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INVITED REVIEW

Empirically supported psychological interventions for social phobia in adults: a qualitative review of randomized controlled trials

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Background. Social phobia is a chronic disorder that results in substantial impairment. We conducted a qualitative review of randomized controlled trials (RCTs) of psychological interventions for social phobia.

Method. Articles were identified through searches of electronic databases and manual searches of reference lists. They were classified by psychological interventions evaluated. Data regarding treatment, participants and results were then extracted and tabulated. We identified which psychological interventions are empirically supported, using the scheme proposed by Chambless & Hollon (*Journal of Consulting and Clinical Psychology* 1998, **66**, 7–18).

Results. Thirty studies evaluating the efficacy of social skills training (SST), exposure therapy and/or cognitive treatments were identified. Cognitive behavior therapy (CBT), involving cognitive restructuring and exposure to feared and avoided social situations or behavioral experiments, was found to be an efficacious and specific treatment for social phobia. Exposure therapy was found to be an efficacious treatment since most of the evidence of its efficacy was from comparisons with no treatment. There were mixed findings regarding the relative efficacy of CBT and *in vivo* exposure. Some studies reported that the interventions were equivalent, while others found that patients treated with CBT had a better outcome. There was little evidence to support the use of SST.

Conclusions. CBT is the psychological intervention of choice for social phobia. The findings of this review are compared to those of other major reviews and limitations are discussed.

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Key words: Empirically supported psychological interventions, qualitative review, randomized controlled trials, social phobia.

Introduction

Social phobia is characterized by a marked and persistent fear of social or performance situations in which the person may be scrutinized by others and fears coming across in way that would be embarrassing or humiliating (APA, 1994). It is a chronic disorder, which usually begins in early adolescence and results in considerable impairment that increases over an individual's lifespan (Wittchen & Fehm, 2003). A lifetime prevalence ranging from 3% to 13% has been reported by epidemiological and community studies (APA, 1994). Effects on role functioning and quality of life are most severe for people with generalized social phobia and co-morbid avoidant personality disorder (Kessler, 2003).

The efficacy of psychological treatments for social phobia has been addressed in several reviews (e.g. Chambless *et al*. 1998; DeRubeis & Crits-Christoph, 1998; Chambless & Ollendick, 2001; Roth & Fonagy, 2005). Nonetheless, differing opinions exist as to what constitutes sufficient evidence to consider a practice evidence-based. Roth & Fonagy (2005, p. 480) required 'replicated demonstration of superiority to a control condition or another treatment condition, or a single, high-quality randomized control trial' (RCT), in addition to other criteria. In contrast, Chambless & Hollon (1998) differentiated efficacious and specific, efficacious, and possibly efficacious therapies. According to these criteria, for a designation of efficacious and specific, the therapy must have been shown to be 'statistically significantly superior to pill or psychological placebo or to an alternative *bona fide* treatment in at least two independent research

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settings' (p. 18). If the therapy proved more beneficial than no treatment in at least two settings, it would be considered efficacious. If there was only one study supporting the therapy's efficacy, or all the research has been conducted in one setting, the therapy would be considered possibly efficacious, pending replication. DeRubeis & Crits-Christoph (1998) used these criteria.

In this article, we review studies of psychological interventions for social phobia in adults and provide an update on which ones are empirically supported, using the scheme proposed by Chambless & Hollon (1998). This is a qualitative review, not a meta-analysis.

Method

A literature search for trials of psychological interventions for social phobia published up to the end of 2005 was conducted. Articles were identified through electronic searches of the PsycINFO and PubMed databases. A search strategy containing the following key words and combinations was used: (SOCIAL PHOBIA or SOCIAL ANXIETY DISORDER) and (RANDOM, RANDOMLY, RANDOMISE, RANDOMIZE, RANDOMISED, or RANDOMIZED). The PubMed database was also searched for RCTs that contained the terms SOCIAL PHOBIA or SOCIAL ANXIETY DISORDER. Manual searches of the reference lists of articles and chapters were also conducted. The first author completed the literature search.

Studies were included if they satisfied the following criteria: (1) evaluated the treatment of adult patients with a diagnosis of social phobia; (2) randomly allocated patients to psychological treatment or a no treatment, placebo or alternative treatment condition; (3) provided a clear description of the treatment method; and (4) were written in English. Studies were excluded if they satisfied any of the following criteria: (1) evaluated the efficacy of psychological treatment in a mixed sample of patients without examining diagnostic groups separately; (2) selected patients on the basis of them being 'suitable' for a particular intervention; and (3) compared patients on the basis of them being a particular type of responder (e.g. behavioral) in a test.

Articles were obtained, read and classified on the basis of which psychological interventions were evaluated. Data regarding treatment, participants and results were then extracted and tabulated. Studies were reviewed with a particular focus on comparisons between psychological interventions and no treatment or minimal treatment, psychological or pill placebo, and pharmacological or other psychological treatments. Finally, we identified which psychological interventions are empirically supported, using the scheme proposed by Chambless & Hollon (1998).

Results

Thirty studies were identified that met our inclusion criteria. These studies evaluated the efficacy of social skills training (SST) ($n=2$), exposure therapy ($n=15$), and cognitive treatment ($n=25$) for social phobia (see Fig. 1). A number of trials investigated more than one intervention. There were no trials involving more traditional dynamic or humanistic approaches.

SST

The skills deficit model proposes that some forms of psychiatric disorder are caused or worsened by lack of social competence, and can be treated through training in social skills (Trower *et al*. 1978). SST for social phobia involves identifying, discussing, and practicing feared situations. Behavioral modification techniques include the provision of instructions, modeling, role-rehearsal and feedback (Stravynski *et al*. 1982, 2000). Patients are encouraged to practice the skills they have learned in natural settings between sessions (Ost *et al*. 1981).

In RCTs, SST has been compared to behavioral treatment without training in social skills and SST with cognitive modification. An overview of these studies is presented in Table 1. In these trials, SST was conducted over a mean of 13 sessions (range 12–14).

Stravynski *et al*. (2000) reported that the rates of patients in remission following an intervention focused on improving interpersonal relationships with SST were equivalent to those following an intervention focused on improving interpersonal relationships without SST. SST may produce improvement in social phobia because of the 'opportunity it provides for practice of previously avoided social responses in a non-threatening environment' (Spence, 1994, p. 266).

Exposure therapy

Learning theory postulates that the origin of neuroses can be dated back to a particular occasion of immense distress or the repeated arousal of anxiety in a recurring situation, and stimuli comparable to those in the precipitating situations can later evoke phobic reactions (Wolpe, 1973). Extinction is the 'progressive weakening of a habit though the repeated evocation without reinforcement of the responses that manifest it' (p. 19). The paradigm of experimental extinction generated exposure techniques. Exposure treatment for social phobia involves constructing and then working through a hierarchy of feared social and performance situations, starting with the least anxiety-provoking situation and remaining in it until fear has

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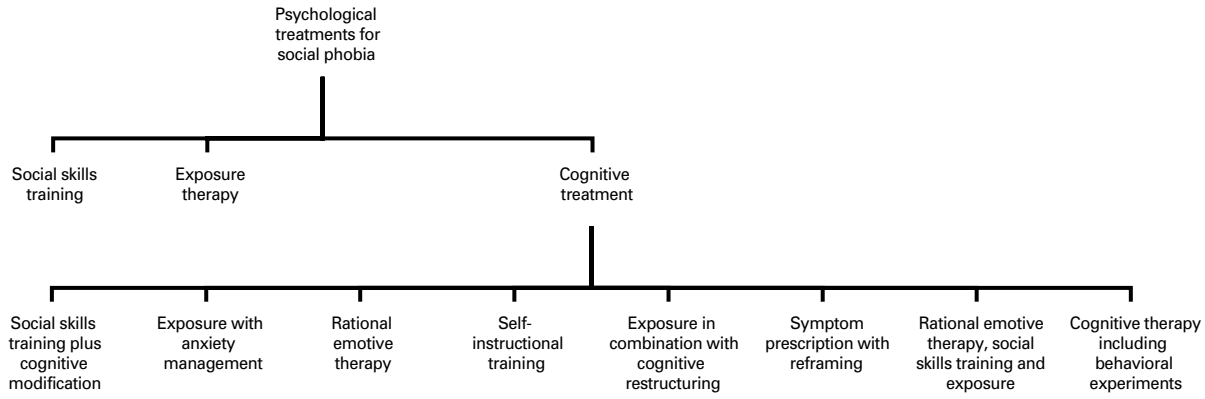

Fig. 1. Classification of psychological treatments for social phobia in randomized controlled trials.

decreased before moving on to the next situation. Flooding is the intensive application of exposure.

In RCTs, exposure therapy for social phobia has been evaluated against the effects of no treatment, relaxation training, pill placebo, pharmacological treatment, and cognitive therapy (CT). An overview of these studies is presented in Table 1. Exposure therapy in these trials was conducted over a mean of 12 sessions (range 6–20).

Exposure to feared social and performance situations has been shown to produce significantly greater improvements in social phobia symptoms than a waiting-list control condition (Butler *et al*. 1984; Hope *et al*. 1995; Mersch, 1995; Salaberria & Echeburua, 1998; Hofmann, 2004; Hofmann *et al*. 2004). Follow-up assessments up to 18 months after treatment have shown that the gains patients make in exposure treatment are largely maintained (Butler *et al*. 1984; Hope *et al*. 1995; Mersch, 1995; Salaberria & Echeburua, 1998). Not only do fear and avoidance decrease over the course of treatment, but in some studies there is evidence of cognitive change over exposure treatment too (Mersch, 1995; Salaberria & Echeburua, 1998; Hofmann, 2004).

In one trial, flooding was shown to be superior to pill placebo on self-reported social avoidance and distress, whereas atenolol, a beta-blocker, was not (Turner *et al*. 1994). Independent evaluators judged flooding patients, but not atenolol patients, to be markedly more improved, have less symptomatology and avoid less social interactions than placebo patients. On an impromptu speech task, patients in the flooding group reported significantly more improvement in distress and positive and negative thoughts at the end of treatment than those in the other conditions.

Blomhoff *et al*. (2001) examined the efficacy of sertraline, exposure therapy and combined treatment in generalized social phobia. General practitioners who had received approximately 30 hours of training in assessment and exposure therapy for social phobia provided the treatment (Haug *et al*. 2000). Markedly more sertraline- than non-sertraline-treated patients responded but no marked difference was observed between exposure- and non-exposure-treated patients (Blomhoff *et al*. 2001). Nevertheless, quality of implementation was not measured. From the end of treatment to 6-month follow-up, however, patients who had been treated with exposure therapy plus placebo showed further improvement, whereas patients who had been treated with exposure therapy combined with sertraline or sertraline plus general medical care showed a tendency to deteriorate (Haug *et al*. 2003).

Cognitive treatment

According to cognitive theory, exaggerated fear of being the focus of attention, of having one's 'weaknesses' exposed, and as a result being judged negatively by others leads to social anxiety (Beck *et al*. 1985). 'A vicious cycle is created whereby the anticipation of an absolute, extreme, irreversible outcome tends to make a person more fearful, defensive, and inhibited when entering the situation' (p. 151).

In RCTs, the efficacy of cognitive interventions has been evaluated against the effects of no treatment, supportive therapy, relaxation training, SST, symptom prescription, exposure therapy, pill placebo and pharmacological treatments. An overview of these studies is presented in Table 1. Cognitive interventions in these trials were conducted over a mean of 12 sessions (range 3–20).

Some studies have examined the benefit of adding cognitive techniques to behavioral treatments. SST, alone or in combination with cognitive modification has been evaluated in patients with diffuse social phobia and avoidant personality disorder (Stravynski *et al*. 1982). Both interventions produced significant

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Table 1. *Psychological treatments for social phobia*[a]

Study	Treatment/s	Results
Stravynski *et al*. (1982)	Social skills training (SST) or SST plus cognitive modification (SST-CM)	SST and SST-CM patients improved to a similar extent
Butler *et al*. (1984)	Exposure with anxiety management (E-AM) or E with associative therapy (E)	E-AM and E were better than WL, and E-AM was superior to E
Emmelkamp *et al*. (1985)	Exposure (E) or rational-emotive therapy (RET) or self-instructional training (SIT)	RET was superior to SIT on phobic anxiety
Mattick & Peters (1988)	Exposure (E) or E and cognitive restructuring (E-CR)	End-state functioning significantly better in E-CR than E
Clark & Agras (1991)	Cognitive behavior therapy with placebo (CBT-P) or CBT with buspirone (CBT-B) or buspirone (B)	Subjective anxiety during a musical performance and a speech reduced significantly more in CBT with B or P than B or P only
Gelernter *et al*. (1991)	Cognitive-behavioral therapy (CBT) or phenelzine and self-exposure (P-SE) or alprazolam and SE (A-SE)	All groups improved comparably on self-report measures with one exception – P-SE patients had less trait anxiety at post-treatment and follow-up than other groups
Al-Kubaisy *et al*. (1992)	Clinician-accompanied exposure plus self-exposure (CAE-SE) or self-exposure (SE)	For social phobia, CAE-SE was better than SE on some fear measures
Scholing & Emmelkamp (1993*a*)	Exposure followed by cognitive therapy (E-CT) or CT followed by E (CT-E) or integrated cognitive behavioral treatment (CBT)	No marked differences in outcome between different treatment packages
Scholing & Emmelkamp (1993*b*)	Exposure (E), cognitive therapy followed by E (CT-E) or integrated cognitive behavioral treatment (CBT)	At the end of both blocks of treatment and at 3-month follow-up no marked differences in outcome between treatment packages
Newman *et al*. (1994)	Behavioral treatment for public speaking anxiety (BT)	Fear of negative evaluation and behavioral anxiety improved significantly more in BT than WL
Turner *et al*. (1994)	Flooding (F) or atenolol (A)	At post-treatment, F was better than P, while A was not. F was better than A on some behavioral measures
Akillas & Efran (1995)	Symptom prescription with or without reframing (SP-R or SP)	SP-R better than SP or WL on self-reported social anxiety and fear of negative evaluation
Hope *et al*. (1995)	Cognitive behavioral treatment (CBT) or exposure (E)	CBT and E improved significantly more than WL. CBT and E improved similarly
Mersch (1995)	Exposure (E) or an integrated treatment (I)	Treatment better than WL. E and I did not differ significantly
Scholing & Emmelkamp (1996*a*)	See Scholing & Emmelkamp (1993*a*) for details	No significant differences between treatment packages at 18-month follow-up
Scholing & Emmelkamp (1996*b*)	See Scholing & Emmelkamp (1993*b*) for details	No main effect detected for treatment package
Taylor *et al*. (1997)	Cognitive restructuring followed by exposure (CR-E) or associative therapy followed by E (AT-E)	CR was significantly more efficacious than AT but did not improve outcome in later E
Heimberg *et al*. (1998)	Cognitive behavioral therapy (CBT) or phenelzine therapy (PT)	CBT and PT had significantly higher response rates than EST and P – CBT and PT were comparable

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Salaberria & Echeburua (1998)	Exposure alone (E) or with cognitive therapy (E-CT)	WL did not improve. E and E-CT improved markedly with no differences between them
Liebowitz *et al*. (1999)	See Heimberg *et al*. (1998) for details	Relapse was equivalent in PT and CBT during maintenance but tended to be greater in PT during treatment-free follow-up
Morgan & Raffle (1999)	Standard cognitive behavior therapy alone (CBT) or with instructions to drop safety behaviors (CBT-SB)	CBT-SB resulted in a more marked decrease in social phobia than CBT
Cottraux *et al*. (2000)	Cognitive therapy followed by social skills training (CT-SST)	Over first 6 weeks of treatment, CT was more efficacious than ST. At 12 weeks, CT-SST was superior to ST
Haug *et al*. (2000)	Exposure with sertraline (ES) or E with placebo (EP) or general medical care with S (GMCS)	Severity of target complaints decreased markedly. Largest decrease was in combined treatment group
Otto *et al*. (2000)	Cognitive behavioral therapy (CBT) or clonazepam (CL)	Endpoint analyses revealed groups did not differ markedly on any outcome measure
Stravynski *et al*. (2000)	Interpersonal therapy with social skills training (IPT-SST) or without (IPT)	Patients' social phobia improved markedly in both IPT-SST and IPT
Blomhoff *et al*. (2001)	See Haug *et al*. (2000) for details	After 24 weeks of treatment, markedly more S- than non-S-treated patients responded but not E- than non-E-treated patients
Gruber *et al*. (2001)	Cognitive behavioral treatment alone (CBT) or computer-assisted (CBT-C)	On behavioral ratings CBT and CBT-C improved significantly more than WL – CBT and CBT-C did not differ markedly
Oosterbaan *et al*. (2001)	Cognitive therapy (CT) or moclobemide (MOC)	At 2-month follow-up, CT patients were markedly more improved than MOC and P patients
Furmark et al. (2002)	Cognitive behavioral therapy (CBT) or citalopram (CIT)	67% of CBT and CIT were classified as responders compared to 17% of WL
Clark *et al*. (2003)	Cognitive therapy (CT) or fluoxetine plus self-exposure (FL-SE)	At post-treatment (16 weeks), CT was superior to FL-SE and P-SE on all social phobia measures – FL-SE and P-SE were equivalent
Haug *et al*. (2003)	See Haug *et al*. (2000) and Blomhoff *et al*. (2001) for details	From week 24 to 52, EP and GMCP improved markedly whereas ES and GMCS tended to deteriorate
Stangier *et al*. (2003)	Individual cognitive therapy (CT-individual) or group CT (CT-group)	Social phobia improved significantly more in CT-individual than CT-group
Davidson *et al*. (2004)	Cognitive behavioral therapy (CBT) or fluoxetine (FLU) or CBT plus FLU (CBT-FLU) or CBT plus placebo (CBT-P)	For intention-to-treat sample, response rates were FLU 50.9%, CBT 51.7%, CBT-FLU 54.2%, CBT-P 50.8% and P 31.7%
Herbert *et al*. (2004)	Standard cognitive behavior therapy (S-CBT) or extended CBT (E-CBT)	In intent-to-treat analyses S-CBT was superior to E-CBT
Hofmann (2004)	Cognitive behavioral therapy (CBT) or exposure (E)	CBT and E were equivalent in outcome but superior to WL at post-treatment
Hofmann *et al*. (2004)	See Hofmann (2004) for details	Change in negative self-focused thoughts associated with change in social anxiety in CBT but not E

Control condition abbreviations: WL, waiting list; P, placebo; EST, educational-supportive therapy; ST, supportive therapy.

[a] A more detailed version of this table is available on the Journal's website (http://journals.cambridge.org).

improvements in social avoidance and distress, fear of negative evaluation, irrational beliefs, depression, social isolation and work inadequacy, although SST with cognitive modification did not lead to greater improvements than SST alone. There are a number of reasons why differences were not observed between the conditions. First, cognitive restructuring may not be an efficacious intervention for patients who have avoidant personality disorder in addition to social phobia. Nonetheless, in a recent RCT that compared CT, fluoxetine plus self-exposure and placebo plus self-exposure, presence of avoidant personality disorder did not predict treatment response (Clark *et al*. 2003). Second, cognitive restructuring may not have supplemented the efficacy of SST because it was administered at different times than SST, so that each component of treatment was self-contained (Heimberg & Barlow, 1988).

Exposure to feared and avoided social situations plus anxiety management training involving progressive muscle relaxation, distraction from symptoms and rational self-talk to address maladaptive thoughts has been shown to markedly reduce fear of negative evaluation, phobic severity and depression (Butler *et al*. 1984). Gains made in treatment were significantly greater than those made over a waiting-list control condition. Of note, in a comparison treatment of exposure to feared and avoided social situations plus associative therapy, fear of negative evaluation did not change significantly. At 6-month follow-up, exposure plus anxiety management was superior to exposure plus the non-specific control treatment on patient-rated phobic severity, social avoidance and fear of negative evaluation.

Rational emotive therapy (RET) places an emphasis on rationally disputing irrational beliefs that are common among social phobics and produces significant reductions in anxiety (Emmelkamp *et al*. 1985). In that study, few differences in outcome emerged between RET and exposure *in vivo*. The issue of whether better results are obtained when these interventions are administered in a sequential, or integrated manner has been the subject of several investigations.

In one RCT, an integrated treatment of RET, SST and *in vivo* exposure did not have a better outcome than *in vivo* exposure alone (Mersch, 1995). Similarly, Scholing & Emmelkamp (1993*b*) found that exposure *in vivo* alone, RET followed by exposure *in vivo* and an integrated cognitive behavioral treatment were equally efficacious for patients with generalized social phobia. Moreover, in a sample of social phobics with a fear of blushing, trembling or sweating in social situations as the main problem, exposure *in vivo* followed by RET, RET followed by exposure *in vivo* and an integrated cognitive behavioral treatment all led to marked improvements in symptoms over the course of treatment, with no significant differences in outcome between the different treatment packages (Scholing & Emmelkamp, 1993*a*). Notwithstanding these findings, another study found that group-guided exposure and cognitive restructuring was significantly more efficacious than group-guided exposure alone on end-state functioning, behavioral approach and self-rated avoidance (Mattick & Peters, 1988). The integrated treatment had the same format as the exposure condition, except patients were instructed to use cognitive techniques during exposure. Cognitive restructuring combined systematic rational restructuring with aspects of RET.

Cognitive behavioral group therapy (CBGT) developed by Heimberg and colleagues is based on Beck *et al*.'s (1985) model of logical analysis and hypothesis testing and consists of cognitive restructuring integrated into in-session role-played exposure to feared situations and *in vivo* exposure homework assignments (Hope *et al*. 1995). 'Integration of the cognitive and behavioral interventions maximizes access to central cognitions elicited by the anxiety-provoking situations and allows social phobics' irrational thoughts to be challenged with behavioral evidence' (p. 640). This and other group-based cognitive behavioral interventions based on Beck *et al*.'s (1985) model have been shown to be superior to a waiting-list control condition in the treatment of symptoms of social phobia, and over follow-up periods of up to 1 year treatment gains are largely maintained (Hope *et al*. 1995; Salaberria & Echeburua, 1998; Gruber *et al*. 2001; Furmark *et al*. 2002; Hofmann, 2004; Hofmann *et al*. 2004). CBGT is also more efficacious than educational-supportive group therapy in ameliorating social phobia (Heimberg *et al*. 1998).

While some studies have reported that group cognitive behavioral interventions do not lead to greater gains than group exposure therapy alone (Hope *et al*. 1995; Salaberria & Echeburua, 1998), others have found that CBGT has a superior outcome. Hofmann (2004) found that although CBGT and exposure group therapy were equivalent in outcome at post-treatment, only CBGT patients continued to improve after treatment termination, which resulted in markedly lower social anxiety in CBGT than exposure group therapy patients at 6-month follow-up.

Benzodiazepines such as alprazolam and clonazepam, alone or in combination with instructions for self-exposure have been compared to CBGT. In one study, while patients who completed a course of treatment with clonazepam reported markedly less fear of negative evaluation and social interaction anxiety and more assertiveness than CBGT completers

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at post-treatment assessment, endpoint analyses revealed that the groups did not differ on any outcome measure (Otto *et al*. 2000). Another study compared CBGT, alprazolam plus self-exposure, phenelzine plus self-exposure and pill-placebo plus self-exposure (Gelernter *et al*. 1991). Patients assigned to phenelzine plus self-exposure reported lower levels of trait anxiety at post-treatment and follow-up than those in the other groups. Groups improved comparably on other self-report measures, however.

The 5-HT_{1A} partial agonists are a newer class of anxiolytic agent than the benzodiazepines (Stahl, 1996). In one RCT, musicians with a problem with performance anxiety and a diagnosis of social phobia who received CBGT with placebo or buspirone had a significantly better outcome than those who received buspirone or placebo alone in terms of pre- to post-treatment improvements in subjective anxiety during a musical performance and during a speech (Clark & Agras, 1991). Over the 1-month follow-up period, musicians assigned to CBGT plus placebo had a superior outcome on confidence as a performer than those assigned to buspirone alone, placebo alone and CBGT plus buspirone.

While treatment with a selective serotonin reuptake inhibitor (SSRI) such as fluoxetine may produce more change in symptoms of social phobia over the initial weeks of treatment, at the end of treatment it has been reported that fluoxetine, CBGT and CBGT plus fluoxetine do not differ from one another (Davidson *et al*. 2004). Symptoms of social phobia have also been shown to improve markedly and comparably with CBGT and the SSRI citalopram (Furmark *et al*. 2002).

Monoamine oxidase inhibitors such as phenelzine have also been compared to CBGT. Over the course of treatment while phenelzine was better than CBGT on some measures, both were superior to a pill-placebo condition and educational-supportive group therapy (Heimberg *et al*. 1998). To examine the effects of maintenance treatment and persistence of treatment gains following treatment discontinuation, responders to either phenelzine or CBGT entered maintenance and treatment-free follow-up phases (Liebowitz *et al*. 1999). Although relapse during maintenance did not differ between phenelzine and CBGT, there was a tendency for more phenelzine than CBGT patients to relapse during treatment-free follow-up. Furthermore, among patients with generalized social phobia, relapse during the study was significantly greater with phenelzine than CBGT. Medications may produce a response that is more rapid and complete but less enduring than response to cognitive behavioral treatment. Nonetheless, CT has been shown to reduce the symptoms of social phobia significantly more than the reversible inhibitor of monoamine oxidase A (RIMA) moclobemide (Oosterbaan *et al*. 2001).

Although most patients respond to existing cognitive behavioral interventions (Heimberg *et al*. 1998), fewer fully remit (Salaberria & Echeburua, 1998; Otto *et al*. 2000) and it is apparent that there is scope for further improvement (Clark *et al*. 2003).

In a theoretical paper, Clark & Wells (1995) postulated that the tendency for social phobics to interpret social situations in a threatening manner is the result of various dysfunctional beliefs. Social phobics believe that when they enter particular social situations 'they are in danger of behaving in an inept and unacceptable fashion', and that 'such behavior will have disastrous consequences in terms of loss of status, loss of worth, and rejection' (pp. 69–70). A complex constellation of affective, behavioral, cognitive and somatic changes is activated when a social phobic perceives a social situation in this manner. It is argued that several processes prevent disconfirmation of dysfunctional beliefs about the danger inherent in social situations and thus maintain social anxiety. These maintenance processes include self-focused attention, in-situation safety behaviors, anxiety-induced performance deficits, and anticipatory and post-event processing.

Compared to controls, social phobics overestimate the likelihood that unpleasant social events will occur (Lucock & Salkovskis, 1988) and underestimate their ability to cope with embarrassing events (Edelmann, 1985). They underestimate their public-speaking performance compared to ratings made by observers and this difference is greater than that seen in non-clinical subjects (Rapee & Lim, 1992). Patients with generalized social phobia are more likely than controls to interpret ambiguous social events in a negative manner and respond in a catastrophic way to mildly negative social events (Stopa & Clark, 2000).

Social phobics' cognitions may not be data driven because they do not carefully monitor others' responses in social situations (Stopa & Clark, 1993). When expecting to give a speech, for example, anxious individuals attend more to internal than external cues (Mansell *et al*. 2003), and the more they notice body sensations during their speech, the more they overestimate how anxious they look and underestimate how well they come across (Mansell & Clark, 1999).

When anxious in social situations, social phobics are significantly more likely than controls to experience negative images of the self from an observer perspective (Hackmann *et al*. 1998). 'Early unpleasant experiences may lead to the development of excessively negative images of their social selves that are repeatedly activated in subsequent social situations and fail

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to update in the light of subsequent, more favourable experiences' (Hackmann *et al*. 2000, p. 601). When holding a negative self-image in mind during a conversation, socially anxious individuals feel more anxious, use more safety behaviors and overestimate to a greater extent how poorly they come across, and the social interaction becomes contaminated because both parties rate the conversation as poorer (Hirsch *et al*. 2004). Interestingly, when socially anxious subjects appraise their social performance after viewing it using video, the ratings are closer to those made by independent observers than those made without viewing the video (Rapee & Hayman, 1996). The therapeutic effects of video feedback are improved by cognitive preparation involving asking individuals to predict what they think they will see in the video, close their eyes and develop an image of how they think they came across, and then watch the video as though they are watching a stranger (Harvey *et al*. 2000).

CT for social phobia based on Clark & Wells (1995) model aims to reverse the processes involved in maintaining the disorder and involves developing an idiosyncratic version of the model with patients, a self-focused attention and safety behaviors experiment, focusing attention on the social situation, video feedback following cognitive preparation, widespread use of behavioral experiments to test fears concerning various social situations, addressing problematic anticipatory and post-event processing, and identification and modification of dysfunctional assumptions using behavioral experiments and cognitive restructuring (Clark *et al*. 2003). The addition of instructions to drop safety behaviors has been shown to improve outcome in standard CBT for social phobia (Morgan & Raffle, 1999). Moreover, exposure with instructions to decrease safety behaviors under a cognitive rationale of disconfirming negative thoughts is more efficacious in reducing anxiety and belief in feared outcomes than exposure with instructions to decrease safety behaviors under an extinction rationale or exposure alone with no instructions to change safety behaviors (Kim, 2005).

In a RCT of treatments for generalized social phobia, CT was shown to be significantly more efficacious than fluoxetine plus self-exposure and placebo plus self-exposure in reducing social phobia, whereas both of the latter did not differ markedly (Clark *et al*. 2003). For the social phobia composite measure, pre- to post-treatment effect sizes were 2.14 for CT, 0.92 for fluoxetine plus self-exposure and 0.56 for placebo plus self-exposure, and pre-treatment to 12-month follow-up effect sizes were 2.53 for CT and 1.36 for fluoxetine plus self-exposure. It was noted that these effect sizes are larger than those reported in other trials of cognitive behavioral treatments. Nevertheless, CT was conducted by clinical psychologists who were knowledgeable and skilled in the use of cognitive behavioral therapies for anxiety.

Table 2. *Empirically supported psychological interventions*[a] *for social phobia*

	Intervention	Evidence
Efficacious and specific interventions	Cognitive behavior therapy for social phobia	Heimberg *et al*. (1998); Clark *et al*. (2003)
Efficacious interventions	Exposure therapy for social phobia	Turner *et al*. (1994); Hope *et al*. (1995)

[a] Using the scheme proposed by Chambless & Hollon (1998) for determining when a psychological intervention for a specific disturbance may be considered established.

In a further RCT of CT for social phobia, a version of the individual CT program was compared with a group version of the program (Stangier *et al*. 2003). Therapists in the trial only had a modest amount of training in the intervention. Individual CT showed larger pre- to post-treatment effect sizes than group CT on social phobia measures (1.17 *versus* 0.55). The difference in effect sizes between the treatments increased over the follow-up period, and pre-treatment to 6-month follow-up effect sizes were 1.57 and 0.74, respectively, on the social phobia measures. Nonetheless, the effect sizes for individual CT were smaller than those obtained by Clark *et al*. (2003). While differences in therapist training and experience may have contributed to the different outcomes, it is also noteworthy that the individual CT program was not identical in the trials. Only sessions 1–7 of individual CT in the Stangier *et al*. (2003) study followed the London-Oxford treatment closely, and the behavioral experiments that tend to dominate sessions 8–16 were not conducted (D. M. Clark, personal communication). Instead, cognitive work on schemas took up the majority of the second half of treatment rather than being conducted alongside behavioral experiments. Further research is required to determine whether CT for social phobia is more efficacious than other cognitive behavioral interventions.

Discussion

For the treatment of social phobia, there is little evidence to support the use of SST. The utility of a SST approach has also been questioned on the grounds that socially anxious individuals may have adequate social skills in their repertoire (Clark & Arkowitz, 1975).

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In several research settings, exposure therapy has been found to be more efficacious than no treatment for social phobia. One study showed that exposure was superior to pill placebo and a beta-blocker. Exposure therapy may therefore be considered an efficacious, but not specific, treatment for social phobia at this stage (see Table 2).

CBT for social phobia has been shown to be efficacious and specific. Educational-supportive group therapy, pill placebo, placebo plus self-exposure and fluoxetine plus self-exposure produce less change in symptoms. Phenelzine may produce a less enduring response than CBT. There are mixed findings regarding the relative efficacy of cognitive behavioral and exposure treatments. While some studies have shown that they lead to comparable improvements in social anxiety and avoidance, others have found that patients treated with CBT have a better outcome.

A number of problems may be encountered in exposure treatment for social anxiety, which may reduce the efficacy of this intervention. These include the difficulty of specifying graduated and repeatable tasks because social situations are unpredictable and variable, difficulties in prolonging exposure because of the brevity of many social situations, problems securing sufficient engagement during exposure due to dissociation from external cues, and dealing with fear of negative evaluation which is a fundamental aspect of social phobia (Butler, 1985). Given that exposure alone may not markedly improve fear of negative evaluation, attention to cognitive factors may be especially important in treatment (Butler *et al*. 1984).

The conclusions of this review are generally consistent with and update those of other reviews. DeRubeis & Crits-Christoph (1998) also used the scheme proposed by Chambless & Hollon (1998) for determining when a psychological intervention for a specific disturbance may be considered empirically supported, and classified exposure therapy and CBT as efficacious treatments for social phobia. Nonetheless, since their review more controlled evaluations of CBT have been published. Roth & Fonagy (2005) concluded that exposure therapy and CT in combination with exposure have clear evidence of efficacy. Efficacious, and efficacious and specific treatments for social phobia were not differentiated, however. They suggested that SST might best be kept for patients with established problems in social performance.

This review has a number of limitations. First, only articles written in English were reviewed. Second, we excluded single case studies, case series, open trials of therapies, and controlled comparisons of interventions in which patients were not randomly allocated to treatment conditions. RCTs are often considered the 'gold standard of evidential enquiry' (Roth & Parry, 1997, p. 369) and remain the best way to test ideas of causal agency (Crits-Christoph *et al*. 2005). Although it has been argued that clinicians need information from RCTs in order to make treatment recommendations and provide evidence-based interventions, it has also been argued that RCTs lack ecological validity and concentrate on outcome and technique rather than questions of importance to practicing clinicians such as those regarding the therapeutic alliance and mechanisms of change (Persons & Silberschatz, 1998). Third, all the RCTs of psychological therapies for social phobia included in this review investigated the efficacy of behavioral and/or cognitive treatments. We therefore do not know how efficacious other psychological approaches are for social phobia. Lack of evidence for efficacy is not evidence of inefficacy (Westen *et al*. 2004).

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Note

Supplementary information accompanies this paper on the Journal's website (http://journals.cambridge.org).

Declaration of Interest

None.

References

Akillas E, Efran JS (1995). Symptom prescription and reframing: should they be combined? *Cognitive Therapy and Research* **19**, 263–279.

Al-Kubaisy T, Marks IM, Logsdail S, Marks MP, Lovell K, Sungur M, Araya R (1992). Role of exposure homework in phobia reduction: A controlled study. *Behavior Therapy* **23**, 599–621.

APA (1994). *Diagnostic and Statistical Manual of Mental Disorders*, 4th edn (DSM-IV). Washington, DC: American Psychiatric Association.

Beck AT, Emery G, Greenberg RL (1985). *Anxiety Disorders and Phobias: A Cognitive Perspective*. Basic Books: New York.

Blomhoff S, Haug TT, Hellstrom K, Holme I, Humble M, Madsbu HP, Wold JE (2001). Randomised controlled general practice trial of sertraline, exposure therapy and combined treatment in generalised social phobia. *British Journal of Psychiatry* **179**, 23–30.

https://doi.org/10.1017/S0033291707000918 Published online by Cambridge University Press

Butler G (1985). Exposure as a treatment for social phobia: some instructive difficulties. *Behaviour Research and Therapy* **23**, 651–657.

Butler G, Cullington A, Munby M, Amies P, Gelder M (1984). Exposure and anxiety management in the treatment of social phobia. *Journal of Consulting and Clinical Psychology* **52**, 642–650.

Chambless DL, Baker MJ, Baucom DH, Beutler LE, Calhoun KS, Crits-Christoph P, Daiuto A, DeRubeis R, Detweiler J, Haaga DAF, Bennett Johnson S, McCurry S, Mueser KT, Pope KS, Sanderson WC, Shoham V, Stickle T, Williams DA, Woody SR (1998). Update on empirically validated therapies, II. *Clinical Psychologist* **51**, 3–16.

Chambless DL, Hollon SD (1998). Defining empirically supported therapies. *Journal of Consulting and Clinical Psychology* **66**, 7–18.

Chambless DL, Ollendick TH (2001). Empirically supported psychological interventions: controversies and evidence. *Annual Review of Psychology* **52**, 685–716.

Clark DB, Agras WS (1991). The assessment and treatment of performance anxiety in musicians. *American Journal of Psychiatry* **148**, 598–605.

Clark DM, Ehlers A, McManus F, Hackmann A, Fennell M, Campbell H, Flower T, Davenport C, Louis B (2003). Cognitive therapy versus fluoxetine in generalized social phobia: a randomized placebo-controlled trial. *Journal of Consulting and Clinical Psychology* **71**, 1058–1067.

Clark DM, Wells A (1995). A cognitive model of social phobia. In *Social Phobia: Diagnosis, Assessment, and Treatment* (ed. R. G. Heimberg, M. R. Liebowitz, D. A. Hope and F. R. Schneier), pp. 69–93. Guilford Press: New York.

Clark JV, Arkowitz H (1975). Social anxiety and self-evaluation of interpersonal performance. *Psychological Reports* **36**, 211–221.

Cottraux J, Note I, Albuisson E, Yao SN, Note B, Mollard E, Bonasse F, Jalenques I, Guerin J, Coudert AJ (2000). Cognitive behavior therapy versus supportive therapy in social phobia: a randomized controlled trial. *Psychotherapy and Psychosomatics* **69**, 137–146.

Crits-Christoph P, Wilson GT, Hollon SD (2005). Empirically supported psychotherapies: comment on Westen, Novotny, and Thompson-Brenner (2004). *Psychological Bulletin* **131**, 412–417.

Davidson JRT, Foa EB, Huppert JD, Keefe FJ, Franklin ME, Compton JS, Zhao N, Connor KM, Lynch TR, Gadde KM (2004). Fluoxetine, comprehensive cognitive behavioral therapy, and placebo in generalized social phobia. *Archives of General Psychiatry* **61**, 1005–1013.

DeRubeis RJ, Crits-Christoph P (1998). Empirically supported individual and group psychological treatments for adult mental disorders. *Journal of Consulting and Clinical Psychology* **66**, 37–52.

Edelmann RJ (1985). Dealing with embarrassing events: socially anxious and non-socially anxious groups compared. *British Journal of Clinical Psychology* **24**, 281–288.

Emmelkamp PMG, Mersch P-P, Vissia E, van der Helm M (1985). Social phobia: a comparative evaluation of cognitive and behavioral interventions. *Behaviour Research and Therapy* **23**, 365–369.

Furmark T, Tillfors M, Marteinsdottir I, Fischer H, Pissiota A, Langstrom B, Fredrikson M (2002). Common changes in cerebral blood flow in patients with social phobia treated with citalopram or cognitive-behavioral therapy. *Archives of General Psychiatry* **59**, 425–433.

Gelernter CS, Uhde TW, Cimbolic P, Arnkoff DB, Vittone BJ, Tancer ME, Bartko JJ (1991). Cognitive-behavioral and pharmacological treatments of social phobia. A controlled study. *Archives of General Psychiatry* **48**, 938–945.

Gruber K, Moran PJ, Roth WT, Taylor CB (2001). Computer-assisted cognitive behavioral group therapy for social phobia. *Behavior Therapy* **32**, 155–165.

Hackmann A, Clark DM, McManus F (2000). Recurrent images and early memories in social phobia. *Behaviour Research and Therapy* **38**, 601–610.

Hackmann A, Surawy C, Clark DM (1998). Seeing yourself through others' eyes: a study of spontaneously occurring images in social phobia. *Behavioural and Cognitive Psychotherapy* **26**, 3–12.

Harvey AG, Clark DM, Ehlers A, Rapee RM (2000). Social anxiety and self-impression: cognitive preparation enhances the beneficial effects of video feedback following a stressful social task. *Behaviour Research and Therapy* **38**, 1183–1192.

Haug TT, Blomhoff S, Hellstrom K, Holme I, Humble M, Madsbu HP, Wold JE (2003). Exposure therapy and sertraline in social phobia: 1-year follow-up of a randomised controlled trial. *British Journal of Psychiatry* **182**, 312–318.

Haug TT, Hellstrom K, Blomhoff S, Humble M, Madsbu H-P, Wold JE (2000). The treatment of social phobia in general practice. Is exposure therapy feasible? *Family Practice* **17**, 114–118.

Heimberg RG, Barlow DH (1988). Psychosocial treatments for social phobia. *Psychosomatics* **29**, 27–37.

Heimberg RG, Liebowitz MR, Hope DA, Schneier FR, Holt CS, Welkowitz LA, Juster HR, Campeas R, Bruch MA, Cloitre M, Fallon B, Klein DF (1998). Cognitive behavioral group therapy vs phenelzine therapy for social phobia. *Archives of General Psychiatry* **55**, 1133–1141.

Herbert JD, Rheingold AA, Gaudiano BA, Myers VH (2004). Standard versus extended cognitive behavior therapy for social anxiety disorder: a randomized-controlled trial. *Behavioural and Cognitive Psychotherapy* **32**, 131–147.

Hirsch CR, Meynen T, Clark DM (2004). Negative self-imagery in social anxiety contaminates social interactions. *Memory* **12**, 496–506.

Hofmann SG (2004). Cognitive mediation of treatment change in social phobia. *Journal of Consulting and Clinical Psychology* **72**, 392–399.

Hofmann SG, Moscovitch DA, Kim H-J, Taylor AN (2004). Changes in self-perception during treatment of social phobia. *Journal of Consulting and Clinical Psychology* **72**, 588–596.

https://doi.org/10.1017/S0033291707000918 Published online by Cambridge University Press

Hope DA, Heimberg RG, Bruch MA (1995). Dismantling cognitive-behavioral group therapy for social phobia. *Behaviour Research and Therapy* **33**, 637–650.

Kessler RC (2003). The impairments caused by social phobia in the general population: implications for intervention. *Acta Psychiatrica Scandinavica* **108** (Suppl. 417), 19–27.

Kim E-J (2005). The effect of the decreased safety behaviors on anxiety and negative thoughts in social phobics. *Anxiety Disorders* **19**, 69–86.

Liebowitz MR, Heimberg RG, Schneier FR, Hope DA, Davies S, Holt CS, Goetz D, Juster HR, Lin S-H, Bruch MA, Marshall RD, Klein DF (1999). Cognitive-behavioral group therapy versus phenelzine in social phobia: long term outcome. *Depression and Anxiety* **10**, 89–98.

Lucock MP, Salkovskis PM (1988). Cognitive factors in social anxiety and its treatment. *Behaviour Research and Therapy* **26**, 297–302.

Mansell W, Clark DM (1999). How do I appear to others? Social anxiety and processing of the observable self. *Behaviour Research and Therapy* **37**, 419–434.

Mansell W, Clark DM, Ehlers A (2003). Internal versus external attention in social anxiety: an investigation using a novel paradigm. *Behaviour Research and Therapy* **41**, 555–572.

Mattick RP, Peters L (1988). Treatment of severe social phobia: effects of guided exposure with and without cognitive restructuring. *Journal of Consulting and Clinical Psychology* **56**, 251–260.

Mersch PPA (1995). The treatment of social phobia: the differential effectiveness of exposure in vivo and an integration of exposure in vivo, rational emotive therapy and social skills training. *Behavior Research and Therapy* **33**, 259–269.

Morgan H, Raffle C (1999). Does reducing safety behaviours improve treatment response in patients with social phobia? *Australian and New Zealand Journal of Psychiatry* **33**, 503–510.

Newman MG, Hofmann SG, Trabert W, Roth WT, Taylor CB (1994). Does behavioral treatment of social phobia lead to cognitive changes? *Behavior Therapy* **25**, 503–517.

Oosterbaan DB, van Balkom AJLM, Spinhoven P, van Oppen P, van Dyck R (2001). Cognitive therapy versus moclobemide in social phobia: a controlled study. *Clinical Psychology and Psychotherapy* **8**, 263–273.

Ost L-G, Jerremalm A, Johansson J (1981). Individual response patterns and the effects of different behavioral methods in the treatment of social phobia. *Behavior Research and Therapy* **19**, 1–16.

Otto MW, Pollack MH, Gould RA, Worthington JJ, McArdle ET, Rosenbaum JF, Heimberg RG (2000). A comparison of the efficacy of clonazepam and cognitive-behavioral group therapy for the treatment of social phobia. *Journal of Anxiety Disorders* **14**, 345–358.

Persons JB, Silberschatz G (1998). Are results of randomized controlled trials useful to psychotherapists? *Journal of Consulting and Clinical Psychology* **66**, 126–135.

Rapee RM, Hayman K (1996). The effects of video feedback on the self-evaluation of performance in socially anxious subjects. *Behaviour Research and Therapy* **34**, 315–322.

Rapee RM, Lim L (1992). Discrepancy between self- and observer ratings of performance in social phobics. *Journal of Abnormal Psychology* **101**, 728–731.

Roth A, Fonagy P (2005). *What Works for Whom? A Critical Review of Psychotherapy research*, 2nd edn. Guilford Press: New York.

Roth AD, Parry G (1997). The implications of psychotherapy research for clinical practice and service development: lessons and limitations. *Journal of Mental Health* **6**, 367–380.

Salaberria K, Echeburua E (1998). Long-term outcome of cognitive therapy's contribution to self-exposure in vivo to the treatment of generalized social phobia. *Behavior Modification* **22**, 262–284.

Scholing A, Emmelkamp PMG (1993*a*). Cognitive and behavioral treatments of fear of blushing, sweating or trembling. *Behaviour Research and Therapy* **31**, 155–170.

Scholing A, Emmelkamp PMG (1993*b*). Exposure with and without cognitive therapy for generalized social phobia: effects of individual and group treatment. *Behaviour Research and Therapy* **31**, 667–681.

Scholing A, Emmelkamp PMG (1996*a*). Treatment of fear of blushing, sweating, or trembling: results at long-term follow-up. *Behavior Modification* **20**, 338–356.

Scholing A, Emmelkamp PMG (1996*b*). Treatment of generalized social phobia: results at long-term follow-up. *Behaviour Research and Therapy* **34**, 447–452.

Spence SH (1994). Interpersonal problems. Treatment. In *The Handbook of Clinical Adult Psychology*, 2nd edn (ed. S. J. E. Lindsay and G. E. Powell), pp. 253–270. Routledge: London.

Stahl SM (1996). *Essential Psychopharmacology. Neuroscientific Basis and Practical Applications*. Cambridge University Press: Cambridge.

Stangier U, Heidenreich T, Peitz M, Lauterbach W, Clark DM (2003). Cognitive therapy for social phobia: individual versus group treatment. *Behaviour Research and Therapy* **41**, 991–1007.

Stopa L, Clark DM (2000). Social phobia and interpretation of social events. *Behaviour Research and Therapy* **38**, 273–283.

Stopa L, Clark DM (1993). Cognitive processes in social phobia. *Behaviour Research and Therapy* **31**, 255–267.

Stravynski A, Arbel N, Bounader J, Gaudette G, Lachance L, Borgeat F, Fabian J, Lamontagne Y, Sidoun P, Todorov C (2000). Social phobia treated as a problem in social functioning: a controlled comparison of two behavioural group approaches. *Acta Psychiatrica Scandinavica* **102**, 188–198.

Stravynski A, Marks I, Yule W (1982). Social skills problems in neurotic outpatients. Social skills training with and without cognitive modification. *Archives of General Psychiatry* **39**, 1378–1385.

Taylor S, Woody S, Koch WJ, McLean P, Paterson RJ, Anderson KW (1997). Cognitive restructuring in the treatment of social phobia: efficacy and mode of action. *Behavior Modification* **21**, 487–511.

https://doi.org/10.1017/S0033291707000918 Published online by Cambridge University Press

Trower P, Bryant B, Argyle M (1978). *Social Skills and Mental Health*. Methuen: London.

Turner SM, Beidel DC, Jacob RG (1994). Social phobia: a comparison of behavior therapy and atenolol. *Journal of Consulting and Clinical Psychology* **62**, 350–358.

Westen D, Novotny CM, Thompson-Brenner H (2004). The empirical status of empirically supported psychotherapies: assumptions, findings, and reporting in controlled clinical trials. *Psychological Bulletin* **130**, 631–663.

Wittchen H-U, Fehm L (2003). Epidemiology and natural course of social fears and social phobia. *Acta Psychiatrica Scandinavica* **108** (Suppl. 417), 4–18.

Wolpe J (1973). *The Practice of Behavior Therapy*, 2nd edn. Pergamon: New York.

https://doi.org/10.1017/S0033291707000918 Published online by Cambridge University Press