and acceptance-based approach appears to be acceptable to patients with SAD. There was feedback from participants that MAGT strategies were helpful. With respect to treatment compliance, treatment completers attended most sessions and completed over half of the assigned homework. Further, there is preliminary evidence for the effectiveness of MAGT. There were significant reductions in social anxiety, depression, and rumination as well as significant increases in mindfulness and acceptance, and all of these gains were maintained at the 3-month follow-up. Further, most of the treatment completers met criteria for reliable change and 43% of the original sample demonstrated clinically significant change. As such, there is support that MAGT represents another group treatment approach to offer to patients with SAD. This study adds to the literature supporting mindfulness and acceptance approaches for the treatment of SAD (Dalrymple & Herbert, 2007; Ossman et al., 2006). More broadly, this study adds to the growing body of evidence supporting mindfulness and acceptance approaches for the treatment of psychopathology (Baer, 2003; Hayes et al., 2006).

The present study also examined possible mechanisms of change, namely acceptance, mindfulness, and rumination. There was preliminary support that acceptance may be a mediator of treatment change in MAGT, similar to findings reported by Dalrymple and Herbert (2007) in an open trial of individual ACT for SAD. Related to the pattern of change, social anxiety and acceptance both changed significantly by midtreatment, so it is not possible to ascertain whether change in acceptance occurred prior to change in social anxiety. Interestingly, there was significant change in social anxiety by Session 6, which was prior to the introduction of formal exposure to valued social situations (Session 7). Additionally, homework completion was significantly associated with acceptance, such that the more homework participants completed, the more accepting of their experience they were (as measured by the AAQ and the Accept Without Judgment subscale of the KIMS). Change in social anxiety was also significantly correlated with change in mindfulness and change in rumination. However, the hierarchical regression analyses did not lend further support for mindfulness and rumination as possible mediators. However, given that there were significant changes in mindfulness and rumination across treatment, and that change in mindfulness and rumination were both correlated with social anxiety outcome, it may be premature to rule these out as possible mediators. Further, there has been evidence that rumination mediates change in a mindfulness

intervention study for depression (Ramel, Goldin, Carmona, & McQuaid, 2004).

There have been a number of criticisms of "third-wave interventions." Hofmann and Asmundson (2008) have questioned whether ACT is any different from CBT. Certainly the therapy done in these group sessions was very different from validated CBT interventions for SAD, namely CBGT (Heimberg & Becker, 2002) and Clark's cognitive therapy program (Clark et al., 2003, 2006). The emphasis in both of these treatments is on changing beliefs via cognitive restructuring and exposure (Heimberg & Becker) and behavioral experiments (Clark et al.), whereas the emphasis in MAGT (as in ACT) is about accepting social anxiety as it is, not needing it to be any different, while pursuing valued life goals. While there is an exposure component to MAGT, the rationale is about increasing one's willingness to experience social anxiety and committing to valued life goals, rather than changing thoughts or habituation. There is no discussion at any time about examining evidence for and against automatic thoughts. Instead, participants practice defusing or gaining distance from thoughts, allowing the thoughts to be there and pursuing life goals at the same time.

Given the differences in treatment approach between MAGT and CBGT as described above, it would be reasonable to expect different mechanisms of change for MAGT and CBGT. This research question was examined more broadly by Forman and colleagues, comparing ACT and cognitive therapy, in an effectiveness trial for anxiety and depression (Forman, Herbert, Moitra, Yeomans, & Geller, 2007). While there were limitations to their tests of mediation, given the lack of a control group and the simultaneous assessment of mediators and outcome variables, they did find differences across treatment groups. More specifically, there was evidence that the observe and describe facets of the KIMS more strongly mediated change in the cognitive therapy condition, while the act with awareness and acceptance facets of the KIMS, as well as experiential avoidance (AAQ), more strongly mediated change in the ACT condition. These differences in mechanisms of change may be taken as preliminary evidence that these approaches to treatment (traditional cognitive therapy and ACT) are in fact distinct. However, for social anxiety specifically, it has yet to be determined if the mechanisms of change are in fact different for mindfulness/acceptance approaches to treatment (e.g., MAGT) and CBGT or Clark's cognitive therapy program and the mechanisms may actually be more similar than different, given the shared emphasis on decreasing avoidance.

There were a number of limitations to the present study, the main one being that this was an open trial with a relatively low sample size. Other criticisms of ACT include the lack of controlled trials (Öst, 2008) and this criticism applies to research on SAD. A randomized controlled trial comparing MAGT, CBGT, and a wait-list control group is under way by the authors. Another limitation of the present study was that the sessions were not videotaped and therefore could not be independently rated. However, the sessions did closely follow a manual and a revised version, currently being used in the trial study, is available from the authors (Fleming & Kocovski, 2007). Additionally, it would have been preferable to have included an outcome measure that does not rely on self-report, and in particular, to have had an assessment done by an independent evaluator posttreatment. As well, the lack of a measure to assess quality of life or valued living represents another limitation of the present study. Additionally, although participants were asked to refrain from receiving other treatments while in the trial, data on whether or not participants actually received other treatments was not collected at posttreatment or follow-up.

One final limitation concerns attrition. The rate of attrition in the present study (31%) was lower than the rate found in the Ossman and colleagues (2006) group ACT for SAD pilot study, but higher than the rate found by Dalrymple and Herbert (2007) in their individual ACT treatment study. Group therapy tends to have higher dropout rates than individual therapy. The rate of attrition in the present study is consistent with many other studies (e.g., Forman et al., 2007). Further, Hofmann and Suvak (2006) examined attrition in group CBT for SAD, comparing 34 dropouts with 99 treatment completers (for a dropout rate of 26%), and determined that attrition was not a threat to external validity. Importantly, the reasons given for discontinuing therapy in the present study included time constraints and having an ill family member, but did not include dissatisfaction with the therapy protocol. Admittedly, two participants stated that their preference for individual therapy led them to discontinue the group. However, this represents less than 5% of the original sample. While there are advantages to individual therapy (e.g., individualized attention), there are also advantages to group therapy (e.g., social support), which were communicated openly in some group sessions (e.g., spontaneous comments about how helpful it was to hear other people going through the same thing; plans to continue to support one another after termination). Additional advantages of group therapy include cost-effectiveness and treatment availability. Therefore, the development and enhancement of both group and individual treatments for SAD appears warranted.

There is growing evidence supporting the efficacy of mindfulness and acceptance approaches for the treatment of SAD. However, most of this evidence, including the present study, has been from open trials. One important next step, currently under way, is a randomized

controlled trial comparing a mindfulness/acceptance approach for SAD with traditional CBT and a waitlist control group.

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