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Self-Views in Social Anxiety Disorder: The Impact of CBT versus MBSR

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Abstract

This study examines the impact of Cognitive-Behavioral Group Therapy (CBGT) versus Mindfulness-Based Stress Reduction (MBSR) versus Waitlist (WL) on self-views in patients with social anxiety disorder (SAD). One hundred eight unmedicated patients with SAD were randomly assigned to 12 weeks of CBGT, MBSR, or WL, and completed a self-referential encoding task (SRET) that assessed self-endorsement of positive and negative self-views pre- and post-treatment. At baseline, 40 healthy controls (HCs) also completed the SRET. At baseline, patients with SAD endorsed greater negative and lesser positive self-views than HCs. Compared to baseline, patients in both CBGT and MBSR decreased negative self-views and increased positive self-views. Improvement in self-views, specifically increases in positive (but not decreases in negative) self-views, predicted CBGT- and MBSR-related decreases in social anxiety symptoms. Enhancement of positive self-views may be a shared therapeutic process for both CBGT and MBSR for SAD.

Keywords

social anxiety; cognitive-behavioral therapy; mindfulness; meditation; self-view

1. Introduction

Social anxiety disorder (SAD) is characterized by debilitating fear, humiliation, and embarrassment in social situations (American Psychiatric Association, 2013) and is known to be highly prevalent with an early age of onset (Kessler et al., 2012). SAD is associated with various psychological (e.g., anxiety, stress, sadness) and physiological symptoms (e.g., increased heart and breathing rates, motor tremors) when facing situations that trigger symptoms (Stein & Stein, 2008). Individuals with SAD wish for interconnectedness with others but often hold distorted views of themselves and experience high levels of solitude

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(Stein & Stein, 2008). SAD negatively affects performance in school, work, and interpersonal domains, and is associated with reduced life satisfaction (Fink et al., 2009). Despite its high prevalence and early onset, SAD is often undiagnosed, undertreated, and its impact on daily functioning is typically underestimated (Fink et al., 2009).

1.1 Self-Views in SAD

Cognitive-behavioral models of SAD suggest that maladaptive self-views play a crucial role in the onset and maintenance of SAD (Clark & Wells, 1995; Heimberg, Brozovich, & Rapee, 2014). Maladaptive self-views give rise to fears of having negative self-attributes exposed to others in social situations. This type of self-referential fear, in contrast to fear of the social situation, has been proposed as a primary trigger of social anxiety (Moscovitch, 2009). The maladaptive pattern of greater negative self-views and lesser positive self-views in SAD, in comparison to healthy controls, has been demonstrated in previous research (Goldin et al., 2013, Moscovitch, et al., 2009). Treatment-related changes in self-views may be an important mechanism in the reduction of SAD symptom severity (Goldin, Ziv, Jazaieri, & Gross, 2012; Goldin et al., 2013). Thus, modifying self-views may be an important target to enhance the efficacy of clinical interventions for patients with SAD.

1.2 Treatment of SAD

The most well-studied and efficacious psychological treatment for SAD is cognitive-behavioral therapy (CBT). CBT emphasizes the identification of maladaptive patterns of thinking, which includes distorted self-beliefs. Both cognitive-behavioral group therapy (CBGT) and exposure group therapy for SAD have been shown to reduce negative self-perceptions during anticipation or recollection of a social stressor, and this modification of self-beliefs predicted reductions in social anxiety symptom severity and self-focused attention (Hofmann, 2000; Hofmann, Moscovitch, Kim, & Taylor, 2004; Woody, Chambless, & Glass, 1997). A recent study demonstrated that individual CBT for SAD produced decreases in endorsement of negative self-views as well as increases in positive self-views (Goldin et al., 2013). Furthermore, this study found that increases in positive self-views mediated the effect of individual CBT for SAD (vs. a waitlist control) on decreases in social anxiety symptoms. Thus, modification of self-views may be a mechanism by which CBT reduces social anxiety symptoms in patients with SAD.

An alternative treatment for SAD is mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1990). MBSR consists of a set of formal and informal meditation practices to cultivate attention, emotion awareness, emotion regulation and self-regulation skills (Tang et al., 2015). MBSR has been shown to modify self-views in adults with SAD, specifically by increasing their positive self-views and decreasing their negative self-views (Goldin et al., 2009; Goldin et al., 2012). MBSR trains individuals to observe emotional and cognitive patterns with a curious, accepting, and non-judgmental perspective. Cultivating mindfulness skills may function to deconstruct maladaptive cognitions, including maladaptive self-schemas (Dahl, Lutz, & Davidson, 2015). MBSR is known to produce cognitively and affectively flexible mental states that reduce grasping at distorted self-beliefs. A recent study by Goldin and colleagues (2016) demonstrated that MBSR is as efficacious as CBGT at

reducing the severity of social anxiety symptoms in adults with SAD. However, no study to date has directly compared the impact of CBT versus MBSR on self-views in SAD.

1.3 The Present Study

The primary goals of this study were to compare the endorsement of positive and negative self-views of patients with SAD and healthy controls (HCs), to examine the impact of CBGT vs. MBSR vs. WL on endorsement of positive and negative self-views in adults with SAD, and to test whether treatment-related changes in self-views predict reduction in severity of social anxiety symptoms. At baseline, we expected that, compared to HCs, patients with SAD would endorse significantly lesser positive and greater negative self-views (**Hypothesis 1a**) and that there would be a positive association between negative self-views and social anxiety symptoms and a negative association between positive self-views and social anxiety symptoms (**Hypothesis 1b**). We further expected that, compared to WL, both CBGT and MBSR would produce significantly greater increases in positive and decreases in negative self-views (**Hypothesis 2**), with no specific prediction of superiority of one treatment over the other. We also expected that changes in positive and negative self-views during CBGT and MBSR would predict post-treatment decreases in social anxiety symptoms (**Hypothesis 3**).

2. Method

2.1 Participants

As reported elsewhere (Goldin et al., 2016), we conducted interviews using the Anxiety Disorders Interview Schedule for the DSM-IV-Lifetime version (ADIS-IV-L; Di Nardo, Brown, & Barlow, 1994) to determine whether patients had a principal diagnosis of SAD based on the criteria of the DSM-IV (American Psychiatric Association, 1994). We also used the dual criteria of (a) moderate or greater social fear in 5 or more social situations as assessed by the ADIS-IV-L as a threshold for the “generalized” subtype of SAD, and (b) a score of 60 or higher on the Liebowitz Social Anxiety Scale – Self-Report (LSAS-SR), which is the cut-off score for the generalized subtype of SAD as determined by receiver operator characteristics analysis of the LSAS-SR (Rytwinski et al., 2009). Exclusion criteria were: psychotherapy or pharmacotherapy in the past year, CBT in the past two years, previous MBSR course experience, past history of a long-term meditation retreat, regular practice of meditation of at least 10 minutes or more for 3 or more times per week, any history of neurological, cardiovascular, thought, or bipolar disorders, and current substance and alcohol abuse/dependence.

Over a two-year period from 2012 to 2014, 724 potential participants completed an online screener, of which 307 were screened by telephone (see Figure 1 Consort Diagram; Goldin et al., 2016). The remaining 173 were assessed with the ADIS-IV-L. Sixty-five patients were excluded for failing to complete baseline assessments or not meeting diagnostic criteria. This left 108 patients who were randomly assigned to CBGT ($n = 36$), MBSR ($n = 36$), or WL ($n = 36$). Dropout from treatment was low and did not differ across conditions, $\chi^2(2, N = 108) = 1.05, p = .59$, in CBGT ($n = 2$; 6%), MBSR ($n = 3$; 8%) and WL ($n = 1$; 3%). After removal due to missing data, the final sample included 30 CBGT, 31 MBSR, and 30 WL

patients. Separately, HCs were recruited using electronic bulletin boards and assessed for history of any Axis I diagnoses based on the ADIS-IV-L. The final sample of HC included 40 participants. We assessed HCs only at baseline. The data from the initial set of 108 SAD patients was used for SAD vs. HC baseline comparisons.

2.2 Procedure

Clinician referrals and local listings were used to find potential patients. Once a patient cleared telephone screening, an in-person diagnostic interview was conducted to assess current and prior Axis I disorders and current symptom severity. After baseline assessments were collected, every set of six consecutive patients was randomly assigned to CBGT, MBSR, or WL groups. Patients were provided treatment at no cost and offered \$150 after completing all the post-treatment assessments. All participants provided informed consent in accordance with the Institutional Review Board of Stanford University.

2.2.1 Diagnostic Assessment—Baseline diagnostic interviews were conducted using the ADIS-IV-L (Di Nardo et al., 1994). The ADIS-IV-L has been shown to provide excellent inter-rater reliability (Brown, Di Nardo, Lehman, & Campbell, 2001). To review the inter-rater reliability of the ADIS-IV-L in our study, we had Ph.D. clinical psychologists and doctoral students review 20% of the interviews. There was 100% agreement with the original principal diagnosis of SAD ($\kappa = 1.0$).

2.3 Measures

2.3.1 Liebowitz Social Anxiety Scale-Self Report—Social anxiety symptom severity was assessed using the *Liebowitz Social Anxiety Scale-Self-Report* (LSAS-SR; Fresco et al., 2001; Liebowitz, 1987), which asks the patients to reflect on their reactions to 11 social interaction situations and 13 performance situations. Fear and avoidance of each situation during the past week are rated using a 4-point Likert-type scale, ranging from 0 (*none and never*, respectively) to 3 (*severe and usually*, respectively). Ratings are summed for a total LSAS-SR score (range = 0–144). The LSAS-SR has good reliability and construct validity (Rytwinski et al., 2009), and its internal consistency was excellent in this study (Cronbach's $\alpha = .92$).

2.3.2 Self-Referential Encoding Task—The self-referential encoding task (SRET; Derry & Kuiper, 1981) measures positive and negative self-views. Stimuli were 25 positive and 25 negative social traits (see Table 1 for the complete list) from the Affective Norms of Emotion Words database (Bradley & Lang, 1999), balanced (all p s > .51) on (a) word frequency (positive adjectives = 40.5, negative adjectives = 33.6), (b) number of letters (positive adjectives = 6.9, negative adjectives = 7.2), (c) arousal (positive adjectives = 5.54, negative adjectives = 5.43; 1 = *low*, 9 = *high*), and (d) valence (deviation from neutral: positive adjectives = 2.66, negative adjectives = 2.58; 1 = *most negative*, 5 = *neutral*, 9 = *most positive*), based on the 9-point Self-Assessment Manikin rating system (Lang, 1980).

We used Eprime software (Schneider, Eschman, & Zuccolotto, 2002) to program the SRET. It consisted of a self-referential social-evaluative condition and a letter case (upper or lower) identification control condition that took 5 minutes and 39 seconds to complete. Each

stimulus (social trait adjective) was presented once in each of the two conditions. The SRET consists of four trial types: self-referential positive and negative adjectives and case identification with positive and negative adjectives. The SRET presented 5 blocks with 5 stimuli per block for each trial type. Each block consisted of a fixation asterisk, a prompt (either “Describes ME?” or “UPPER case?”), and the five adjectives of the same valence presented one at a time for 3 seconds each, either in all lower case or all upper case letters (see Figure 2 for details; Goldin et al., 2009). Participants pressed 1 of 2 keys on a button response device to indicate whether or not a word was self-descriptive (yes or no) or upper versus lower case. We decided not to use neutral adjectives (as a comparison condition) because there were few that could not be misconstrued as positive or negative by a patient with SAD. Stimulus order was a pseudo-random sequence of block types and sequences of five words within each block.

2.4 Forms of Treatment

2.4.1 Cognitive-Behavioral Group Therapy—CBGT was delivered by two Ph.D. clinical psychologists trained by one of us (RGH) to implement his CBGT for SAD protocol (Heimberg & Becker, 2002). Groups of six participants met for 12 sessions of 2.5 hours each (total time = 30 hours). An accompanying client workbook (Hope, Heimberg, & Turk, 2010) was used to supplement relevant portions of the CBGT protocol. CBGT comprised four major components: (1) psychoeducation and familiarization to CBGT; (2) cognitive restructuring skills; (3) graduated exposure to feared social situations, both within and outside the sessions; and (4) relapse prevention and termination. Further details are available elsewhere (Heimberg & Becker, 2002).

2.4.2 Mindfulness-Based Stress Reduction—MBSR was based on the standard curriculum outline by Kabat-Zinn (1990) with the exception that the one-day meditation retreat was converted to four additional weekly group sessions between the standard class 6 and 7 so that there were 12 weekly 2.5-hour sessions. This modification was implemented to match the duration and time of the CBGT protocol. A certified MBSR instructor trained at the University of Massachusetts Center for Mindfulness and who has conducted more than 100 MBSR courses conducted the MBSR intervention. The practice was supported by *A Mindfulness-Based Stress Reduction Workbook* (Stahl & Goldstein, 2010), which describes mindfulness practices and includes pre-recorded audio files to guide practice.

2.5 Statistical Analysis

To examine baseline differences in negative and positive self-views between HCs and SADs (Hypothesis 1), we conducted independent samples *t*-tests and report effect sizes using Cohen’s *d* and 95% confidence intervals. We also computed Pearson’s correlations to examine the association between severity of social anxiety symptoms (LSAS-SR) and endorsement of positive or negative self-views at baseline in patients with SAD. We implemented a 3 group (CBGT, MBSR, WL) x 2 time (pre, post) x 2 valence (positive, negative) repeated-measures analyses of variance (ANOVAs) to examine differential pre-to-post CBGT vs. MBSR changes in positive and negative self-views. Paired samples *t*-tests were conducted to investigate within-group changes in positive and negative self-views (Hypothesis 2). To examine whether improvement in self-views predicted reduction in social

anxiety symptoms (Hypothesis 3), we conducted a linear regression to test whether pre-to-post CBGT and MBSR changes in negative and positive self-views, entered simultaneously in the same block, predicted baseline residualized post-treatment LSAS-SR.

3. Results

3.1 Baseline Differences in Self-Views in SAD Patients versus HC (Hypotheses 1a & 1b)

Independent samples *t*-tests showed that, compared to HCs, SAD patients endorsed significantly lesser positive self-views (HC: $M = 87.03$, $SD = 13.27$ vs. SAD: $M = 44.68$, $SD = 25.24$; $t(142) = 12.89$, $p < .001$, Cohen's $d = 2.4$, $CI[-51.1, -33.6]$), and greater negative self-views (HC: $M = 6.55$, $SD = 10.39$ vs. SAD: $M = 56.62$, $SD = 25.18$; $t(141) = 16.76$, $p < .001$, Cohen's $d = 2.9$, $CI[41.5, 58.6]$; see Figure 3). Furthermore, in patients with SAD, we found an inverse association between social anxiety symptoms and positive self-views, $r(100) = -.26$, $p = .008$. However, we observed no significant association between negative self-views and social anxiety symptoms, $r(99) = .13$, $p > .21$.

3.2 Impact of CBT and MBSR on Self-Views (Hypothesis 2)

To examine differential changes in self-views, we conducted a 3 group (CBGT, MBSR, WL) x 2 time (pre, post) x 2 valence (positive, negative) repeated-measures ANOVA of self-endorsement on the SRET in SAD patients. This resulted in a significant 3-way interaction of group by time by valence, $F(2, 88) = 5.35$, $p = .006$, Cohen's $d = 0.7$, characterized by a significant main effect of time, $F(1, 88) = 4.45$, $p = .04$, Cohen's $d = 0.5$, and no main effects of valence, $F(1, 88) = 0.280$, $p = .60$, or group, $F(2, 88) = 1.42$, $p = .25$, as well as a significant 2-way interaction of time by valence, $F(1, 88) = 72.02$, $p < .001$, Cohen's $d = 1.8$, but no 2-way interaction for group by time, $F(2, 88) = 0.78$, $p = .46$, or group by valence, $F(2, 88) = 2.11$, $p = .13$.

We conducted follow-up paired-samples *t*-tests for CBGT, MBSR, and WL, separately, to examine pre-to-post-treatment/WL changes in self-views (see Figure 4). CBGT increased positive self-views, $t(29) = 4.20$, $p < .001$, Cohen's $d = 0.7$, and decreased negative self-views, $t(29) = 4.58$, $p < .001$, Cohen's $d = 0.8$. MBSR also yielded similar increases in positive, $t(30) = 5.65$, $p < .001$, Cohen's $d = 0.9$ and decreases in negative self-views, $t(30) = 7.51$, $p < .001$, Cohen's $d = 1.1$. The WL group showed significant but smaller improvements in positive self-views, $t(29) = -2.47$, $p = .02$, Cohen's $d = 0.3$ and negative self-views, $t(29) = 2.10$, $p = .04$, Cohen's $d = 0.4$. (Figure 4).

Between-group *t*-tests showed no significant difference for pre-to-post-CBGT vs. MBSR improvement in positive self-views, $t(59) = -0.37$, $p = .72$, or negative self-views, $t(59) = -0.53$, $p = .60$. For pre-to-post-CBGT (vs. WL), there was a trend towards a significant difference in the increase in positive self-views, $t(58) = 1.96$, $p = .06$, Cohen's $d = .05$, but there was a significant difference in the decrease in negative self-views, $t(58) = 2.32$, $p = .02$, Cohen's $d = 0.7$. For pre-to-post-MBSR (vs. WL), there was a significant difference in increase in positive self-views, $t(59) = 2.62$, $p = .011$, Cohen's $d = 0.7$, and in decrease in negative self-views, $t(59) = 3.44$, $p = .001$, Cohen's $d = 0.9$.

3.3 Changes in Self-Views as Predictors of Social Anxiety Symptom Reduction (Hypothesis 3)

We examined whether treatment-related changes in self-views predicted treatment-related reductions in social anxiety symptoms. To do this, we conducted a linear regression in which we entered changes in positive and negative self-views simultaneously as predictors of baseline residualized social anxiety symptoms at post-CBGT, MBSR, and WL, separately. As shown in Table 2, for CBGT the overall model was significant, $R^2 = .27$, $F(2,27) = 4.92$, $p = .015$, with only increases in positive self-views predicting decreases in social anxiety symptoms. For MBSR, the model was significant, $R^2 = .23$, $F(2,28) = 4.13$, $p = .027$, with only increases in positive self-views predicting decreases in social anxiety symptoms. For WL, the model was not significant, $R^2 = .02$, $F(2,27) = 0.31$, $p = .74$.

4. Discussion

The goal of the present study was (a) to investigate the differences in positive and negative self-views between patients with SAD and HCs, (b) to assess the impact of CBGT vs. MBSR on endorsement of positive and negative self-views in patients with SAD, and (c) to determine whether changes in self-views predicted reduction in social anxiety symptoms. Findings showed that patients with SAD have impoverished positive and elevated negative self-views compared to HCs (consistent with Goldin et al., 2013) and that CBGT and MBSR produced significant and comparable decreases in negative self-views and increases in positive self-views in adults with SAD. Furthermore, CBGT- and MBSR-related changes in positive, but not negative, self-views predicted decreases in severity of social anxiety symptoms post-treatment.

Baseline comparisons between patients with SAD and HCs showed the expected differences in support of our Hypothesis 1a. Patients with SAD in our study demonstrated equivalently robust distortions: lesser positive self-views ($d = 2.4$) and greater negative self-views ($d = 2.9$) compared to HCs. These findings converge with prior studies showing the same pattern of distorted positive and negative self-views in adults with SAD (Goldin et al., 2009; Goldin et al. 2013; Hofmann, 2004). However, in patients with SAD, there was an asymmetry in the relationship between social anxiety symptoms and positive/negative self-views. Specially, there was an inverse association between social anxiety symptoms and positive self-views, and, contrary to our Hypothesis 1b, no relationship between social anxiety symptoms and negative self-views. These findings suggest that deficits in positive social self-views may be related to SAD in ways that are different from negative self-views.

CBGT, MBSR, and WL all resulted in significant increases in positive self-views and decreases in negative self-views. When compared to WL, MBSR resulted in greater changes in self-views, in support of our Hypothesis 2. CBGT resulted in greater decreases in negative self-views but only a trend toward increases in positive self-views, contrary to our Hypothesis 2. When directly compared CBGT and MBSR produced similar changes in self-views. This suggests that CBGT and MBSR may be equally effective in modulating self-views in adults with SAD. This pattern of changes in self-views replicates similar results found for individual CBT for SAD (Goldin et al., 2013) and MBSR for SAD (Goldin et al., 2012).

CBGT and MBSR for SAD are thought to have different underlying mechanisms of change. CBGT focuses on learning how to implement cognitive reappraisal of negative emotional reactivity during graded exposure to feared social stimuli. CBGT emphasizes logical reasoning, linguistic processing, perspective taking, testing different reappraisals, and tracking the results of reappraisal on emotional experience and behavioral patterns. In contrast, MBSR focuses on cultivating via a variety of different meditation practices several mental abilities, including present-moment awareness, non-elaboration of thought, interpretation or consequences, and acceptance of experience. CBGT modulates self-views through analyzing and testing the validity and functionality of currently held negative self-views. MBSR engenders a relinquishing of grasping at or identifying with any self-views. Reduction in grasping at or reifying self-views may give rise to spontaneous perspective taking and acceptance-based cognitive reappraisal. Despite the apparent differences in how CBGT and MBSR are proposed to work, in this context, the findings suggest that both clinical interventions can ameliorate maladaptive self-views to a similar degree via different methods.

We found evidence that increases in positive, but not decreases in negative, self-views predicted decreases in social anxiety symptoms to a similar degree following CBGT and MBSR. This finding contrast with the findings reported in the studies by Hofmann (2000) and Hofmann et al. (2004). Those studies emphasized internally generated thoughts by participants during a 3-minute period of anticipation of a stressful social task. Our results were derived from a computer task with experimenter-selected adjectives not in the context of anticipation. However, our findings converge with a prior study showing that increases in positive (and not negative) self-views mediated the impact of individual CBT for SAD on social anxiety symptoms (Goldin et al., 2013).

One possible explanation for this asymmetry is self-focused attention. CBT-related reductions in self-focused attention are related to reductions in SAD symptoms (Woody et al., 1997). It is possible that the impact of increases in positive self-views is more strongly related to decreases in self-focused attention than are decreases in negative self-views. Another possible explanation is that positive self-views are more robustly linked with psychological flexibility than negative self-views. A recent study suggests that increased negative self-views may mediate increased defensive world-views/behaviors while increased positive self-views may mediate increased engaging world-views/behaviors (Chen et al., 2015). The corollary of this result is that, in the case of patients with SAD, increased negative self-views would create increased defensiveness and avoidance of the outside world, and low positive self-views would inhibit motivation to engage. Engagement and exposure to previously feared social stimuli would be a necessary step towards reduction in social anxiety symptoms. Based on the logic of these ideas, a person with SAD who decreases their negative self-views would stop many of their self-focused defensive behaviors yet, without increases in positive self-views, may have limited motivation to engage with the outside world. This would suggest that the Hofmann (2000) and Hofmann et al. (2004) studies were assessing defensiveness felt towards the outside world during the anticipatory period. In contrast, the increases in positive self-views may have supported greater engagement with the outside world that then reduced social anxiety symptoms. One implication is that greater emphasis on exercises that modify positive rather than negative

self-views may enhance the clinical effectiveness of interventions for SAD. This could be implemented within CBGT by encouraging participants to reflect on positive self-views and to reinforce positive self-views in other group participants. CBGT participants could be guided through explicit dyadic exercises that serve to reinforce the cultivation of positive self-views. In the case of MBSR, mindfulness practices are not explicitly focused on generating more positive or less negative self-views. Reduction in grasping at habitual or automatic patterns of thought and interpretation is a key focus within MBSR. Theoretically, mindfulness practices are designed to help individuals be more successful at letting go of overlearned habitual self-views and establish a more adaptable and fluid sense of the self. In the case of SAD, this could diminish the sense of defensiveness towards other people, which in turn would support more engagement with others.

Our study showed that both CBGT and MBSR modulate self-views in adults with SAD. However, there were several limitations. Although we used 25 positive and 25 negative self-views, there are likely other attributes that we did not assess that are also relevant to SAD. Furthermore, future studies might assess distinct subtypes of positive and negative self-views, and examine how they change and predict treatment for SAD. We had patients provide binary (yes/no) self-report ratings of endorsement. To obtain more fine grain levels of endorsement of self-views, future studies could use a 0 to 10 scale to assess a continuum of self-endorsement. Our study used experimenter-selected stimuli. A future study could use a combination of experimenter and participant selected word stimuli to examine whether personal salience has greater efficacy for measuring self-views.

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Highlights

- CBT and MBSR may be equally efficacious in treating social anxiety disorder.
- CBT and MBSR improve positive and negative self-views.
- Treatment-related increases in positive self-views predicted lesser social anxiety.
- Positive self-views may be an important therapeutic target.

Figure 1.
Consort diagram; participant enrollment to allocation (Goldin et al. 2016)

Figure 2.
Experimental design of the self-referential encoding task (SRET) (Goldin et al. 2009)

Figure 3.

Baseline positive and negative self-views; HC versus SAD

HC = Healthy Controls. SAD = Patients with Social Anxiety Disorder. Error bars = standard error of the mean.

Figure 4.

Between Group Treatment Changes in Positive and Negative Self-Views.

WL = waitlist control group, CBGT = cognitive-behavioral group therapy, MBSR =mindfulness-based stress reduction. Error bars = standard error of the mean.

Table 1

List of 25 positive and 25 negative words used as stimuli in the SRET

Positive Words	Negative Words
loved	REJECTED
terrific	AFRAID
admired	regretful
JOLLY	coward
BRAVE	embarrassed
FUN	sad
engaged	lonely
intimate	ALONE
ALIVE	DISPLEASED
HOPEFUL	panic
free	TERRIFIED
confident	loser
SECURE	frustrated
LIVELY	LOST
DIGNIFIED	FEEBLE
FRIENDLY	failure
HAPPY	helpless
UNTROUBLED	DISGUSTED
festive	IMPOTENT
strong	CONFUSED
joyful	UNHAPPY
satisfied	troubled
CAREFREE	insecure
EASYGOING	SCARED
masterful	inferior

Regression Analyses of Changes in Positive and Negative Self-Views as Predictors of Change in Severity of Social Anxiety Symptoms

Table 2

Variable	B	95% CI	SE B	β	t	p	R ²
CBGT						.015	.27
Positive	-.018 [-.035, .000]	.009	-.462	-2.05	.050	.11	
Negative	-.002 [-.017, .012]	.007	-.077	-0.34	.74	< .01	
MBSR						.027	.23
Positive	-.016 [-.031, .000]	.008	-.382	-2.08	.047	.12	
Negative	-.007 [-.022, .008]	.007	-.166	-0.90	.37	.02	
WL						.74	.02
Positive	-.010 [-.037, .017]	.013	-.182	-0.74	.48	< .01	
Negative	.007 [-.014, .028]	.010	.166	0.68	.501	< .01	

Note. CBGT = cognitive behavioral group therapy, MBSR = mindfulness-based stress reduction, WL = waitlist control group. B = unstandardized beta weight, CI = confidence interval, β = standardized beta weight, R² = variance explained for complete model which included changes in positive and negative self-views for each treatment or waitlist group as predictor of social anxiety symptoms (LSAS-SR).