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Journal of Affective Disorders 114 (2009) 271 – 278

Journal of Affective Disorders

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Research report

Cognitive therapy for depressed adults with comorbid social phobia

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Received 20 May 2008; received in revised form 16 July 2008; accepted 5 August 2008
Available online 18 September 2008

Abstract

Background: Evidence suggests that comorbid depression influences the outcome of cognitive–behavioral treatment for patients presenting with social phobia. Little is known, however, about the influence of comorbid social phobia on the response to cognitive therapy (CT) for depression among adults presenting with recurrent major depressive disorder (MDD). These analyses seek to clarify this relationship.
Methods: Patients (N=156) with recurrent DSM-IV MDD entered CT (20% also met DSM-IV criteria for social phobia). Every week during the course of CT, clinicians assessed depressive symptoms and patients completed self-report instruments measuring severity of depression and anxiety.
Results: At presentation, outpatients with comorbid social phobia reported greater levels of depressive symptoms and clinicians rated their impairment as more severe, compared to their counterparts without social phobia. Patients with or without comorbid social phobia did not differ significantly in (1) attrition rates; (2) response or sustained remission rates; (3) time to response or sustained remission; or (4) rate of improvement in symptoms of depression or anxiety.
Limitations: The lack of domain-specific measures limits inference with respect to the improvements in social anxiety that occur with CT of depression.
Conclusions: These findings introduce the hypothesis that CT for depression may be flexible enough to treat the depressive symptoms of patients presenting with MDD who also suffer from social phobia.

Keywords: Social phobia; Social anxiety disorder; Major depressive disorder; Comorbidity; Cognitive therapy; Treatment outcome

1. Introduction

As the literature on cognitive–behavioral therapy (CBT) has developed, it has been organized primarily by psychiatric disorder. An unintended consequence of this organization is that the field has limited knowledge of the impact of psychiatric comorbidity on treatment delivery and outcomes. In addition, little is known about which components of CBT produce change across disorders and which are specific to a given disorder or

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doi:10.1016/j.jad.2008.08.008

set of disorders. In this paper, we focus on adults who presented with recurrent major depressive disorder (MDD) and also reported comorbid social phobia (SP). We focus on this profile of comorbidity because it is among the most frequent occurring in outpatient clinics offering treatment for anxiety or depressive disorders. For example, Brown and associates (Brown et al., 2001) reported that 60% of a sample of 449 patients with SP met diagnostic criteria for lifetime MDD. Similarly, Fava and colleagues (Fava et al., 2000) found that 27% of 255 depressed adult outpatients also suffered from SP. In the present study, we compare the outcome of cognitive therapy for depression for patients with MDD and comorbid SP (at presentation) to that of patients who present with MDD without a comorbid SP diagnosis.

Our interest in adding to this literature was sparked by results from the anxiety literature. Although CBT has established clear efficacy for the treatment of social phobia (Hofmann and Smits, 2008), a growing body of findings suggests suboptimal outcomes after CBT may be particularly common among adults who present with social phobia and are also diagnosed with unipolar depression (e.g., MDD, dysthymia). Despite experiencing significant improvements in social anxiety during CBT, patients with both disorders continue to show more social anxiety (Erwin et al., 2002; Turner et al., 1996) and depression (Joormann et al., 2005; Van Velzen et al., 1997) than those without a unipolar depression diagnosis. Similarly, depressive symptoms at baseline tend to be negatively correlated with improvements in symptoms of social phobia in adults who present with social phobia, but without a comorbid MDD diagnosis (Chambless et al., 1997; Feske et al., 1996; Scholing and Emmelkamp, 1999; Ledley et al., 2005). It is unclear whether patients with social phobia and more severe depression symptoms are at increased risk for dropping out of treatment. Two studies report such a relationship (Ledley et al., 2005; Lincoln et al., 2005), but two do not (Hofmann and Suvak, 2006; Turner et al., 1996).

These findings have led some researchers to consider the utility of adapting current CBT protocols for social phobia for patients who also present with depression (Chambless et al., 1997; Ledley et al., 2005). For example, as an alternative to providing concurrent pharmacotherapy aimed to reduce depressive symptoms, Ledley et al. (2005) have advocated a sequential psychosocial approach, which involves first treating depressed patients with social phobia with a partial course of Beckian cognitive therapy for depression (CT) and then providing exposure-based therapy for social anxiety. Implicit in this sequential approach is the (untested) assumption that the presence of a social phobia diagnosis does not impede the efficacy of CT for depression. Although CT has established efficacy for the treatment of MDD (Hollon et al., 2005), there is a scarcity of research examining the question of whether comorbid social phobia or other anxiety disorders impact the outcome of psychotherapy, and particularly CT, for depression. Shear and colleagues (Brown et al., 1996; Feske et al., 1998; Frank et al., 2000) have demonstrated that the presence of panic–agoraphobic spectrum symptoms at baseline predicts a poorer response to interpersonal psychotherapy. This relationship was not observed for generalized anxiety disorder (Brown et al., 1996); the potential impact of other anxiety disorders was not examined. Our review of the literature revealed only one study that reported on the influence of social phobia on the response to CT for depression. DeRubeis and associates reported that the baseline to posttreatment change on the 17-item Hamilton Rating Scale for Depression ($HRSD_{17}$; Hamilton, 1960) was somewhat attenuated among patients with comorbid MDD and social phobia treated relative to MDD patients without social phobia ($d=-.26$, $P=.06$; DeRubeis et al., 2005).

Building upon the aforementioned studies, the purpose of our exploratory analyses was to evaluate the influence of comorbid social phobia on the outcome of CT for outpatients with recurrent MDD. In addition to examining differences on measures of depression and anxiety severity at presentation, we compared the two groups on their: (1) *attrition* (i.e., percentage of participants that did not complete the 20-session CT protocol); (2) *response* (i.e., an absence of DSM-IV MDD and an $HRSD_{17}$ score of 9 or less at their final session); (3) *time to response* (i.e., the number of weeks between the diagnostic evaluation and the time at which the participants achieved response); (4) *sustained remission* (i.e., an absence of DSM-IV MDD, combined with a $HRSD_{17}$ score of 6 or less for two consecutive weeks and maintenance of these two criteria throughout the remainder of the 20-session CT protocol); (5) *time to sustained remission* (i.e., the number of weeks between the diagnostic evaluation and the time at which the participants achieved sustained remission; (6) *rate of improvement in symptoms of depression* (i.e., the slopes of change on the $HRSD_{17}$ and the Beck Depression Inventory [BDI; Beck, Ward, Mendelson, Mock, and Erbaugh, 1961]), respectively; and (7) *rate of improvement in symptoms of anxiety*, (i.e., the slopes of change on the anxiety/arousal subscale of the Inventory for Depressive Symptomatology — Self Report version [IDS-SR; Rush et al., 1986]).

2. Methods

2.1. Participants

The sample, recruited via community advertisement and referral, was comprised of adult outpatients ($N=156$) who participated in a randomized clinical trial at The University of Texas Southwestern Medical Center at Dallas (see Jarrett et al., 2001). Participants met DSM-IV (American Psychiatric Association, 1994) diagnostic criteria of nonpsychotic, recurrent, major depressive disorder, demonstrated clear inter-depressive episode recovery (≥ 2 months of at least nearly normal functioning), and reported a score >16 on the $HRSD_{17}$. Exclusion criteria included organic mental disorders, medical disorders correlated with depressive symptoms, psychotic disorders, active substance abuse or dependence, primary obsessive compulsive or eating disorders, borderline personality disorder, and inability or unwillingness to comply with the study protocol. At the time of informed consent, participants agreed to stop, postpone, or report the use of psychotropic medications or non-protocol psychosocial interventions.

2.2. Procedure

The procedures for the randomized controlled study are described in detail in a previous report (Jarrett et al., 2001). Briefly, individuals presenting with the complaint of depression completed a phone screen ($N>3500$). Potentially eligible participants ($n=608$) presented at the clinic for two stages of diagnostic evaluation. First, experienced evaluators administered the Structured Clinical Interview for DSM-III-R (SCID outpatient version, Spitzer et al., 1989) applying both DSM-III-R and DSM-IV criteria for MDD and other Axis I disorders, as well as documenting the course of lifetime psychiatric disorders and subtyping mood disorders. Second, a faculty-level diagnostician reassessed those deemed eligible during the first stage ($n=247$). Of these ($n=161$), 156 provided written informed consent to enter the following protocol.

Eligible participants were offered a 20-session course of acute phase CT (A-CT; $n=156$). Thereafter, consenting responders ($n=84$) were randomly assigned to either 8-month continuation-phase CT (C-CT) or assessment-only control. Both groups were then followed longitudinally for an additional 16 months to examine the effects of C-CT for preventing relapse and recurrence (see Jarrett et al., 2001 for details). Given the aims of the present study, we report results from the initial diagnostic, the open trial of A-CT (the first 12–14 weeks; $N=156$), and the first independent evaluation. The University of Texas Southwestern Medical Center at Dallas institutional review board approved all procedures.

2.2.1. Acute phase CT (A-CT)

Five experienced cognitive therapists offered 20 individual sessions (50 to 60 min) of A-CT for MDD over the course of 12 to 14 weeks. Sessions were scheduled to be held twice weekly for the first 8 weeks and once weekly for the last 4 weeks. A-CT was conducted as described by Beck et al. (1979). Therapists received on-going supervision; competency was monitored longitudinally and defined by a minimum score of 40 on the Cognitive Therapy Rating Scale (Young and Beck, 1980). Evidence of competence was documented in the original report (Jarrett et al., 2001).

2.3. Assessment

2.3.1. Schedule

Experienced diagnosticians collected all baseline data and independent evaluators collected clinician ratings a week following the last session of A-CT. During A-CT, the cognitive therapists administered the $HRSD_{17}$ and participants completed the IDS-SR and BDI weekly.

2.3.2. Hamilton Rating Scale for Depression ($HRSD_{17}$; Hamilton, 1960)

The $HRSD_{17}$ is a widely used clinician rating scale to assess depression severity. The scale has sound psychometric properties, including good interrater reliability ($r=.85$; Clark and Watson, 1991), high internal consistency ($\alpha=.88$ and .89 in two large clinic samples; Rush et al., 1996), as well as good convergence with self-report measures of depressive symptoms ($rs=.70$ to .83; Vittengl et al., 2005). Alpha internal consistency for $HRSD_{17}$ in the current data set ranged from .26 to .88 with a median of .80.

2.3.3. Beck Depression Inventory (BDI; Beck et al., 1961)

The BDI is a widely used 21-item self-report measure to assess severity of depressive symptoms. The scale has good psychometric properties, including high internal consistency ($\alpha=.87$), adequate 1-month retest reliability of .60, and appropriate convergence with clinical and other self-report ratings of depressive symptoms (Beck et al., 1988). Alpha internal consistency for BDI in the current data set ranged from .81 to .99 with a median of .92.

2.3.4. Inventory for Depressive Symptomatology — Self Report version (IDS-SR; Rush et al., 1986) — Anxiety/Arousal Subscale

The IDS-SR is a 28-item scale with good psychometric properties (Rush et al., 1996) including high internal

consistency reliability (α=.88) and high convergence with the BDI (r=.78) and $HRSD_{17}$ (r=.67). The 12-item Anxiety/Arousal subscale has shown to have good internal consistency (α=.87; Rush et al., 1996) and has been used in previous research to assess severity of anxiety symptoms (e.g., Ninan et al., 2002). Alpha internal consistency for this subscale ranged from .69 to .87 in the current data set with a median of .83.

2.3.5. Response

Consistent with previous reports (Jarrett et al., 2001), we defined response as (1) an absence of DSM-IV MDD and (2) an $HRSD_{17}$ score of 9 or less. We also calculated the time (in weeks) passed from the diagnostic evaluation until participants achieved response.

2.3.6. Sustained remission

We defined "sustained remission" as (1) an absence of DSM-IV MDD; (2) an $HRSD_{17}$ score of 6 or less for two consecutive weeks; and (3) maintenance of these two criteria throughout the remainder of the acute phase. We also calculated the time (in weeks) passed from the diagnostic screen visit until participants achieved sustained remission (i.e., meeting criteria 1 and 2).

3. Results

3.1. Sample characteristics: pre-cognitive therapy

Of the 156 patients who consented to the study, 31 (20%) met diagnostic criteria for social phobia at presentation. An additional 4 patients met diagnostic criteria for lifetime but did not meet criteria for social phobia at presentation (i.e., "current" social phobia). Other current comorbid diagnosis at presentation included specific phobia (n=21; 13%), panic disorder (n=14; 9%), post-traumatic stress disorder (n=9; 6%), dysthymia (n=8; 5%), attention-deficit disorder (n=1; 1%), bulimia (n=1; 1%), and obsessive-compulsive disorder (which the diagnostician judged to be less clinically significant than MDD) (n=1; 1%).

We examined possible pre-treatment differences between the two groups (i.e., current vs. no current comorbid social phobia) on continuous and on categorical measures by means of t-tests and chi-square analyses, respectively. As can be seen in Table 1, patients with comorbid social phobia reported significantly greater scores on the BDI, $t(153)=3.37$, $P<.01$, and IDS-SR-Anxiety/Arousal Scale, $t(152)=3.23$,

Table 1
Demographic and clinical characteristics at presentation for adult outpatients with recurrent major depressive disorder

Characteristic	With comorbid social phobia (n=31)	Without comorbid social phobia (n=125)	P-value for the difference
Gender, % (no.)			
Female	74.20% (23)	74.40% (93)	P=.98
Race, % (no.)			
European American	80.65% (25)	88.00% (110)	P=.29
Age, M (SD)	41.55 (13.30)	41.13 (10.42)	P=.85
Marital status, % (no.)			
Single	22.58% (7)	15.20% (19)	
Married	45.16% (14)	58.40% (73)	P=.39
Divorced	32.26% (10)	26.40% (33)	
Years of education, M (SD)	15.00 (3.40)	15.52 (2.68)	P=.36
Employment status, % (no.)			
Employed	64.50% (20)	69.60% (87)	P=.66
Primary Depression, % (no.)	22.58 (7)	76.00 (95)	P<.01
Length of current depressive episode (months), M (SD)	38.45 (41.76)	31.88 (40.88)	P=.68
Length of depressive illness (years), M (SD)	21.81 (10.67)	20.63 (9.48)	P=.67
Number of episodes, M (SD)	3.29 (1.42)	3.43 (1.20)	P=.32
Age at onset of depressive episode, M (SD)	19.29 (9.61)	20.10 (9.61)	P=.70
Current double depression, % (no.)	6.45% (2)	4.80% (6)	P=.71
DSM-IV melancholia, % (no.)	25.80 (8)	24.80% (31)	P=.78
Number of comorbid Axis I DSM-IV diagnosis, M (SD)	.48 (.51)	.34 (.60)[a]	P=.23
$HRSD_{17}$ score, M (SD)	21.00 (3.14)	20.52 (3.22)	P=.46
BDI score, M (SD)	31.83 (8.27)	26.67 (7.35)	P<.01
CGI score, M (SD)	4.36 (.61)	4.14 (.46)	P=.03
IDS-SR-Anxiety/Arousal Score, M (SD)	20.27 (.82)	17.31 (.40)	P<.01

Note. $HRSD_{17}$=The Hamilton Rating Scale for Depression 17-item version (Hamilton, 1960); BDI=Beck Depression Inventory (Beck et al., 1961); CGI=Clinical Global Impressions Scale; IDS-SR=The Inventory for Depressive Symptomatology — Self Report version (IDS-SR; Rush et al., 1986).
[a]The number of comorbid diagnoses was corrected for the presence of social phobia comorbidity.

$P<.01$, compared to patients without comorbid social phobia. Diagnosticians rated the depressed patients with social phobia as having more severe depressive symptoms on the Clinical Global Impression-Severity Scale (CGI-S; Guy, 1976) compared to patients without social phobia, $t(152)=2.20$, $P=.03$. In addition, the diagnosis of MDD was "primary" (i.e., first lifetime psychiatric disorder; Feigner et al., 1972) among 76.0% of patients without social phobia compared to only 22.6% of patients with social phobia, χ^2 (1)=31.30, $P<.0001$. Among patients with comorbid social phobia who did not have MDD as the primary diagnosis ($n=24$), social phobia was the most common primary diagnosis ($n=17$; 71%). In other words, most depressed patients with social phobia experienced social phobia (not MDD) as their first lifetime psychiatric illness. The groups did not differ significantly on the $HRSD_{17}$ other descriptors of depressive illness (e.g., age at onset, length of illness, length of current episode, number of episodes, presence of double depression, and presence of melancholia), nor did they differ with respect to average number of comorbid DSM-IV Axis I diagnoses.

3.2. Attrition

Twenty-six patients (17%) dropped out during the course of the 20-session protocol (see Fig. 1). The attrition rates were similar, 22.6% (7) and 15.2% (19), for patients with and without comorbid social phobia, respectively, χ^2 (1)=.97, $P=.33$.

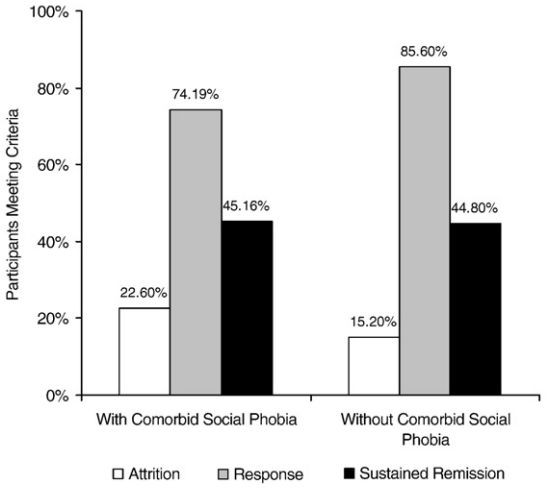

Fig. 1. Attrition, response and sustained remission rates by presence or absence of comorbid social phobia.

3.3. Response and time to response

As can be seen in Fig. 1, 23 of 31 (74.19%) patients with comorbid social phobia vs. 107 of 125 (85.60%) patients without comorbid social phobia achieved response during the course of A-CT, χ^2 (1)=2.33, $P=.13$. Survival analyses further revealed that the two groups did not differ significantly with respect to the time passed until they achieved response, ($M=5.77$ SE=.58] vs. $M=6.13$ [SE=.33]), log-rank=.60, $P=.44$).

3.4. Sustained remission and time to sustained remission

Sustained remission rates were 45.16% (14 of 31) and 44.80% (56 of 125) for patients with and without comorbid social phobia, respectively, χ^2 (1)=.001, $P=.97$ (see Fig. 1). The average time to sustained remission was 6.88 [SE=.49] weeks for patients with social phobia vs. 8.62 [SE=.29] weeks for patients without social phobia, log-rank=.49, $P=.48$.

3.5. Rate of improvement in symptoms of depression and anxiety

In order to examine whether patients with comorbid social phobia showed a different pattern of change in depressive or anxiety symptom severity relative to patients without social phobia, we subjected weekly scores on the three measures (BDI, $HSRD_{17}$, IDS-SR Anxiety/Arousal Subscale) to multilevel linear regression analyses (i.e., three separate analyses). The advantage of a multilevel linear regression analysis is that it uses the data from all participants that entered the study ($N=156$) and therefore is effectively a full intent-to-treat analysis. In each analysis, we first estimated a slope and intercept for each patient. The intercept reflects the score on the respective measure at the first session of A-CT, whereas the slope reflects the decrease in scores per week during the course of A-CT. We then modeled these person-specific parameters (i.e., slope and intercept) as a function of social phobia comorbidity status (see Fig. 2). Note that in this model, the improvement (slope) by group (social phobia status) effect is corrected for the initial severity (intercept).

Scores on each of the scales decreased significantly during the course of treatment (BDI, $b=-1.48$, $t(1770)=-19.39$, $P<.0001$; $HSRD_{17}$; $b=-.98$, $t(1794)=-21.54$, $P<.0001$; IDS-SR Anxiety/Arousal Subscale, $b=-.91$, $t(1760)=-.21.82$, $P<.0001$). Patients with comorbid social phobia reported significantly higher scores on the BDI at baseline relative to patients without social phobia, $b=4.83$, $t(154)=3.29$, $P<.001$. The slopes of change on

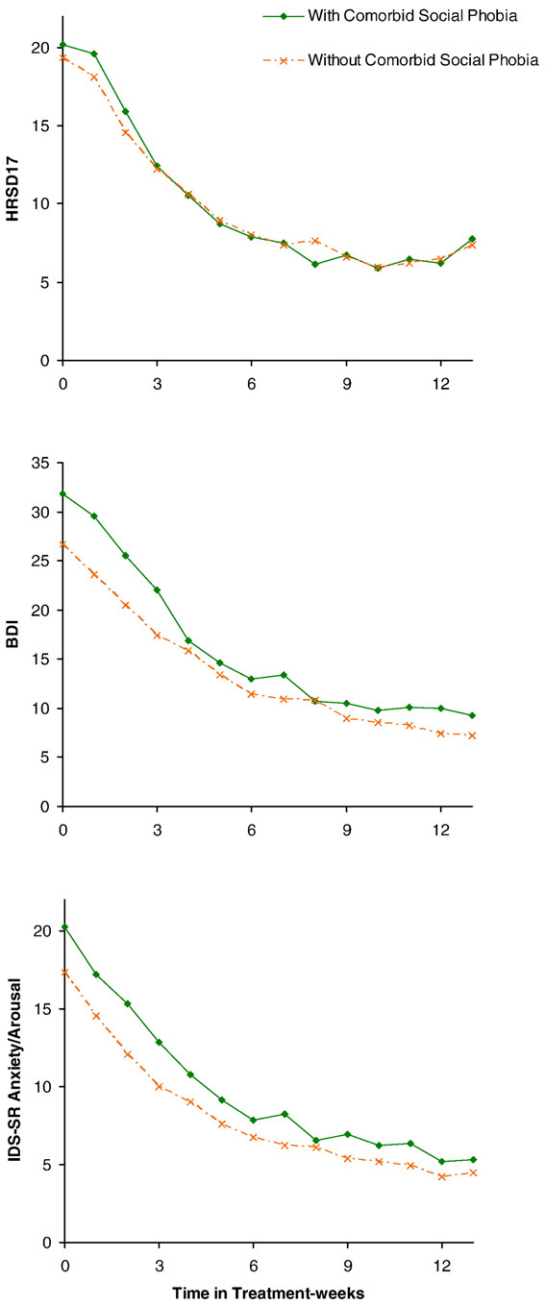

Fig. 2. Change in mean scores of symptoms of depression and anxiety across treatment weeks as a function of presence or absence of comorbid social phobia.

the BDI did not differ significantly between patients with and without social phobia, $b=-.25$, $t(1770)=-1.40$, $P=.16$. There were also no significant differences for baseline $HRSD_{17}$ scores, $b=.94$, $t(154)=1.30$, $P=.20$, or the rate of decline on the $HRSD_{17}$ during the course of treatment, $b=-.07$, $t(1794)=-.64$, $P=.52$. As expected, patients with social phobia reported greater scores on the IDS-SR Anxiety/Arousal Subscale at the first session, $b=2.93$, $t(154)=3.28$, $P<.01$. The groups did not show significant differences in the slope on the IDS-SR-Anxiety/Arousal Scale, $P=.18$.

Our final set of analyses involved a comparison between the two groups with respect to their mean scores on measures of symptom severity (e.g., BDI, $HSRD_{17}$, IDS-SR Anxiety/Arousal Subscale) and global functioning (CGI-S) at the posttreatment visit. A series of *t*-tests revealed no significant differences between the two groups (all Ps $>.43$).

4. Discussion

In this exploratory analysis, we raised questions about the potential impact of comorbid depression and social phobia on both the course and magnitude of change with cognitive therapy. The findings are most relevant to the effect of CT on depressive symptoms in adults who present with (recurrent) MDD and comorbid social phobia. Comorbidity data in the present sample offered support for our focus on the impact of social phobia comorbidity on the outcome of CT for depression. Indeed, social phobia was the most common comorbid diagnosis (20%) observed in our sample. Consistent with descriptive studies, we found that patients with comorbid social phobia who present for the treatment of MDD evidence greater severity in depressive symptoms relative to those without social phobia (Rush et al., 2005). Here, the differences were confined to self-reported depressive symptoms (i.e. BDI) and global clinical ratings (i.e. CGI). Despite greater severity in depressive symptoms at presentation, we found no evidence to suggest that social phobia diminishes the outcome of CT for depression. Specifically, the two groups did not differ significantly in: (1) attrition rates, (2) response rates or time to response, (3) sustained remission rates or time to sustained remission; or (4) rate of improvement in symptoms of depression or anxiety.

There was some evidence suggesting that patients with social phobia in this sample may compare well to participants in clinical trials evaluating CBT for social phobia. Indeed, the onset of social phobia preceded the onset of MDD for many of the patients (71%) in our sample, perhaps suggesting that social phobia was implicated in the development of MDD. This hypothesis is consistent with recent findings reported by Beesdo et al. (2007). Specifically, using a community sample of over 3000 participants, Beesdo et al. demonstrated that social phobia was consistently associated

with subsequent development of depression. Our analyses were limited, however, by omitting typical measures of social phobia severity, including anxiety and avoidance of social interaction and performance situations. The lack of these domain-specific measures also limits inference with respect to the improvements in social anxiety that occur with CT of depression. However, as reflected by significant reductions on IDS-SR Anxiety/Arousal subscale, CT for MDD is associated with improvements in anxiety, a finding that has also been observed by Ninan et al. (2002).

Two other limitations deserve mention. First, we only had sufficient statistical power to detect medium to large effect sizes (d=.87, .80, and .69, for the attrition, response, and sustained remission analyses, respectively); we may have missed small effects. Second, although the two groups (MDD with comorbid SP vs. MDD without comorbid SP) were not significantly different with respect to the number of comorbid conditions, we may not be able to rule out the possibility that the presence of other comorbid conditions in this sample obscures a group difference based on the presence or absence of social phobia.

Clearly, the results of our exploratory analyses underscore gaps in the literature on treatment outcome for patients with comorbid MDD and social phobia. Hopefully, this report encourages researchers to measure symptoms more broadly. If our findings are replicated, they suggest that CT for depression is flexible enough to treat the depressive symptoms of patients with MDD but also suffer from social phobia, and thus may indeed be an appropriate choice early on in the treatment of patients with this comorbidity profile (Chambless et al., 1997; Ledley et al., 2005). In this future work on the treatment of comorbid MDD and SP, researchers may consider the possibility that the appropriate treatment plan depends on both the severity of each of the disorders as well as the temporal sequencing in the onset of the disorders. Also helpful to clinicians who treat patients with comorbid MDD and social phobia would be research focusing on the relationship between taking antidepressant medication prior to the initiation of CT and the outcome of CT. Indeed, many patients presenting for psychotherapy are already taking medication such as selective serotonin reuptake inhibitors (Olfson et al., 2002).

Role of funding source

This research was supported in part by National Institute of Mental Health (NIMH) Grants MH-38238, and MH-01571 to Robin B. Jarrett. Jasper A. J. Smits is supported by NIMH Grant MH-075889. The NIMH had no further role in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the paper for publication.

Conflict of interest

All authors declare that they have no conflicts of interest.

Acknowledgements

We are grateful to the numerous colleagues who provided clinical and research support in producing the clinical data sets used in this report and in treating and following the patients as expressed in Jarrett et al. (2001). We would also like to thank Margaret Marcotte, M.S. for her assistance in the data analysis. We appreciate the administrative support of Eric J. Nestler, M.D., Ph.D., the Lou and Ellen McGinley Distinguished Chair in Psychiatric Research and Chairman of the Department of Psychiatry. This research was presented in part at the Annual Convention of the Association for Behavioral and Cognitive Therapies, Philadelphia, in November 2007.

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