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| Author: | Nicola Bethel |
| Thesis title: | Self-applied Interventions for Social Anxiety |
| Qualification: | DClinPsy |
| Date awarded: | 01 November 2010 |

This thesis was embargoed until 01 October 2015

If this electronic thesis has been edited by the author it will be indicated as such on the title page and in the text.

# Self-applied interventions for social anxiety

Nicola J. Bethel

**Declaration**

I declare that this work has not been submitted for any other degree, or to any other institution.

**Structure**

The literature review has been prepared according to the guidance for '*Clinical Psychology Review (Elsevier Ltd.)*'.

The research report has been prepared according to the guidance for the journal *'Behaviour Research and Therapy (Elsevier Ltd.)'*.

**Word Counts**

The word count for the literature review (excluding references) is: 8000

The word count for the research report (excluding references) is: 9111

The word count for the appendices is: 8972

The total word count (excluding references and appendices) is: 17,111

The total word count (including references and appendices) is: 29,709

**Abstract**

The present thesis examined the efficacy of self-applied interventions for social anxiety. 18 studies examining self-help interventions (with and without therapist involvement) for social phobia were reviewed. All studies demonstrated the efficacy of such interventions in treating social phobia, producing some outcomes comparable to face-to-face CBT. It was concluded that self-help interventions may prove to be efficient and economical treatments for social phobia. However, further research is needed to clarify the effectiveness of self-help interventions for social phobia, determine specifically what factors improve outcomes and through what mechanisms, and examine other interventions (all thus far are CBT-based) that may be suitable for self-application.

Implementation intentions ('if...then' plans) have been helpful in managing social anxiety through moderating attentional biases, and may be suitable for self-application. The present study aimed to determine if self-application of implementation intentions could prevent the negative effects of social anxiety on perceived performance and state anxiety. 84 socially anxious students identified an upcoming, real world anxiety-provoking social situation. Participants were randomly allocated to (i) control, (ii) goal intention (asked to keep calm and not focus on negative things in their situation), or (iii) implementation intention (additionally made an 'if...then' plan to focus their attention on positive stimuli in their situation) conditions. Participants completed measures of performance and state anxiety after their social situations. Self-applied implementation intentions prevented the negative effects of social anxiety upon perceived performance and

state anxiety in the chosen social situations. Implementation intentions could be used to promote effective self-management of social anxiety.

**Acknowledgements**

Many thanks go to Dr. Thomas Webb and Dr. Andrew Thompson for the time they have given to supervising this thesis. Their feedback and advice has been very much appreciated.

And to Jen, for her constant love and support.

**Contents**

*1. Literature Review*

2. *Research Report*

## Do self-help interventions work for adults with social phobia?

## A Systematic Review

### ABSTRACT

The present review examined the efficacy of self-applied interventions for social phobia. 18 studies examining self-help interventions (with and without therapist involvement) with individuals meeting DSM-IV criteria for social phobia were reviewed. All studies demonstrated the efficacy of self-help interventions in treating social phobia, producing some outcomes comparable to face-to-face CBT. It was concluded that self-help interventions may prove to be efficient and economical treatments for social phobia. However, the effectiveness of self-help interventions for social phobia, and the effect of therapist involvement versus no involvement (and type of involvement), is unclear due to a lack of studies appropriately controlled to address such issues. Further research is needed to determine specifically what factors improve outcomes and through what mechanisms, and examine other interventions for social phobia/anxiety that may be suitable for self-application (as only CBT-based self-help interventions have been investigated for social phobia thus far), so that any interventions provided are the most effective, economical and efficient they can be. Clinical implications and directions for future research are discussed.

**Contents**

## 1. Introduction

Social phobia is the experience of extreme anxiety in social situations, fearing embarrassment or humiliation, which significantly impairs quality of life (The Diagnostic and Statistical Manual of the American Psychiatric Association (DSM-IV), 1994). The terms '*social anxiety'* and *'social phobia'* are often used interchangeably (Richards, 2008). The lifetime prevalence of social anxiety disorders in the UK is estimated to be 5.7%, with larger numbers experiencing some level of social anxiety (Gross et al., 2005).

Estimates suggest only 33-42% of individuals experiencing social anxiety each year receive psychotherapy and socially anxious patients make significantly fewer primary care visits compared to those with other mental health problems (Gross et al., 2005; Erwin, Turk, Heimberg, Fresco, & Hantula, 2004).  Cognitive Behavioural Therapy (CBT) is usually used to treat social anxiety (Butler, 1999) and has a large evidence base for individual and group formats (for review see Heimberg, 2001). Clients receiving individual CBT usually have 8-24 1hr sessions (Butler, 1999). The low percentage of socially anxious individuals accessing treatment appears to result from the preventative effects of the individuals' social phobia (i.e. avoiding contact with others) and limited psychotherapy provision (Erwin et al., 2004; Gross et al., 2005). Therefore, in addition to traditional psychotherapies it may be useful to explore the provision of low cost, self-help

interventions for social phobia/anxiety that could be accessible to many individuals.

Self-help, therapist-minimal, and bibliotherapy are terms used interchangeably to describe interventions where an individual self-applies literature and techniques presented in a variety of formats (most commonly in books or via the internet) to manage their mental health difficulties with either no, or minimal, therapist involvement (Richards, 2004). Where present, therapist involvement tends to be indirect e.g. by email. CBT based self-help interventions have been shown to successfully treat a range of conditions e.g. panic disorder when compared to CBT with a therapist (e.g. Carlbring et al., 2005), depression when compared to waitlist control (Andersson et al., 2005); for meta analytic review of internet-based self-help for depression and general anxiety see Spek et al., 2007). Two such computer-delivered, CBT-based self-help interventions (Beating the Blues [Ultrasis plc] for mild-moderate depression, and Fearfighter [ST Solutions Ltd.] for panic and phobia) are recommended within a stepped-care model by the National Institute for Health and Clinical Excellence (NICE; 2006). However, self-help has not been found to be universally helpful (e.g. Turpin, Downs, & Mason (2005) found self-help for post-traumatic stress disorder was not efficacious).

Recently, a number of studies have examined whether self-help interventions could be successful in treating social phobia, particularly given the difficulty such individuals have in accessing face-to-face treatment (Erwin et al, 2004). Therefore, the present review aimed to systematically evaluate the literature on self-help interventions for social phobia for the first time, and determine whether such interventions are successful in treating this disorder.

## 2. Method

A study was included in the present review if it met the following criteria; a) it examined outcomes of self-applied interventions (with or without minimal therapist involvement) targeted at treating social anxiety or social phobia; b) participants were aged ≥18 years; and c) it was written in English language. Studies were excluded if; a) no control, baseline or comparison data were utilised, thus limiting any conclusions that could be made about the intervention's efficacy; b) reported outcomes were not regarding levels of social phobia or related difficulties; and c) they were laboratory-based experimental studies requiring extensive experimenter involvement in the application of the intervention.

The databases PsychInfo, Web of Knowledge, Medline and the Cochrane Library were searched using the following terms:

[{Social*AND (phob*OR anxi*OR fear*OR avoid*)} OR shy*] AND  [{(online OR web OR internet OR e*OR distan*OR computer*OR tele*) AND (treat*OR therap*OR interven*OR manage*)} OR self help OR therap* minimal OR bibliotherap*}]

111 records were identified and screened, of which 28 were fully cross-referenced and assessed for eligibility. Ten studies were excluded; two were single case studies without any baseline data, thus the improvements in symptoms could be due to participants already being in the process of recovery rather than the intervention (Botella, Hofmann &, Moscovitch, 2004; Botella et al., 2008); similarly one study of 12 participants did not present any control group or baseline data Botella et al., 2007); five studies did not present outcome data related to social phobia or related difficulties (Storm, King, & Poulos, (1998) was a discussion regarding internet treatment of social phobia; Gega, Norman, & Marks (2007)

examined internet-based training of nursing students to conduct exposure therapy; Botella et al. (2009) examined acceptability of self-help; Seekles, van Straten, Beekman, van Marwijk, & Cuijpers (2009) presented a study protocol; one paper was a commentary (Andersson & Carlbring, 2009)); and in two studies the therapist was present and fully involved in treatment delivery (Ledley et al., 2009; Craske et al., 2009).

In total 18 studies were eligible for inclusion (see Figure 1 for a flow chart of how the included studies were identified; see Appendix A for a tabulated summary of the 18 studies). On email contact no authors had any related but unpublished manuscripts prepared, thus only published studies are included.

3. **Common participant inclusion/exclusion criteria used in the studies**

The 18 studies included in the present review had very similar inclusion/exclusion criteria for their participants. All the studies included participants if they were adults meeting DSM-IV criteria for social phobia, with social phobia being the primary disorder. Participants using psychotropic medication were still included if their dose had been constant for 1-3 months and was to remain constant throughout the study. Studies that delivered self-help via the internet required participants to have computer and internet access.

Participants were excluded if they were experiencing suicidal ideation, they had a history of psychosis, they had engaged in substance misuse over the previous 6 months, they had severe depression (as self-reported on measures of depression, with cut-offs varying across studies), they had previously had CBT, or if they were having any type of psychotherapy during the study (except Rapee, Abbott, Baillie,

& Gaston, 2007) where participants could be engaging in psychotherapy concurrently as long as the dose had been constant for the previous 3 months and was to remain constant).
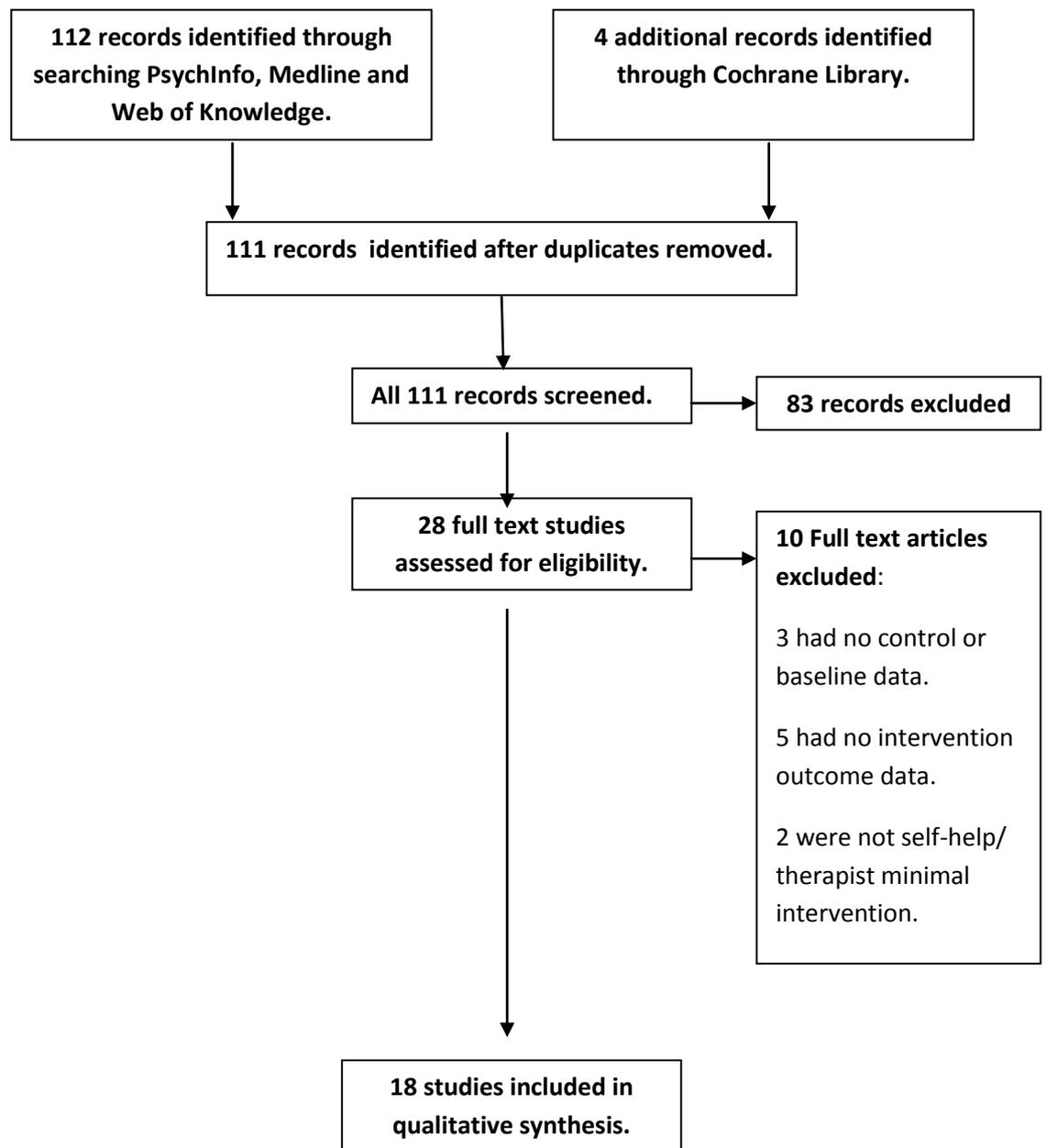


**Figure 1**: Flow chart demonstrating the stages involved in identifying relevant studies.

**4. The self-help interventions used in the studies**

The self-help interventions used in the studies also had many commonalities. All interventions were based upon CBT. A number of the studies directly applied, or described having based their self-help treatments upon, various self-help and theoretical texts (e.g. Butler, 2001; Rapee, 1998) regarding CBT for social phobia. All studies described their self-help interventions as being divided into modules, which commonly focused upon an introduction to CBT and social phobia, Clark & Wells (1995) model of social phobia, cognitive restructuring, behavioural experiments, goal setting, the role of attention and safety behaviours, exposures and exposure hierarchies, assertiveness and social skills, and relapse prevention. The self-help interventions encouraged participants to relate the contents of the modules to themselves and their feared social situations. Each module included a mix of information, exercises, questions, a quiz, and written tasks encouraging reflection upon what had been learnt. Each module also provided typical CBT homework e.g. thought diaries, exposure exercises.

The present review will begin by examining one uncontrolled study, then the studies that compare their self-help interventions to a waitlist control group. Then the studies that investigate more specific factors related to outcomes will be reviewed.

**5. Review of the included studies**

*5.1    Uncontrolled studies*

Carlbring, Furmark, Steczko, Ekselius and Andersson (2006) administered a 9-week internet-based self-help intervention (based upon self-help manuals e.g.

Butler, 2001) to one group of 26 participants (69.2% female; mean age 33.50 years; mean Social Interaction and Anxiety Scale (SIAS; Mattick & Clarke, 1998) score 43.50). Participants also accessed an online discussion forum specifically for them, and received weekly therapist emails (mean email time spent per participant over the 9 weeks = 180 minutes) providing feedback.

Participants demonstrated a stable baseline pre-intervention (duration unreported). An intention-to-treat model of analysis was used. Pre-post intervention significant reductions were found in self-reported symptoms of social phobia, depression and general anxiety, and a significant improvement in self-reported quality of life (effect sizes between $d$=0.50-1.38; for the specific outcome measures and effect sizes see Appendix A) was shown. These improvements were retained at 6 month follow-up or further improved (effect sizes pre-follow-up $d$=0.70-2.04). Two months post-intervention 46.2% of the sample no longer met diagnostic criteria for social phobia. Thus, this self-help intervention appeared to have produced statistically significant improvements in a range of primary and secondary outcome measures related to social phobia.

However, limitations specific to this study include the lack of a control group. Thus, the improvements seen could be due to spontaneous recovery. However, this is unlikely given the stable baseline data. Improvements could also be due to social desirability factors e.g. participants wanting to please the experimenters and thus minimising their symptoms post-intervention.

*5.2 Self-help interventions compared to waitlist controls*

Six studies (two with longer-term follow-up studies) compared their self-help interventions to a waitlist control, all augmented with some type of therapist involvement.

*5.2.1. Self-help with therapist meetings and telephone calls*

Abramowitz, Moore, Braddock and Harrington (2009) randomised 21 participants (76% female; mean age 43.40 years; mean SIAS score 55.71) to either; i) waitlist control; or ii) 8 week self-help, involving the direct application of the book *Shyness and Social Anxiety Workbook* (Antony & Swinson, 2000). Self-help participants had face-to-face meetings (<30 minutes) and telephone calls (<15 minutes) with a therapist on alternate weeks to review progress. These contacts involved no direct therapy. There were no drop-outs.

Pre-post intervention the self-help group showed significantly greater improvement on self-report measures of social phobia and depression (but not general anxiety), and on the clinician-rated social concerns subscale of the Clinical Global Impression-Severity Scale (CGI-S; Guy, 1976), with within group effect sizes of $d$=0.65-1.72. These findings were retained at 3 month follow-up (effect sizes $d$=1.07-1.51 pre-intervention-follow-up). The waitlist group then received the same self-help intervention, with the same results being found (within group pre-post effect sizes $d$=0.74-2.32; pre-follow-up $d$=0.79-2.83). However, analyses were conducted using separate ANOVAs for each measure without any correction for multiple comparisons. If Bonferroni corrected, the changes on one measure of social phobia and on the CGI-S would no longer meet significance.

Participants' scores on a social phobia measure were subject to analyses of clinically significant change (see Jacobson & Truax, 1991). In the initial self-help group and the delayed self-help group 27% and 40% at post-intervention, and 36% and 40% at 3 month follow-up demonstrated clinically significant change respectively. Thus, self-help was superior to waitlist control at reducing the symptoms of social phobia and depression. However, less than half the sample demonstrated clinically significant improvement. A specific limitation of this study is that the participants had opted to receive a self-help intervention (as opposed to treatment as usual). Thus, the sample was somewhat self-selecting and may have been more motivated than individuals who did not opt for self-help. Therefore, the same improvements may not be found in individuals who would not opt for self-help as their first choice e.g. if self-help were to be provided in a stepped-care model. A further limitation is that the effect of the self-help workbook cannot be teased out from the effect of the therapist meetings. It could be that exposure to the therapist was enough to produce the improvements seen, and that the self-help workbook added no extra effect.

### 5.2.2. Self-help with online forum and therapist emails

Titov, Andrews, Schwencke, Drobny and Einstein (2008a) conducted a randomised controlled trial (RCT) investigating a six-module internet-based self-help intervention called *'The Shyness Programme'*, which is completed over 7-10 weeks. 105 participants (48% female; mean age 38.13 years; mean SIAS score 54.25) were randomly allocated to; i) self-help group; or ii) waitlist control. Both groups accessed their own online forum, with a therapist only posting feedback into the self-help group's forum. Self-help participants also received weekly

therapist emails answering questions and providing reinforcement (mean therapist time spent per participant was 125 minutes). Intention-to-treat analyses were utilised. Pre-post intervention the self-help group showed significantly greater improvement on self-report measures of social phobia and general psychological distress (within effect sizes $d$=0.86-1.24) than the waitlist control. However, no such significant effects were found on self-report measures of disability and depression. This may have been due to attenuated group differences resulting from the waitlist group improving on all measures (within effect sizes $d$=0.13-0.32), possibly due to therapeutic effects of the online forum. The study may have been underpowered to detect such between group differences in these circumstances. There also appeared to be a floor effect regarding scores on the depression measure.

This study (Titov et al., 2008a) was exactly replicated by Titov, Andrews and Schwencke (2008b) with 88 participants (51% female; mean age 36.79; mean SIAS score 57.50). Very similar results were found to the first study; pre-post intervention the self-help group showed significantly greater improvement in self-reported social phobia and disability (within effect sizes $d$=0.67-1.21) than the waitlist control. However, no significant differences between groups were found post-intervention on self-reported depression and general psychological distress, possibly for the same reasons mentioned above.

The longer-term outcome of the studies by Titov et al. (2008a,b) were then investigated by Titov, Andrews, Johnston, Schwencke and Choi (2009a), where 59% of self-help participants from the original two studies re-completed outcome measures 6 months post-intervention. No follow-up waitlist data was collected. Post-intervention-follow-up participants made further significant improvements in

self-reported social phobia symptoms (within group effect sizes *d*=1.50-1.31). Significant improvements were also seen pre-post intervention on self-report measures of depression, disability and psychological distress, which were maintained at follow-up (pre-follow-up within group effect sizes *d*=0.77- 0.82). However, these improvements on the secondary measures need to be accepted with some caution as they were not compared to a waitlist control and in the previous studies limited improvements were seen when compared to controls. A further limitation is the low response rate at follow-up; it could be that only those who maintained improvement or further improved responded, positively biasing the results.

A limitation of these three studies investigating *'The Shyness Programme'* is that they cannot specify the aspects of intervention that have a positive effect. It could be that the online forum and therapist email contact were enough to produce the improvements seen, and that the actual self-help intervention added no extra effect.

Berger, Hohl and Caspar (2009) completed a RCT investigating a 10 week, five module internet-based self help intervention (based on Clark and Wells, 1995). Fifty-two participants (55.8% female; mean age 28.9; mean SIAS score 45.3) were randomised into either; i) self-help group with therapist email support (mean emails sent by therapist over the study per participant was 5.5) and online forum; or ii) waitlist control.

Intention-to-treat analyses were used. Pre-post intervention the self-help group showed significantly greater improvement on self-report measures of social phobia (within effect sizes *d*=0.76-0.88) than the waitlist control. However, no significant differences between groups were found post-intervention on self-

report measures of depression, interpersonal difficulties, general psychiatric symptoms or goal attainment. This may have been due to the moderate improvement in these measures observed in the waitlist group (mean effect size $d$=0.51), possibly due to some therapeutic effect of completing the diagnostic interview and measures, attenuating between group effects. Thus, the study may have lacked power for any between-group effects on these secondary measures to be detected.  The proportion of self-help participants demonstrating clinically significant change ranged between 54.8- 58.1% across the outcome measures, and chi-square tests demonstrated this was a significantly greater proportion than the waitlist group on all measures. Thus, compared to a waitlist control, participants receiving self-help improved significantly on measures of social phobia. Again, these improvements cannot be assumed to necessarily result from the self-help intervention due to the absence of a control group receiving online forum access and emails only.

*5.2.3. Self-help with online forum, therapist emails and therapist telephone calls*

Carlbring et al. (2007) administered the same 9-week, internet-based self-help intervention as used in Carlbring et al. (2006) in a RCT. Fifty-seven participants (65% female; mean age 32.65; mean SIAS score 42.1) were randomised to; i) waitlist control; or ii) self-help, with access to an online forum, and weekly therapist email (mean time spent per participant over the 9 weeks = 180 minutes) and telephone feedback (mean length 10.5 minutes).

Intention-to-treat analyses were utilised. Pre-post intervention the self-help group showed significantly greater improvement on self-report measures of social

phobia, depression and general anxiety (within effect sizes $d$=0.69-1.16) than the waitlist control. No significant differences were found between-groups on self-reported quality of life. For the waitlist group no significant changes were found in any measures over the 9 week period. These improvements were retained at 12 month follow-up, with significant improvement in quality of life (mean within pre-intervention-follow-up effect size $d$=1.02). No follow-up data was collected from the waitlist group as they went on to complete the same self-help intervention but without telephone support in Carlbring, Nordgren, Furmark and Andersson (2009).

Carlbring et al. (2009) completed a 30 month follow-up of Carlbring et al. (2007). At 30 month follow-up, 77.2% of the participants from Carlbring et al. (2007) re-completed the measures and 66.7% completed a diagnostic telephone interview. No significant effects of telephone support x time were found. For all participant data pooled, significant improvements pre-post intervention were found on all measures, which were either maintained or further improved (social phobia, general anxiety and quality of life) at follow-up. Pre-follow-up within effect sizes ranged $d$=0.47-1.73. Thus, participants continued to improve after the self-help intervention was terminated. The proportion of participants demonstrating clinically significant change at 30 month follow-up ranged between 33.3- 94.7% across the outcome measures, and 84.2% no longer met diagnostic criteria for social phobia; however this is reduced to 56% if it is assumed that those who did not complete the interview were failed by the intervention. 68.4% were much improved on a clinician-rated measure.

Although promising, these longer-term findings may not generalise to the entire of the original sample and these outcomes may be positively biased by the

failure to achieve 100% response rate i.e. participants that did not complete the 30 month follow-up may have deteriorated. Also, post-hoc analyses were not adjusted for multiple-comparisons, thus some outcomes may not have survived correction (specific *p* values not provided). Again, the absence of a control group receiving online forum access and emails only does not allow specific intervention effects to be identified.

*5.2.4. Self-help with online forum, therapist emails and group exposure sessions*

Andersson et al. (2006) investigated the same 9-week intervention as Carlbring et al. (2006) in a RCT. 64 participants (51.6% female; mean age 37.3 years; mean SIAS score 44.6) were randomised to; i) waitlist control with access to an online forum; or ii) self-help with access to an online forum, weekly therapist feedback emails (mean therapist time spent per participant over the 9 weeks = 180 minutes) and two 3-hour, therapist-led, group exposure sessions (of 6-8 participants).

Intention-to-treat analyses were used. Pre-post intervention the self-help group showed significantly greater improvement on self-report measures of social phobia, general anxiety and quality of life (within effect sizes *d*=0.58-1.21) than the waitlist control. However, no significant changes in self-reported depression were found when compared to the waitlist control. For the waitlist group no significant changes were found in any measures over the 9-week period. The percentage of self-help participants showing clinically significant change varied between 43.3%-73.0% across the measures, these being significantly greater than the clinically significant changes seen in the waitlist group with the exception of a depression

measure and one social phobia measure; this may have been due to the control group receiving some therapeutic benefit from participation in an online forum.

The waitlist group then received the same intervention; however the results of pre-post intervention statistical analyses for this delayed treatment group are not presented in the paper. The 12 month follow-up data for the two groups was pooled for analysis using only a completer sample (i.e. not an intention-to-treat model). The above improvements were retained at 12 month follow-up (pre-follow-up effect sizes $d$=0.43-1.50), with clinically significant improvement for the outcome measures varying between 46.9- 69.4%. However, the failure to use an intention-to–treat model for these analyses may have positively biased the results. A further limitation of the study is that it cannot specify which aspects of the treatment are responsible for the improvements seen in the self-help group. It could be that the two group exposure sessions produced the improvements and that the internet-based self-help intervention added no extra effect.

*5.3. Exploring the specificity of intervention effects*

Six studies investigated more specifically the effects of different types of therapist input. Four studies examined distant therapist inputs (i.e. not face-to-face), and two studies examined the effect of face-to-face therapist input in a group setting.

*5.3.1. The effects of distant therapist input*

Titov, Andrews, Choi, Schwencke and Johnston (2009b) conducted a RCT comparing '*The Shyness Programme'* (see Titov et al. 2008a,b) alone (i.e. no online forum or therapist emails), with '*The Shyness Programme'* when accompanied by weekly therapist telephone calls offering reinforcement (again no forum or email). 163 participants (52% female; mean age 41.2 years; mean SIAS score 54.25) were randomised to either; i) telephone support (mean total time telephoning each participant 38.7 minutes); or ii) the no support group. Both groups received a weekly, automated reinforcement email.

Intention-to-treat analyses were utilised. No significant differences were found between the groups at pre-treatment on expectations of intervention outcome. Pre-post intervention both groups significantly improved on self-report measures of social phobia (within group effect size for telephone support *d*= 0.89-1.41; for no support *d*=0.73-0.98), with the improvements in the telephone support group being significantly greater (between group effect size *d*=0.3) on some measures. Both groups also significantly improved on self-reported psychological distress, disability and depression, with no between-group differences found. Thus, the addition of telephone support to a self-help intervention appeared to improve outcomes with regard to social phobia symptoms. This may have been due to the significantly higher intervention completion rate in the telephone support group (81% fully completed versus 68% of no support group). Indeed, when participant data was split into completers versus non-completers, the completer group improved to a significantly greater degree on the social phobia measures. Thus, telephone support may improve outcomes indirectly through improving intervention completion rates.

Titov, Andrews, Choi, Schwencke and Mahoney (2008c) conducted a RCT examining the additive effect of therapist involvement via email to *The Shyness Programme.* 98 participants (58% female; mean age 37.97; mean SIAS score 53.10) were randomised to; i) waitlist control; ii) self-help with access to an online forum (with no therapist input); or iii) self-help with access to an online forum where a therapist responded to posts, and therapist emails answering questions and offering encouragement (total mean time spent on each participant was 168 minutes plus 25 minutes of administration). At pre-intervention no significant differences were found between the groups in their outcome expectations.

Intention-to-treat analyses were used. Post-intervention the self-help with therapist involvement group had significantly improved to a greater degree than the other two groups on self-report measures of social phobia (within group effect sizes $d$=1.17-1.47; between self-help groups $d$=0.64-0.67). At post-intervention the self-help with therapist input group had also significantly improved to a greater degree than the waitlist group on a self-report measure of disability (within effect size 0.71; between 0.37). No other differences between groups were found, including on self-reported depression and distress. Thus, the self-help intervention with therapist involvement appeared to be superior. As in Titov et al., (2009b), this may have been to a significantly greater level of intervention completion in the group with therapist involvement (77% full completion compared to 33% in the self-help group without therapist involvement). Indeed, when the self-help without therapist involvement group were divided into completers and non-completers, it was found that completers did show significant improvements in social phobia measures compared to the waitlist group. Thus, therapist email input may improve outcomes indirectly through improving intervention completion rates.

Titov, Andrews, Schwencke, Solley, Johnstone and Robinson (2009c) conducted a RCT comparing the effect of two types of therapist support for their '*Shyness Programme'*. 82 participants (56% female; mean age 38.88 years; mean SIAS score 54.43%) were randomised into two groups; i) self-help with weekly therapist feedback telephone calls; and ii) self-help with access to an online forum where a therapist responded to posts. The mean therapist time spent on the interventions per participant was 38.01 minutes and 36.92 minutes respectively.

The same proportion of both groups fully completed the intervention (79%). There were no significant differences between groups in outcome expectations at pre-treatment. There were no differences in the significant pre-post improvements between the groups on self-report measures of social phobia, depression, distress or disability (within group effect sizes $d$= 0.48-1.47 for the telephone group, and $d$=0.73-1.56 for the forum group). Thus, '*The Shyness Programme'* whether accompanied by telephone support or by online support produced equivalent improvements. However, without control groups (i.e. '*The Shyness Programme'* without any therapist support, an online forum only, and telephone calls only) it cannot be concluded that the two types of support added any extra effect to the self-help intervention, or even that it was the self-help intervention that was responsible for the improvements (the supports may have been sufficient to produce the improvements seen).

Furmark et al. (2009) conducted two RCTs examining the efficacy of guided and unguided self-help. In trial 1 they randomly assigned 120 participants (67.5% female; mean age 36.13; mean SIAS score 48.53) to four groups; i) self-help in the form of a book (bibliotherapy); ii) internet-based self-help (based upon the book used in the bibliotherapy group), with email feedback from a therapist and access

to an online forum; iii) and waitlist control. The self-help interventions were the same as used in Carlbring et al. (2006) and Andersson et al. (2006). Pre-post intervention the bibliotherapy and internet self-help groups showed significantly greater improvements on all outcome measures of social phobia, general anxiety, depression and quality of life when compared to the waitlist group, with no differences between the intervention groups (within effect sizes for bibliotherapy $d$=0.65-0.89, and for internet self-help $d$=0.85-1.29). These results were retained at 1 year follow-up.

In trial 2 they randomly assigned 115 participants (67.83% female; mean age 34.7 years; mean SIAS score 50.29) to four groups; i) bibliotherapy alone; ii) internet-based self-help, with therapist email feedback and access to an online forum; iii) bibliotherapy with access to an online forum; iv) 9 week internet-delivered relaxation (including information, exercises and homework in each module akin to the self-help interventions) with therapist email feedback and access to an online forum. All groups showed significant pre-post improvements on all measures, which were retained at 12 month follow-up. However, no significant differences were found between the interventions at any point (within effect sizes ranged $d$=0.81-1.58 for internet-based self-help, $d$=0.65-1.11 for bibliotherapy, $d$=1.06-1.63 for bibliotherapy plus forum, and $d$=0.82-1.00 for relaxation. Thus, all interventions across both trials produced equivalent improvements, suggesting that such a self-help intervention does not need to be delivered via the internet or accompanied by therapist input to produce the best outcomes (as bibliotherapy with forum produced equivalent effect sizes to internet-based self-help). However, the specificity of the self-help CBT interventions is questionable due to the equivalent outcomes found following

internet-based relaxation. This may have been due to some overlap between these interventions (i.e. relaxation included some exposure exercises). A further limitation may be that the study was underpowered to distinguish any differences between interventions.

*5.3.2. The effects of group face-to-face therapist input*

Tillfors et al. (2008) randomly allocated 38 participants (78.9% female; mean age 31.25 years; mean SIAS score 34.85) to two internet-based self-help groups (as in Andersson et al., 2006); i) with 5 group exposure sessions; and ii) without exposure sessions. Both groups accessed an online forum and received weekly therapist feedback emails (mean total of 35 minutes per participant was spent on email support). Intention-to-treat analyses were utilised. Both groups significantly improved pre-post intervention, and pre–12 month follow-up on self-reported social phobia, depression, general anxiety and quality of life.  When compared to waitlist control data from a similar study it was shown that these two groups were significantly more improved than controls post-intervention. There were no significant differences in improvements between the two self-help groups on any measure post-intervention (within group effect sizes on social phobia measures ranged *d*= 0.77-1.47), or in the proportions of clinically significant change seen on any of the measures (mean proportion with exposure 58.35%, and without exposure 55.25%). Thus, the addition of 5 group exposure sessions to internet-based self-help did not appear to improve outcomes. However, this may have been because 39% of participants in the exposure group did not complete any of the exposures and intention-to-treat analyses were used.

Rapee et al., (2007) randomised 224 participants (50.4% female; mean age 35.58; mean SIAS score 53.96) to; i) waitlist control; ii) self-help alone; iii) self-help with five 2-hour group therapy sessions; and iv) group treatment as usual (ten 2-hour sessions of group CBT, with 6 participants per group). The interventions ran over a 12 week period. The self-help intervention was in the form of the book *Overcoming Shyness and Social Phobia: A Step by Step Guide* (Rapee, 1998). The ten group treatment sessions paralleled the contents of this book. Intention-to-treat analyses were used.

Post-intervention the self-help alone, self-help+group sessions, and group CBT groups all showed a significantly greater proportion of participants no longer meeting the diagnostic criteria for social phobia (20%, 19% and 22% respectively; no significant between-group differences) when compared to the waitlist group (6%). At 3 month follow-up, the self-help+group sessions, and the group CBT groups showed significantly greater proportions of participants no longer meeting social phobia diagnostic criteria (26% and 22% respectively) when compared to the self-help alone group (11%). A composite social phobia outcome measure was created to reduce the risk of type 1 errors, consisting of a number of self-report social phobia measures. Post-intervention the self-help+group sessions and group CBT groups had significantly improved on the composite social phobia measure (within effect sizes $d$=0.91 for both groups) and on a measure of life interference when compared to the waitlist group, with no differences between these two intervention groups. Post-intervention the self-help alone group showed no significant differences to the waitlist group on these measures. These results were replicated at 6 month follow-up. Thus, self-help alone produced limited improvements, whereas self-help augmented by group sessions produced

improvements that did not differ from group CBT treatment as usual. The limited improvements produced by lone self-help may have been due to participants in this group reading significantly fewer chapters (mean 4.11) than the self-help+group sessions group (mean 7.48). Indeed, reading more chapters was found to be significantly associated with greater improvements in the composite measure. A further limitation is the lack of a five group session intervention without self-help materials, as without this no firm conclusions can be drawn about the success of the self-help book; it could be that the five group sessions produced all the improvements seen in the self-help+group sessions condition, and that the book added no extra effect.

### 5.4. Improving ecological validity

Aydos, Titov and Andrews (2009) aimed to improve the ecological validity of *'The Shyness Programme'* intervention by having it administered by a psychiatric registrar as part of standard clinical treatment at an outpatient social anxiety disorders clinic. 17 participants (71% female; mean age 42.47 years; mean SIAS score 60.24) received the self-help treatment with access to an online forum and emails from the registrar (mean time spent per participant 155 minutes). No control group was utilised and no baseline data acquired, however this study was included as this intervention has been shown in the studies by Titov et al. (2008a, b) to be effective when compared to a waitlist control. Pre-post intervention participants showed significant improvement on self-reported social phobia, depression, distress and disability when both completer (effect sizes $d$=0.60- 1.51) and intention-to-treat analyses (effect sizes $d$=0.48-1.05) were used. Thus, it appears this intervention is still efficacious when administered through a more

ecologically valid environment. However, these findings must be accepted with caution; without control or baseline data to suggest otherwise it may be that these participants were already in the process of recovery. Also, analyses were not adjusted for multiple-comparisons, thus some outcomes may not have survived correction (specific *p* values not provided).

*5.5. The effect of self-help on comorbid difficulties*

Titov, Gibson, Andrews and McEvoy (2009d) reanalysed data from 3 of their previous RCTs (Titov et al, 2008a, b,c) to examine the effect '*The Shyness Programme'* had on participants with cormorbid difficulties. Data from all treated participants (including control participants who had subsequently received the intervention) from these three studies was pooled (total n=211) and then divided into four participant groups; those at pre-intervention with; i) social phobia only; ii) social phobia with elevated symptoms of depression; iii) social phobia with elevated symptoms of generalised anxiety; and iv) social phobia with elevated symptoms of depression and generalised anxiety. All four groups significantly improved pre-post intervention on self-report social anxiety measures (all within effect sizes *d*>1.0), with no between group differences. For the two groups with elevated symptoms of depression, and the two groups with elevated symptoms of anxiety, significant improvements pre-post intervention were found on a self-report measure of depression, (within effect sizes *d*>1.27) and a self-report measure of general anxiety (within effect sizes *d*>1.59), respectively. Thus, '*The Shyness Programme'* produced significant reductions in social phobia symptoms whether participants had comorbid difficulties or not and also successfully produced improvements in comorbid symptoms. However, the participants only

had elevated levels of anxiety and depression; the results may not generalise to individuals who meet diagnostic criteria for generalised anxiety and depression.

*5.6. The addition of self-help to face-to-face interventions*

The main focus of the study by Salaberria and Echeburua (1998) was to determine the contribution cognitive therapy may add to exposure in face to face interventions for social phobia. They randomised 71 participants (48% female, mean age 31.0 years) to; i) exposure; ii) exposure with cognitive therapy; or iii) waitlist. Half of the participants in each of the intervention groups also received a self-help manual in the form of a book (Butler, 1990). The addition of the self-help manual did not improve outcomes for either intervention group at post-intervention or at 1, 3, 6, or 12 month follow-up; in fact there was a trend for greatest improvement in the exposure group without the self-help manual. Therefore, the addition of self-help material to face-to-face interventions was found to be of no extra benefit.

## 6. Discussion

The present review examined whether self-applied interventions can successfully treat social phobia and its related difficulties.  The studies consistently found that self-help interventions with varying degrees and types of therapist input significantly reduced self-reported symptoms of social phobia, with improvements enduring (or continuing to improve) up to 30 months post-intervention. Pre-post within effect sizes ranged between $d$=0.44-1.58, with most studies producing some effect sizes near those found following face-to-face CBT

(exposure *d*=0.81; cognitive therapy *d*=0.63; combined cognitive and exposure therapy *d*=1.06; Taylor, 1996). Some studies demonstrated that 19-84.2% (56% if use intention-to-treat analyses) of treated participants no longer met diagnostic criteria for social phobia post-intervention, and some demonstrated levels of clinically significant change rates of 27-95.6%. Clinically significant change found in five studies approached or bettered that found following face-to-face CBT (65%; see Rodebaugh, Holoway, & Heimberg, 2004). These outcomes were comparative to those found for self-applied interventions used to treat other disorders (see Spek et al., 2007). However, self-help materials do not appear to add any beneficial effect to face-to-face treatments (Salaberria and Echeburua, 1998), though further research is required to corroborate this finding.

The findings related to secondary outcomes were less consistent. Titov et al., (2009d) demonstrated that self-help produced improvements in comorbid anxiety and depression symptoms. However, the participants only had elevated levels of anxiety and depression, thus the results may not generalise to individuals who meet diagnostic criteria for generalised anxiety and depression. The majority of studies demonstrated significant improvements in self-report measures of depression, general anxiety, distress, disability and quality of life following self-help intervention. However, five studies found mixed results, with improvements on some secondary measures and not others (Abramowitz et al., 2009; Andersson et al., 2006; Carlbring et al., 2007; Titov et al., 2008a,b) and one study found no improvements on secondary measures at all (Berger et al., 2009). Thus, some self-help interventions may be too specific to social phobia to also improve secondary outcomes. However, the lack of improvement on the depression measures may have been due to floor effects. For the measures of disability and quality of life a

number of the items pertain to factors that are likely to take longer than the duration of a study to change (e.g. number of children, if married), hence the potential null findings.

Studies examining more specifically the effects of various types of therapist input also produced inconsistent findings. Carlbring et al. (2009) found no extra benefit from adding therapist telephone calls to their intervention. However, Titov et al., (2009b) found that the addition of telephone support to self-help improved outcomes with regard to social phobia symptoms. Titov et al., (2008c) found that the addition of therapist emails and forum posts improved outcomes. Whereas Furmark et al. (2009) found therapist email input did not improve outcomes. Tilfors et al. (2008) found that the addition of 5 group exposure sessions to internet-based self-help did not appear to improve outcomes. Whereas, Rapee, Abbott, Baillie and Gaston (2007) found that self-help augmented by group sessions produced improvements that did not differ from group CBT treatment as usual, and that self-help alone produced limited improvements. Where the addition of therapist involvement did improve outcomes it appeared to be an indirect effect through increasing treatment completion rates (Rapee et al., 2007; Titov et al., 2009b; Titov et al., 2008c). Titov et al., (2009c) found equivalent completion rates and outcomes between the addition of telephone support or online support to their self-help. Research into other disorders has shown self-help with minimal therapist involvement tends to produce greater effect sizes and higher completion rates than 'pure' self-help interventions (i.e. no therapist involvement) e.g. Palmqvist, Carlbring, and Andersson (2007). Further research is needed to tease out what forms of therapist input do improve outcomes, how they improve outcomes, and in what circumstances.

Furmark et al. (2009) found no differences in outcome between bibliotherapy alone and internet-based self-help, with bibliotherapy accompanied by access to an online forum also producing equivalent effect sizes to internet-based self-help. This suggests that self-help can be of equivalent use whether delivered in the form of a book or via the internet. However, the research into bibliotherapy is limited, with Rapee et al. (2007) demonstrating that bibliotherapy alone produced limited improvements. Again, further research is needed to compare the outcomes of self-help when delivered in different formats.

The majority of the studies were RCTs, which are at the top of the quality hierarchy for unsynthesised evidence (Evans, 2002). However, caution is still required in accepting the above findings due to a number of limitations in these studies. Firstly, the majority of the studies compared self-help to waitlist controls. Thus, the findings of these studies could be due to placebo effects or social desirability effects; participants may be grateful for receiving an intervention so exaggerate their levels of improvement. This may be a particular issue with participants with social phobia as they fear negative evaluation and often show perfectionistic traits (Juster et al.,1996), and the reliance of all studies on self-report measures compounds this issue. Also, most of these studies do not compare pure self-help to waitlist (i.e. the self-help is often accompanied by a forum and/or therapist involvement). Thus, although efficacious, the specific effectiveness of the self-help interventions cannot be determined.

Secondly, only two studies compared self-help to other active treatments (Rapee et al., (2007) to group CBT as usual; and Furmark et al. (2009) to internet-based relaxation). Rapee et al. (2007) demonstrated limited effects of self-help alone in comparison to group CBT and self-help+group sessions. However, the

effect of the group sessions added to the self-help was not controlled for, thus limited conclusions can be made about the effectiveness of self-help in this study. Furmark et al. (2009) questioned the specificity of self-help CBT interventions due to equivalent outcomes being found following internet-based relaxation. More adequately controlled research is needed to determine the effectiveness of the actual self-help interventions used.

Thirdly, the inclusion/exclusion criteria used by all of the studies limits the external validity of the findings; although participants met diagnostic criteria for social phobia the samples used may not be representative of the actual clinical population of individuals with social phobia/anxiety. Participants were excluded if they had severe depression, were actively suicidal or if they were misusing substances; these are three comorbid difficulties often found amongst individuals with social phobia (e.g. Cox, Direnfeld, Swinson, & Norton, 1994; Merikangas & Angst, 1995; Schneier, Martin, Liebowitz, Gorman, & Fyer, 1989). Self-selection biases may also limit the generalisability of the findings; in all studies the participants either selected self-help over other treatments, or responded to an advert to participate. Thus, these participants may be more motivated to engage in self-help than the general population of individuals with social phobia. Also, in all studies the participants were educated to a significantly higher degree than their population average. The findings may fail to generalise to an older population of individuals with social phobia (across these studies the oldest participant was 67 years, and the mean age was 36.57 years), particularly given the use of the internet to deliver the majority of these interventions. Although many older individuals are very experienced and able at using computers and the internet, many are not familiar (Selwyn, Gorard, Furlong, & Madden, 2003). Aydos et al. (2008) did show

that the outcomes from self-help generalised when delivered as part of routine clinical practice, however these findings are difficult to accept due to the lack of control or baseline data.

*Implications for Clinical Practice*

Overall, self-help interventions are a promising treatment for social phobia. They have been shown to be efficacious in treating social phobia and it's related difficulties, producing some outcomes comparable to those of face-to-face CBT. Where therapists where involved in self-help the mean total time they spent per participant ranged between 35 minutes to 3 hours. This is significantly less than the time spent conducting individual and group therapy (Butler, 2001). Titov et al. (2009c) estimated that their self-help intervention was able to produce the same gains at four times lower cost than face-to-face group treatment ($AUD1495 versus $AUD5686). Thus, self-help interventions may prove to be time efficient and economic treatments for social phobia, and may be suitable for integration into a stepped model of care as seen for depression, panic and other phobias (NICE; 2006).

However, prior to this further research needs to determine more clearly the intervention factors that produce the best outcomes most efficiently and economically (i.e. with/without therapist involvement; type of therapist involvement; mode of delivery), and if the actual self-help interventions are the effective ingredient at all. Thought would also need to be given to how client wellbeing is monitored whilst completing self-help, and to how individuals would

access such self-help; if it is via primary care it still may not reach those individuals who are too severely phobic to seek help.

*Future Research*

As mentioned above, future research needs to clarify the effectiveness of self-help interventions for social phobia, and determine more specifically what factors improve outcomes and through what mechanisms. Individual factors that predict improved outcomes have yet to be investigated. It appears that improved outcomes in relation to therapist involvement may occur via increased treatment completion rates. Titov et al. (2008c) found that their non-completers had significantly higher depression and disability scores pre-intervention. Future research could investigate such factors within an individual that makes them more likely to adhere to a treatment, as well as other intervention factors that predict adherence. For example, Varley, Webb and Sheeran (in press) demonstrated that self-help materials for general anxiety produced better outcomes when accompanied by the formation of implementation intentions ('if...then' plans) that provided direction as to when the self-help techniques were to be used. Future research could investigate whether the formation of implementation intentions can augment the outcomes achieved by self-help intervention for social phobia. The generalisability of self-help to a regular clinical population also needs to be addressed.

Finally, all the self-help interventions used in these studies were based upon CBT; no alternative self-applied interventions for social phobia/anxiety have been investigated. Other interventions that have been found to be helpful in

managing social anxiety may be suitable for self-application. For example, Webb, Ononaiye, Sheeran, Reidy, & Lavda (2010) found that moderating attentional biases through forming implementation intentions prevented the effects of social anxiety on a performance task. However, in this study the participants did not choose their implementation intentions and were directed by the experimenter in forming them. Thus, it may be fruitful to determine if socially anxious individuals can self-apply implementation intentions effectively.

*Conclusions*

Self-applied interventions are efficacious for social phobia, and may prove to be efficient and economical treatments. However, the effectiveness of self-help interventions for social phobia, and the effect of therapist involvement (and type of involvement), is unclear due to a lack of studies appropriately controlled to address such issues. Further research is needed to determine specifically what factors improve outcomes, and examine other interventions for social phobia/anxiety that may be suitable for self-application, so that any interventions provided are the most effective, economical and efficient they can be.

**References**

Abramowitz, J. S., Moore, E. L., Braddock, A. E., & Harrington, D. L. (2009). Self-help cognitive-behavioral therapy with minimal therapist contact for social phobia: A controlled trial. *Journal of Behavior Therapy and Experimental Psychiatry, 40,* 98-105.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Andersson, G., Bergstrom, J., Hollandare, F., Carlbring, P., Kaldo, V., & Ekselius, L. (2005). Internet-based self-help for depression: randomised control trial. *The British Journal of Psychiatry, 187*, 456-461.

Andersson, G., & Carlbring, P. (2009). Commentary on Berger, Hohl, and Caspar's (2009) internet based treatment for social phobia: A randomized control trial. *Journal of Clinical Psychology, 65,* 1036-1038.

Andersson, G., Carlbring, P., Holmström, A., Sparthan, E. S., Furmark, T., Ekselius, L., Nilsson-Ihrfelt, E., & Buhrman, M. (2006). Internet-based self-help with therapist feedback and in vivo group exposure for social phobia: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 74,* 677-686.

Antony, M. M., & Swinson, R. P. (2000). *The shyness and social anxiety workbook: Proven techniques for overcoming your fears.* Oakland, CA: New Harbinger Publications.

Aydos, L., Titov, N., & Andrews, G. (2009). Shyness 5: The clinical effectiveness of internet-based clinician assisted treatment of social phobia. *Australasian Psychiatry, 17,* 488-492.

Baker, S. L., Heinrich, N., Kim, H. J., & Hofmann, S. G. (2002). Liebowitz Social Anxiety Scale as a self-report instrument: A preliminary psychometric analysis. *Behaviour Research and Therapy, 50,* 701-715.

Beck, A. T., Epstein, N., Brown, G., & Steer, S. (1988). An inventory for measuring clinical anxiety: psychometric properties. *Journal of consulting and clinical Psychology, 56,* 893-897.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4,* 561-571.

Botella, C., Gallego, M. J., Garcia-Palacios, A., Banos, R. M., Quero, S., & Alcaniz, M. (2009). The acceptability of an internet-based self-help treatment for fear of public speaking. *British Journal of Guidance & Counselling, 37*, 297-311.

Botella, C., Gallego, M. J., Garcia-Palacios, A., Banos, R. M., Quero, S., & Guillen, V. (2008). An Internet-based self-help program for the treatment of fear of public speaking: A case study. *Journal of Technology in Human Services, 26*, 182-202.

Botella, C., Guillen, V., Garcia-Palacios, A., Gallego, M. J., Banos, R. M., & Alcaniz, M. (2007). Telepsychology and self-help: The treatment of fear of public speaking. *Cognitive and Behavioral Practice, 14*, 46-57.

Botella, C., Hofmann, S. G., & Moscovitch, D. A. (2004). A self-applied, internet based intervention for fear of public speaking. *Journal of Clinical Psychology, 60*, 821-830.

Butler, G. (1990). *Manejo de la ansiedad.* Pamplona. Consejeŕia de salud del Gobierno de Navarra.

Butler, G. (1999). *Overcoming social anxiety and shyness: A self-help guide using cognitive behavioural techniques.* Robinson Publishing.

Butler, G. (2001). *Overcoming social anxiety and shyness: A self-help guide using cognitive behavioural techniques.* London: Constable & Robinson Publishing.

Carlbring, P., Furmark, T., Steczkó, J., Ekselius, L., & Andersson, G. (2006). An open study of Internet-based bibliotherapy with minimal therapist contact via email for social phobia. *Clinical Psychologist, 10,* 30-38.

Carlbring, P., Gunnarsdóttir, M., Hedensjö, L., Andersson, G., Ekselius, L., &
Furmark, T. (2007). Treatment of social phobia: randomised trial of
internet-delivered cognitive–behavioural therapy with telephone support .
*The British Journal of Psychiatry, 190,* 123-128.

Carlbring, P., Nilsson-Ihrfelt, E., Waara, J., Kollenstam, C., Buhrman, M., Kaldo, V.
(2005). Treatment of panic disorder: Live therapy vs self-help via internet.
*Behaviour Therapy, 32,* 751-764.

Carlbring, P., Nordgren, L. B., Furmark, T., & Andersson, G. (2009). Long-term
outcome of Internet-delivered cognitive–behavioural therapy for social
phobia: A 30-month follow-up. *Behaviour Research and Therapy, 10,* 848-
850.

Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In R. G.
Heimberg, M. Liebowitz, D. Hope, & F. Schneider (Eds.), *Social phobia:
Diagnosis, assessment and treatment* (pp. 69-93). New York: Guilford.

Cox, B. J., Direnfeld, D. M., Swinson, R. P., & Norton, G. R. (1994). Suicidal ideational
and suicide attempts in panic disorder and social phobia. *American Journal
of Psychiatry, 151,* 882-887.

Craske, M.,  Rose, R. D.,  Lang, A.,  Welch, S. S.,  Campbell-Sills, L.,  Sullivan, G.,
Sherbourne, C.,  Bystritsky, A.,  Stein, M. B., & Roy-Byrne, P. P. (2009).
Computer-assisted delivery of cognitive behavioral therapy for anxiety
disorders in primary-care settings. *Depression and Anxiety, 26,* 235-242.

Davidson, J. R., Potts, N. L., Richichi, E. A., & Ford, S. M. (1991). The brief social
phobia scale. *Journal of clinical Psychiatry, 52,* 48-51.

Derogatis, L. R. (1983). Symptom Checklist 90-Revised/ SCL-90-R. Administration
scoring and procedures manual. Baltimore, MD: Clinical Psychometric
Research.

Di Nardo, P. A., & Barlow, D. H. (1988). *Anxiety disorders interview schedule- revised (ADIS-R).* Albany, NY: Phobic and Anxiety Disorders Clinic.

Echeburúa, E., & Corral, P. (1987). *Escala de Adaptación.* Unpublished manuscript.

Erwin, C. T., Turk, C. L., Heimberg, R. G., Fresco, D. M, & Hantula, D. A. (2004). The internet: home to a sever population of individuals with social anxiety disorder. *Anxiety Disorders, 18,* 629-646.

Evans, D. Hierarchy of evidence: A framework for evaluating evidence evaluating healthcare interventions. *Journal of Clinical Nursing, 12,* 77 84.

Fenigstein, A., Scheier, M. F., & Buss, A. H. (1975). Public and private self consciousness: assessment and theory. *Journal of Consulting and clinical Psychology, 43,* 522-527.

First, M. B., Gibbon, M., Spitzer, R. L., & Williams, J. B. W. (1997). *Structured clinical interview for DSM-IV Axis I disorders (SCID-I).* Washington, DC: American Psychiatric Press.

Frisch, M. B., Cornell, J., & Villanueva, M. (1992). Clinical validation of the Quality of Life Inventory. A measure of life satisfaction for use in treatment planning and outcome assessment. *Psychological Assessment, 4,* 92-102.

Furmark, T., Carlbring, P., Hedman, E., Sonnenstein, A., Clevberger, P., Bohman, B., Eriksson, A., Hållén, A., Frykman, M., Holmström, A., & Sparthan, E. (2009). Guided and unguided self-help for social anxiety disorder: randomised controlled trial. *The British Journal of Psychiatry*, *195*, 440-447.

Furmark, T., Tillfors, M., & Everz, P. O. (1999). Social phobia in the general population: Prevalence and sociodemograpic profile. *Social Psychiatry and Psychiatric Epidemiology, 34,* 416-424.

Gega, L., Norman, I. J., & Marks, I. M. (2007). Computer-aided vs. tutor-delivered teaching of exposure therapy for phobia/panic: randomized controlled trial with pre-registration nursing students. *International Journal of Nursing Studies, 44,* 397-405.

Gross, R., Olfson, M., Gameroff, M. J., Shea, S., Feder, A., Lantigua, R., Fuentes, M., & Weissman, M. M. (2005). Social anxiety disorder in primary care. *General Hospital Psychiatry, 27,* 161-168.

Guy, W. (1976). *ECDEU assessment manual for psychopharmacology.* Washington, DC: Department of Health, Education, and Welfare.

Heimberg, R. G. (2001). Current status of psychotherapeutic interventions for social phobia. *Journal of Clinical Psychiatry, 62,* 136-142.

Hope, D. A., Heimberg, R. G., & Bruch, M. A. (1995). Dismantling cognitive behavioural group therapy for social phobia. *Behaviour Research and Therapy, 33,* 637-650.

Horowitz, L. M., Strauss, B., & Kordy, H. (2000). Inventory of Interpersonal Problems (IIP-D). Weinheim: Beltz Verlag.

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59,* 12-19.

Juster, H. R., Heimberg, R. G., Frost, R. O., Holt, C. S., Mattia, J. I., & Faccenda, K. (1996). Social phobia and perfectionism. *Personality and Individual Differences, 21,* 403-410.

Kessler, R. C., Andrews, G., & Colpe, L. J. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine, 32,* 956-976.

Kessler, R. C., & Unstun, T. B. (2004). The World Mental Health survey initiative
version of the World Health Organisation (WHO) Composite International
Diagnostic Interview (CIDI). *International Journal of Methods in Psychiatric
Research, 13,* 93-121.

Kiresuk, T., & Lund, S. (1976). Goal attainment scaling: Research, evaluation and
utilisation. In H. C. Schulberger & F. Parker (Eds.), *Program evaluation in
health fields* (vol. 2, pp. 214-237). New York: Human Science Press.

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief
depression severity measure. *Journal of General Internal Medicine, 16*, 606
613.

Leary, M. R. (1983). A brief version of the Fear of Negative Evaluation Scale.
*Personality and Social Psychology Bulletin, 9,* 371-375.

Ledley, D. R., Heimberg, R. G., Hope, D. A., Hayes, S. A., Zaider, T. I., Van Dyke, M.,
Turk, C. L., Kraus, C., & Fresco, D. M. (2009). Efficacy of a manualized and
workbook-driven individual treatment for social anxiety disorder.
*Behaviour Therapy, 40,* 414-424.

Mattick, R. P., & Clarke, J. C. (1998). Development and validation of measures of
social phobia scrutiny fear and social interaction anxiety. *Behaviour
Research and Therapy, 36,* 455-470.

Merikangas, K. R., & Angst, J. (1995). Comorbidity and social phobia: evidence from
clinical, epidemiologic, and genetic studies. *European Archives of Psychiatry
and Clinical Neuroscience, 244,* 297-303.

National Institute for Health and Clinical Excellence (2006). *Guidance on the use of
computerised cognitive behavioural therapy for anxiety and depression.
Technology Appraisal 97.* London: NICE.

Palmqvist, B., Carlbring, P., & Andersson, G. (2007). Internet delivered treatment with or without therapist input: Does the therapist factor have implications for efficacy and cost? *Expert Review Pharmacoeconomics Outcomes Research, 7,* 291-297.

Paul, G. (1966). *Insight versus desensitisation in psychotherapy: An experiment in anxiety reduction.* Palo Alto, CA: Stanford University Press.

Proudfoot, J., Ryden, C., Everitt, B., Shapiro, D. A., Goldberg, D., Mann, A., Tylee, A., Marks, I., & Gray, J. A. (2004). Clinical efficacy of computerised cognitive behavioural therapy for anxiety and depression in primary care: randomised control trial. *British Journal of Psychiatry, 185,* 46-54.

Rapee, R.M. (1998). *Overcoming shyness and social phobia: A step-by-step guide.* Northvale, NJ: Jason Aronson.

Rapee, R. M., Abbott, M. J., Baillie, A. J., & Gaston, J. E. (2007). Treatment of social phobia through pure self-help and therapist-augmented self-help. *British Journal of Psychiatry, 191,* 246-252.

Rapee, R. M., Craske, M. G., & Barlow, D. H. (1994). Assessment instrument for panic disorder that includes fear of sensation-producing activites: the Albany Panic and Phobia Questionnaire. *Anxiety, 1,* 114-122.

Rathus, A. (1973). A 30 items schedule for assessing assertive behaviour. *Behavior Therapy, 4,* 398-406.

Richards, D. (2004). Self-help: Empowering service users or aiding cash strapped mental health services? *Journal of Mental Health*, *13*, 117-123.

Richards, T. A. (2008). *Why we prefer the term 'social anxiety' to 'social phobia'.* Retrieved November 4, 2008 from the Social Anxiety Institute website: www.socialanxietyinstitute.org/prefer.html

Rodebaugh, T. L., Holaway, R. M., & Heimberg, R. G. (2004). The treatment of social anxiety disorder. *Clinical Psychology Review, 24,* 883-908.

Rosenberg, R. (1965). *Society and the adolescent self-image.* New Jersey: Princeton.

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

Schneier, F. R., Martin, L. Y., Liebowitz, M. R., Gorman, J. M., & Fyer, A. J. (1989). Alcohol abuse in social phobia. *Journal of Anxiety Disorders, 3,* 15-23.

Seekles, W., van Straten, A., Beekman, A., van Marwijk, H., & Cuijpers, P. (2009). Stepped care for depression and anxiety: from primary care to specialised mental health care: a randomised control trial testing the effectiveness of a stepped care program among primary care patients with mood or anxiety disorders. *BMC Health Services Research, 9,* 90-100.

Selwyn, N., Gorard, S., Furlong, J., & Madden, L. (2003). Older adults' use of information and communication technology in everyday life. *Ageing in Society, 23,* 561-582.

Sheehan, D. V. (1983). *The anxiety disease.* New York: Scribner.

Sheehan, D. V., Lecrubier, Y., Sheehan, K. H., Amorim, P., Janavs, J., & Weiller, E. (1998). The Mini-International Neuropsychiatric Interview (MINI): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *Journal of Clinical Psychiatry, 59,* 22-33.

Spek, V., Cuijpers, P., Nyklicek, I., Riper, H., Keyzer, J., & Pop, V. (2007). Internet based cognitive behaviour therapy for symptoms of depression and anxiety: A meta-analysis. *Psychological Medicine, 37,* 319-328.

Spielberger, C. D., Gorsuch, R. L., Lushene, R. E., Vagg, R. E., & Jacobs, G. A. (1983). *Manual for the State-Trait Anxiety Inventory.* Palo Alto, CA: Consulting Psychologists Press.

Spitzer, R.L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalised anxiety disorder the GAD-7. *Archives of International Medicine, 166,* 1092-1097.

Storm, A., King, S. A., & Poulos, S. T. (1998). Using the Internet to treat generalized social phobia and avoidant personality disorder. *CyberPsychology & Behavior, 1*, 29-36.

Svanborg, P., & Åsberg , M. (1994). A new self-rating scale for depression and anxiety states based on the comprehensive psychopathological rating  scale. *Acta Psychiatrica Scandinavica, 89,* 21-28.

Taylor, S. (1996). Meta-analysis of cognitive-behavioral treatments for social phobia. *Journal of Behavior Therapy and Experimental Psychiatry, 27,* 1-9.

Tillfors, M., Carlbring, P., Furmark, T., Lewnhaupt, S., Spak, M., Eriksson, A., Westling, B. A., & Andersson, G. (2008). Treating university students with social phobia and public speaking fears: Internet delivered self-help with or without live group exposure sessions. *Depression and Anxiety, 25,* 707-717.

Titov, N., Andrews, G., Choi, I., Schwencke, G., & Johnston, L. (2009b). Randomized controlled trial of web-based treatment of social phobia without clinician guidance.  *Australian and New Zealand Journal of Psychiatry, 43,* 913-919.

Titov, N., Andrews, G., Choi, I., Schwencke, G., & Mahoney, A. (2008c). Shyness 3: randomized controlled trial of guided versus unguided Internet-based CBT for social phobia. *Australian and New Zealand Journal of Psychiatry, 42,* 1030-1040.

Titov, N., Andrews, G., Johnston, L. , Schwencke, G., & Choi, I. (2009a). Shyness

programme: Longer term benefits, cost-effectiveness, and acceptability.

*Australian and New Zealand Journal of Psychiatry, 43,* 36-44.

Titov, N., Andrews, G., & Schwencke, G. (2008b). Shyness 2: Treating social phobia

online: replication and extension. *Australian and New Zealand Journal of*

*Psychiatry, 42,* 595-605.

Titov, N., Andrews, G., Schwencke, G., Drobny, J., & Einstein, D. (2008a). Shyness 1:

Distance treatment of social phobia over the internet. *Australian and New*

*Zealand Journal of Psychiatry, 42,* 585-594.

Titov, N., Andrews, G., Schwencke, G., Solley, K., Johnston, L., & Robinson, E.

(2009c). An RCT comparing effect of two types of support on severity of

symptoms for people completing Internet-based cognitive behaviour

therapy for social phobia. *Australian and New Zealand Journal of Psychiatry,*

*43,* 920-926.

Titov, N., Gibson, M., Andrews, G., & McEvoy, P. (2009d). Internet treatment for

social phobia reduces co-morbidity. *Australian and New Zealand Journal of*

*Psychiatry, 43,* 754-759.

Varley, R., Webb, T. L., & Sheeran, P. (In press). Making self-help more helpful: A

randomized controlled trial of the impact of augmenting self-help materials

with implementation intentions in promoting the effective self

management of anxiety symptoms. *Journal of Consulting and Clinical*

*Psychology.*

Watson, D., & Friend, R. (1969). Measurement of social-evaluative anxiety. *Journal*

*of Consulting and Clinical Psychology, 33,* 448-457.

Webb, T. L., Ononaiye, M. S. P., Sheeran, P., Reidy, J., & Lavda, A. (2010). Using

implementation intentions to overcome the effects of social anxiety on

attention and appraisals of performance. *Personality and Social Psychology*

*Bulletin, 36,* 612-627.

World Health Organisation (2007). *World Health Organisation (WHO) Disability*

*Assessment Schedule.* Retrieved November 4, 2009 from WHO website:

http://www.who.int/icidh/whodas/

**Appendix A: Tabulated summary of included studies**

**Table 1:** Summary of included studies

| Study | Pp. number & source | Outcome measures | Design | Analysis | Outcome | Effect size for intervention group/s ($d$) |
|---|---|---|---|---|---|---|
| Carlbring et al. (2006) | $N$ = 26 through media adverts. All met DSMIV[a] criteria for SP[b] (assessed by SPSQ[c] & SCID[d]). | *Self-report:* LSAS[e] SPS[f] SIAS[g] SPSQ BAI[h] MADRS[i] QoLI[j]  % no longer meeting DSMIV SP criteria | One group received:  i) 9-week self-help internet-based CBT[k] (based upon self-help manuals) +online discussion forum + weekly emails from a therapist (180min per Pp. in total).  Outcome data collected at pre & post intervention, & 6 month FU[l.] | Intention to treat  Repeated measures ANOVA +  Post-hoc t-tests Bonferroni corrected  Chi² test for % no longer meeting SP criteria | *Pre-post:* Signif. reductions on LSAS, SPS, SIAS, SPSQ, BAI, MADRS; & signif. increase on QUoL.  Improvements retained/ further improved at FU.  *Post:* 46.2% no longer met SP criteria. | *Pre-post:* LSAS= 0.88 SPS= 0.85 SIAS= 1.06 SPSQ= 1.38 BAI= 0.50 MADRS= 0.84 QoLIL= 0.69  *Pre-FU:* LSAS= 1.44 SPS= 1.44 SIAS= 1.52 SPSQ= 2.04 BAI= 1.00 MADRS= 1.03 QoLI= 0.70 |
| Abramowitz et al. (2009) | $N$= 21 through adverts & MHPs[m]. All met DSMIV SP criteria (assessed by MINI[n], BSPS[o] & CGI-S[p]). | *Self-report:* BSPS BDI[q] SIAS STAIT[r]  *Rater:* CGI-S  % clinically signif. change | RCT  *IV[s]= Group* i) 8 week self-help from a book + 5 therapist meetings (<30min) + 3 therapist phone calls (<15 min) to review weekly progress.  ii) Waitlist control.  Outcome data collected pre & post-intervention, & 3 month FU. | Mixed ANOVAs + repeated measures ANOVAs  RCI[t] | *Pre-post:* Signif. decrease on all measures (except STAIT) for self-help group.  Retained at FU.  RCI 27% at post- intervention, and 36% at FU for self-help group. | *Pre – post:* BSPS= 1.39 SIAS= 1.24 CGI-S= 0.65 STAIT= 0.63 BDI= 1.72  *Pre- FU:* BSPS= 1.39 SIAS= 1.07 CGI-S= 1.42 STAIT= 1.08 BDI= 1.51 |

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| Titov et al. (2008a) | *N*= 105 through media adverts. All met DSMIV SP criteria (assessed by CIDI[u]). | *Self-report:* SIAS SPS WHODAS[v] K-10[w] PHQ-9[x] | RCT<br><br>*IV= Group*<br>i) 7-10 week (6 module) internet-based CBT self-help + online forum + weekly therapist email (125min per Pp. in total).<br><br>ii) Waitlist control + online forum.<br><br>Outcome data collected pre & post intervention. | Intention to treat<br><br>Mixed ANOVAs + post-hoc t-tests Bonferroni corrected | *Pre-post:* Signif. decreases on SIAS, SPS, & K-10 for self-help group.<br><br>No signif. effect of group x time for WHODAS or PHQ-9. | *Pre-post:* SIAS= 1.24 SPS= 1.06 WHODAS= 0.63 K-10= 0.82 PHQ-9= 0.57 |
| Titov et al. (2008b) | *N*= 88 through media adverts. All met DSMIV SP criteria (assessed by CIDI). | *Self-report:* SIAS SPS WHODAS K-10 PHQ-9 | RCT<br><br>*IV= Group*<br>i) 7-10 week (6 module) internet-based CBT self-help + online forum + weekly therapist email (125min per Pp. in total).<br><br>ii) Waitlist control + online forum.<br><br>Outcome data collected pre & post intervention. | Intention to treat<br><br>Mixed ANOVAs + post-hoc t-tests Bonferroni corrected | *Pre-post:* Signif. decreases on SIAS, SPS, & WHODAS for self-help group.<br><br>No signif. effect of group x time for PHQ-9 or K-10. | *Pre-post:* SIAS =1.21 SPS= 1.14 WHODAS =0.77 K-10= 0.61 PHQ-9= 0.81 |
| Titov et al. (2009a) | 59 % of self-help Pp.s from Titov et al. (2008a,b). | *Self-report:* SIAS SPS WHODAS K-10 PHQ-9 | Pp.'s who had received self-help completed outcome measures again 6 months post-intervention.<br><br>No follow-up waitlist control data was collected. | Intention to treat<br><br>Repeated measures ANOVAs +post-hoc t-tests Bonferroni corrected | *Pre-post:* Signif. decreases on all measures.<br><br>*Post-FU:* Maintained on WHODAS, K-10, & PHQ-9; further improvement on SIAS & SPS. | *Pre-post:* SIAS= 1.24 SPS= 1.10 WHODAS= 0.70 K-10 =0.72 PHQ-9 =0.68<br><br>*Pre-FU:* SIAS =1.50 SPS= 1.31 WHODAS= 0.77 K-10= 0.82 PHQ-9 =0.81 |

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| Berger et al. (2009) | $N$= 52 through media adverts<br>All met DSMIV SP criteria (as assessed by SCID). | *Self-report:*<br>LSAS<br>SPS<br>SIAS<br>SCL-90[y]<br>BDI<br>IIP[z]<br>GAS[aa]<br><br>% clinically signif. change | RCT<br><br>*IV= Group*<br>*i)* 10 week, 5-module internet-based CBT self-help intervention, (based on Clark and Wells, 1995) + therapist emails (5.5 emails per Pp. in total) + online forum.<br><br>ii) Waitlist control.<br><br>Outcome data collected pre & post intervention. | Intention to treat<br><br>MANOVA + mixed ANOVAs<br><br>RCI<br><br>Chi² | *Pre-post* :<br>Signif. reduction on LSAS, SPS, & SIAS for the self-help group.<br><br>No signif. effect of group x time on SCL-90, BDI, IIP, or GAS.<br><br>RCI 54.8- 58.1% across the outcome measures for self-help; this was a signif. greater proportion than the waitlist group on all measures. | *Pre-post:*<br>LSAS =0.82<br>SPS= 0.88<br>SIAS= 0.76<br>SCL-90= 1.05<br>BDI =1.03<br>IIP= 0.63<br>GAS =1.44 |
| Carlbring et al. (2007) | $N$ = 57<br>All met DSMIV SP criteria (assessed by SPSQ & telephone SCID interview). | *Self-report:*<br>LSAS-S<br>SPS<br>SIAS<br>SPSQ<br>BAI<br>MADRS<br>QoLI | RCT<br><br>*IV= Group*<br>i) 9 week internet-based CBT self-help( adapted from a book) + online forum + weekly therapist emails (total 180min per Pp.) + weekly therapist telephone calls (mean 10.5 mins per call).<br><br>ii) Waitlist control<br><br>Outcome data collected at pre & post-intervention, & 12 month FU. | Intention to treat<br><br>Mixed ANOVAs + post-hoc t-tests Bonferroni corrected | *Pre-post:*<br>Signif. decrease on LSAS-S, SPS, SIAS, SPSQ, BAI, & MADRS for self-help group.<br><br>No signif. group x time effect on QoLI.<br><br>*Post-FU:*<br>Findings retained for all measures, except QoLI where signif. improvement seen. | *Pre- post:*<br>LSAS-S= 1.03<br>SPS= 1.07<br>SIAS= 1.16<br>SPSQ= 1.11<br>BAI= 0.79<br>MADRS= 0.69<br>QoLI= 0.37<br><br>*Pre -follow up:*<br>Mean across measures of 1.02. |

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| Carlbring et al. (2009) | 77.2% of treated Pp.'s from Carlbring et al. (2007) (including waitlist Pp.'s that went on to receive self-help). | *Self-report (via internet):* LSAS-S SPS SIAS SPSQ BAI MADRS QoLI  *Rater:* CGI-I  Clinically signif. change  % no longer meeting SP criteria | Waitlist Pp.'s from Carlbring et al. (2007) also received same self-help but without telephone support.  At 30-month FU:  77.2% re-completed outcome measures.  66.7% completed diagnostic telephone interview (SCID). | Intention to treat  Mixed ANOVA (for effect of telephone support)  Repeated measures ANOVA for entire sample + post-hoc t-tests  RCI | No signif. effect of telephone support x time.  *Pre-post:* Signif. improvements of all measures.  *Pre-FU:* Improvement maintained on SIAS & MADRS. Further improvement on all other measures.  68.4% much improved on CGI-I.  33.3- 95.6% RCI across the outcome measures.  84.2% no longer met the diagnostic criteria for SP (56% if assumed non-completers of interview failed by self-help). | *Pre-FU:* 0.47-1.73 across measures |
| Andersson et al. (2006) | *N* = 64 through media adverts. All met DSMIV SP criteria (assessed by SPSQ & face-to-face administered SCID interview). | *Self-report (on paper via post):* LSAS SPS SIAS SPSQ PRCS[bb] MADRS BAI QoLI  Clinically signif. change | RCT  *IV= group* i) 9-week self-help internet-based CBT (based upon self-help manuals) +online discussion forum + weekly emails from a therapist (180min per Pp. in total) + 2 3hr group exposure sessions.  ii) Waitlist control +online forum.  Outcome data collected at pre & post intervention, & 12 month FU. | Intention to treat  MANOVA + repeated measures ANOVAs  RCI | *Pre-post:* Signif. decrease in LSAS, SPS, SIAS, SPSQ PRCS & BAI, and signif. increase in QoLI for self-help group.  No signif. group x time effect on MADRS.  RCI 43.3%- 73.0% across measures for self-help; signif. greater than RCI seen in the control group on all measures (except SIAS & MADRS).  *Post-FU:* Improvements retained. | *Pre-post:* LSAS= 0.91 SPS= 0.96 SIAS= 1.16 SPSQ= 1.21 PRCS= 0.58 MADRS= 0.75 BAI= 0.75 QoLI= 0.61  *Pre-FU:* LSAS =1.29 SPS= 1.12 SIAS =1.09 SPSQ= 1.50 PRCS =0.68 MADRS= 0.70 BAI =0.61 QoLI= 0.43 |

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| Titov et al. (2009b) | *N* = 163 through website. All met DSMIV SP criteria (assessed by telephone administered MINI). | *Self-report:* SIAS SPS PHQ-9 K-10 SDS[cc] | RCT<br><br>*IV = group*<br>i) internet-based CBT self-help + telephone support (mean total time 38.7mins per Pp.)+ weekly email.<br><br>ii) internet-based CBT self-help (no telephone support) + weekly email.<br><br>Outcome data completed pre & post intervention. | Intention to treat<br><br>ANCOVAs + post-hoc t-tests Bonferroni corrected | *Pre-post* :<br>Signif. decrease on SIAS & SPS for both groups. Decrease signif. greater for telephone support group on SIAS.<br><br>Signif. decrease on PHQ-9, K-10 & SHS for both groups; no between-group differences. | *Between:* SIAS= 0.30<br><br>*Pre-post:* For telephone support = 0.89-1.41.<br><br>For no support= 0.73-0.98. |
| Titov et al. (2008c) | *N* = 98 through website. All met DSMIV SP criteria (assessed by telephone administered MINI). | *Self-report:* SIAS SPS PHQ-9 K-10 SDS | RCT<br><br>*IV = group*<br>i) waitlist control.<br><br>ii) internet-based CBT self-help + online forum (with no therapist input).<br><br>iii) internet-based CBT self-help +online forum where a therapist responded to posts + therapist emails (total mean time spent per Pp. 168mins plus 25mins admin.).<br><br>Outcome data completed pre & post intervention. | Intention to treat<br><br>ANCOVAs + post-hoc t-tests Bonferroni corrected | *Pre-post:*<br>Self-help+ therapist involvement group signif. improved to a greater degree than the other two groups on SIAS & SPS, & than waitlist group on SHS.<br><br>No other signif. between group differences found. | *Between self-help groups*: SIAS= 0.64 SPS= 0.67<br><br>*Pre-post with therapist input:* SIAS= 1.47 SPS= 1.17<br><br>*Pre-post (no therapist input):* SIAS= 0.38 SPS= 0.28 |

| Titov et al. (2009c) | N= 82 through website. All met DSMIV SP criteria (assessed by telephone administered MINI). | Self-report: SIAS SPS PHQ-9 K-10 SDS | RCT IV= group i) internet-based CBT self-help +weekly therapist telephone calls (mean time spent 38.01mins per Pp.) ii) self-help + online forum where a therapist responded to posts (mean time spent per Pp.36.92mins). Outcome data completed pre & post intervention. | Intention to treat ANCOVAs | Pre-post: Both groups showed signif. improvements on all measures; no signif. differences in improvements between the groups. | Pre-post for telephone group: SIAS= 1.47 SPS= 1.15 PHQ-9= 0.48 K-10= 0.81 SDS= 0.84 Pre-post for forum group: SIAS= 1.56 SPS= 1.51 PHQ-9= 0.73 K-10= 0.95 SHS= 1.08 |
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| Furmark et al. (2009) | **Trial 1**<br>*N*= 120<br><br>**Trial 2**<br>*N*=131<br><br>All through media adverts & websites.<br>All met DSMIV SP criteria (assessed by SPSQ & telephone administered SCID). | *Self-report (via internet):*<br>SPSQ<br>MADRS<br>LSAS<br>SPS<br>SIAS<br>BAI<br>QoLI | RCT<br>**Trial 1**<br><br>*IV= group*<br>i) 9 week internet-based CBT self-help (adapted from a book) + online discussion forum + therapist email.<br><br>ii) Bibliotherapy (same content as internet CBT but delivered in a book).<br><br>iii) Waitlist control.<br><br>**Trial 2**<br><br>*IV= group*<br>i) 9 week internet CBT+ therapist email + online forum.<br><br>ii) Bibliotherapy alone.<br><br>iii) Bibliotherapy + online forum.<br><br>iv) Internet self-help relaxation + online forum + therapist email.<br><br>Outcome data collected pre & post intervention, & 12 month FU for both trials. | ANCOVA + post-hoc t-tests<br>Bonferroni corrected | *Pre-post* :<br><br>**Trial 1**<br><br>Both self-help groups showed signif. greater improvements on all outcome measures when compared to the waitlist group; no signif. differences between the intervention groups.<br><br>These results were retained at 1 year follow-up.<br><br>**Trial 2**<br><br>All groups signif. improved on all measures; retained at 12 month follow-up.<br>No signif. differences between the interventions at any point. | *Pre-post:*<br><br>**Trial 1**<br><br>Bibliotherapy = 0.65-0.89<br><br>Internet self-help = 0.85-1.29<br><br><br>**Trial 2**<br><br>Internet-based self-help= 0.81-1.58.<br><br>Bibliotherapy = 0.65-1.11<br><br>Bibliotherapy+ forum =1.06-1.63<br><br>Relaxation= 0.82-1.00. |

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| Tillfors et al. (2008) | *N* = 38 through media adverts. All met DSMIV SP criteria (assessed by SPSQ & telephone administered SCID). | *Self-report:* LSAS SPS SIAS SPSQ MADRS BAI QoLI<br><br>Clinically signif. change | RCT<br><br>*IV = group* i) internet-based CBT self-help + 5 group exposure sessions+ online forum + weekly therapist emails (total of 35mins per Pp. spent on emails).<br><br>ii) internet-based CBT self-help without exposure sessions + online forum + weekly therapist emails (total of 35mins per Pp. spent on emails).<br><br>Outcome data collected pre & post intervention, & 12 month FU. | Intention to treat<br><br>Mixed ANOVA<br><br>ANCOVA + post-hoc tests | *Pre-post:* Both groups signif. improved on LSAS, SPS, SIAS, SPSQ, MADRS, BAI & QoLI with no between groups differences.<br><br>*Pre-FU:* Results as above.<br><br>Mean RCI 58.35%,with exposure, and 55.25% without exposure; no signif. differences between groups on RCI for any measure.<br><br>*Compared to waitlist data from similar study:*<br><br>Both self-help groups signif. more improved than controls post-intervention. | *Pre-post:*<br><br>With exposure: LSAS= 0.82 SPS= 1.11 SIAS= 0.77 SPSQ= 1.31 MADRS= 0.49 BAI= 0.81 QoLI =0.22<br><br>Without exposure: LSAS= 1.01 SPS= 1.18 SIAS= 0.81 SPSQ= 1.05 MADRS= 0.85 BAI= 0.64 QoLI =0.52 |

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| Rapee et al. (2007) | N = 225<br>All met DSMIV SP criteria (as assessed by SCID). | *Self-report measures combined into composite measure:*<br>SIAS<br>SPS<br>BFNE[dd]<br>APPQ[ee]<br>SCS[ff]<br><br>LIS[gg]<br><br>% no longer meeting SP criteria | RCT<br><br>*IV= group*<br>i) Waitlist control.<br><br>ii) Self-help alone delivered in a book.<br><br>iii) Self-help book + 5 2hr group sessions.<br><br>iv) Group treatment as usual (10 2hr sessions of group CBT paralleling self-help book content).<br><br>Outcome data collected pre & post intervention, & 3 & 6 month FU. | Intention to treat<br><br>Mixed ANOVA + post-hoc t-tests<br><br>Fisher's exact test | *Pre-post:*<br><br>Self-help+group sessions & group CBT signif. improved on composite SP measure & on LIS when compared to waitlist; no signif. differences between these two intervention groups.<br><br>No signif. differences between self-help alone and waitlist.<br><br> Results replicated at 6 month FU.<br><br><br>*Post:*<br><br>All intervention groups had signif. greater proportions no longer meeting SP criteria (19-22%; no significant differences between these intervention groups) when compared to the waitlist group (6%).<br><br>At 3 month FU, the self-help+ group sessions, and the group CBT as usual groups showed signif. greater proportions no longer meeting SP criteria (26% and 22% respectively) when compared to self-help alone (11%). | *Pre-post on composite measure:*<br><br>Self-help alone = 0.44<br><br>Self-help+group sessions = 0.91<br><br>Group CBT= 0.91 |

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| Aydos et al. (2009) | *N*= 17 through website & media. All met DSMIV SP criteria (assessed by telephone administered MINI). | *Self-report:* SIAS SPS PHQ-9 K-10 SDS | One group: i) internet-based CBT self-help+ online forum + therapist emails(mean time spent per Pp. 155 mins). Administered by psychiatric registrar as part of a standard clinical treatment at an outpatient social anxiety disorders clinic. No control group was utilised and no baseline data was acquired. Outcome data collected pre & post. | Intention to treat Within group t-tests | *Pre-post:* Signif. improvement on all measures. | | *Pre-post:* SIAS= 1.05 SPS= 0.48 PHQ-9= 0.60 K-10= 0.59 SDS= 0.67 |
| Titov et al. (2009d) | Data from all treated Pp.s (including controls who had subsequently received self-help) from 3 studies (Titov et al., 2008a,b,c) was pooled. Total *N*= 211 | *Self-report:* SIAS SPS PHQ-9 GAD-7[hh] | Data divided into 4 groups; those at pre-intervention with: i) SP only. ii) SP with elevated symptoms of depression. iii) SP with elevated symptoms of generalised anxiety. iv) SP with elevated symptoms of depression and generalised anxiety. | Mixed ANOVA + post-hoc t-tests Bonferroni corrected | *Pre-post:* All groups signif. improved on SIAS & SPS, with no between group differences. For the two groups with elevated symptoms of depression, and the two groups with elevated symptoms of anxiety, signif. improvements were found on PHQ-9, and GAD-7, respectively. | | *Pre-post:* SIAS= 1.09-1.73 across groups SPS= 1.02-1.19 across groups PHQ-9= 1.27-1.65 for depression groups GAD-7= 1.59-1.73 for general anxiety groups. |

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| Salaberria & Echeburua (1998) | *N*= 71 through mental health centres, self-referral & adverts. All met DSMIII criteria for SP (assessed by ADIS-R[ii]). | *Self -report:* SAD[jj] FNE[kk] STAIT BDI SoA[ll] RSE[mm] RAS[nn] | RCT <br><br> *IV= Group* i) Waitlist control. <br><br> ii) Self-exposure alone <br><br> iii) Self-exposure + CT group. <br><br> Half of each treatment group were given a self-help manual. <br><br> Outcome data collected pre-treatment, post-treatment and at 1, 3, 6, & 12 month FUs. | For effect of self-help manual = factorial ANOVA | *At post-treatment:* <br><br> Addition of self-help manual did not improve outcomes for either intervention group at post-intervention or at 1, 3, 6, or 12 month follow-up. <br><br> Trend for greatest improvement in the exposure group without the self-help manual. | None provided |

*Note:* [a]DSMIV = Diagnostic and Statistical Manual of Mental Disorders (4th ed; APA, 1994); [b]SP = social phobia; [c]SPSQ = Social Phobia Screening Questionnaire (Furmark et al., 1999); [d]SCID = Structured clinical interview for the DSM-IV (First, Gibbon, Spitzer, & Williams, 1997); [e]LSAS = Liebowitz Social Anxiety Scale (Baker, Heinrichs, Kim, & Hofmann, 2002); [f]SPS = Social Phobia Scale (Matticke & Clarke, 1998); [g]SIAS = Social Interaction Anxiety Scale (Matticke & Clarke, 1998); [h]BAI= Beck Anxiety Inventory (Beck, Epstein, Brown, & Steer, 1988); [i]MADRS= Montgomery Asberg Depression Rating Scale (Svanborg & Asberg, 1994); [j]QoLI = Quality of Life Inventory (Frisch, Cornell, Villanueva, & Retzlaff, 1992); [k]CBT = cognitive behavior therapy; [l]FU = follow-up; [m]MHPs = Mental Health Professionals; [n]MINI = Mini International Neuropsychiatric Interview (Sheehan et al., 1998); [o]BSPS = Brief Social Phobia Scale (Davidson et al., 1991); [p]CGI-S = The Clinical Global Impressions-Severity Scale (Gut, 1976); [q]BDI = Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961); [r]STAIT = State Trait Anxiety Inventory-Trait Form (Spielberger, Gorsuch, Lushene, Vaag, & Jacobs, 1983); [s]IV = Independent variable; [t]RCI = Reliable change index (Jacobson & Truax, 1991);[u]CIDI = Composite International Diagnostic Interview version 3 (Kessler & Ustun, 2004); [v]WHODAS = World Health Organisation Disability Assessment Schedule (World Health Organisation, 2007); [w]K-10 = Kessler-10 (Kessler, Andrews, & Colpe, 2002); [x]PHQ-9 = Patient Health Questionnaire- 9 item (Kroenke, Spitzer, & Williams, 2001); [y]SCL-90 = Symptom Check List (Derogatis, 1983); [z]IIP = Inventory of Interpersonal Problems (Horowitz, Strauss, & Kordy, 2000); [aa]GAS = Goal Attainment Scale (Kiresuk & Lund, 1979); [bb]PRCS = Personal Report of Confidence as a Speaker (Paul, 1966); [cc]SDS= Sheehan Disability Scales (Sheehan, 1983); [dd]BFNE = Brief Fear of Negative Evaluation Scale (Leary, 1983); [ee]APPQ = Albany Panic and Phobia Questionnaire (Rapee et al.,1994); [ff]SCS = Self-consciousness Scale (Fenigstein, Scheier, & Buss, 1975); [gg]LIS = Life Interference Scale; [hh]GAD-7 = Generalized Anxiety Disorder 7-item (Spitzer, Kroenke, Williams, & Löwe, 2006); [ii]ADIS-R = Anxiety Disorders Interview Schedule- Revised (DiNardo & Barlow, 1988); [jj]SAD = Social Avoidance and Distress Scale (Watson & Friend, 1969); [kk]FNE = Fear of Negative Evaluation (Watson & Friend, 1969); [ll]SoA = Scale of Adaptation (Echeburúa & Corral, 1987); [mm]RSE= Rosenberg Self-Esteem Scale (Rosenberg, 1965); [nn]RAS = Rathus Assertiveness Scale (Rathus, 1973).

# Using implementation intentions to prevent social anxiety effects on performance evaluation and state anxiety

**ABSTRACT**

People with high levels of social anxiety show attentional biases that have a detrimental effect on their performance evaluations and subsequent state anxiety. Altering this attentional bias using implementation intentions may reduce these negative effects of social anxiety. 84 students completed the Social Avoidance and Distress Scale (mean 16.01, SD = 5.72, range 8-27) and identified an upcoming, real world anxiety-provoking social situation. Participants were randomly allocated to (i) control, (ii) goal intention (asked to keep calm and not focus on negative things in their social situation), or (iii) implementation intention (additionally made an 'if...then' plan to focus their attention on positive stimuli in their social situation) conditions. These instructions were presented in a booklet and required participants to self-apply them. Participants then completed measures of perceived performance and state anxiety after their social situation. Hierarchical regression showed that condition moderated the effect of social anxiety on perceived performance and state anxiety during the social situations; social anxiety had a detrimental effect on perceived performance and state anxiety for participants in the control condition, and on perceived performance for participants in the goal intention condition. However, social anxiety did not influence state anxiety for participants in the goal intention condition, or either outcome when participants formed implementation intentions. Thus, self-applied implementation intentions can prevent negative social anxiety effects on performance evaluation and state anxiety. Implementation intentions could be used to promote effective self-management of social anxiety.

*Introduction*

Social anxiety can be described as the experience of fear, nervousness or apprehension in relationships and/ or situations involving other people, where individuals worry that they will do something embarrassing, be humiliated or be judged negatively in such social situations (Butler, 1999). The terms '*social anxiety'* and *'social phobia'* are often used interchangeably (Richards, 2008). Socially anxious/ phobic individuals almost invariably experience the symptoms of anxiety in social situations (e.g. blushing, shaking, palpitations; The Diagnostic and Statistical Manual of the American Psychiatric Association [DSM-IV], 1994). The lifetime prevalence of social anxiety disorders in the UK is estimated to be 5.7%, with a much larger number of people experiencing some level of social anxiety (Gross et al., 2005). Currently it is estimated that only 33 to 42% of individuals experiencing social anxiety each year receive psychotherapy, resulting from limited psychotherapy provision as well as the individuals' social phobia preventing them from accessing treatment (Erwin, Turk, Heimberg, Fresco, & Hantula, 2004; Gross et al., 2005). Therefore, there is a need to explore the provision of successful low cost, quick to deliver, and self-applied interventions for social anxiety that can reach a large number of individuals. A number of recent studies have demonstrated the efficacy of cognitive behaviour therapy (CBT) based self-help interventions for social anxiety (e.g. Berger, Hohl, & Caspar, 2009; Titov et al., 2009). However, there has been no research examining whether other interventions for social anxiety may be suitable for self-application e.g. attentional bias interventions.

Research has shown that individuals experiencing social anxiety direct their attention differently to low socially anxious individuals (for a review see Bögels &

Mansell, 2004). For example, Clark and Wells (1995) suggest that socially anxious individuals fear negative evaluation by others and are hypervigilant to evidence of such negative evaluation, showing an attentional bias towards social threat information e.g. focussing upon someone failing to smile at them. Upon detection of social threat, the socially anxious individual then directs their attention inwards to interoceptive information related to anxiety (e.g. blushing, sweating, shaking) and assume that this negatively influences how they appear to others e.g. 'I look nervous- they'll think I'm stupid', and they therefore underestimate their performance. Such an attentional bias has been demonstrated in socially anxious individuals by Musa, Lepine, Clark, Mansell and Ehlers (2003), Mansell, Clark and Ehlers (2003), and Webb, Ononaiye, Sheeran, Reidy and Lavda (2010). It has also been demonstrated that socially anxious individuals underestimate their performance in social situations relative to independent raters, and that the level of this underestimation is significantly greater than in non-socially anxious individuals (Alden & Wallace, 1995; Rapee & Lim, 1992; Stopa & Clark, 1993).

Clark and Wells (1995) argue that this attentional bias towards threat displayed by socially anxious individuals is problematic as it maintains social anxiety by; i) preventing non-threatening social stimuli being processed; ii) reinforcing the individual's belief that they appear anxious; and iii) eliciting less friendly behaviour from others, therefore providing further threatening social stimuli, reinforcing the individual's belief that they are being negatively evaluated and that their performance is poor. Consequently, the socially anxious individual misses out on opportunities to re-appraise social situations and fails to learn that social situations can be non-threatening (also see Rapee & Lim, 1992; Rapee & Heimberg, 1995).

Research has investigated whether altering this attentional bias demonstrated by socially anxious individuals can reduce these negative effects of social anxiety. Currently, three different interventions have attempted to modify attentional biases in social anxiety; i) retraining; ii) Task Concentration Training (TCT; Bögels, Mulkens, & de Jong, 1997); and iii) implementation intentions (Gollwitzer, 1999).

Retraining modifies attention by repeatedly directing an individual's attention to neutral or positive stimuli (MacLeod, Rutherford, Campbell, Ebsworthy, & Holker, 2002). Songwei, Jieqing, Mingyi and Xinghua (2008) applied retraining to individuals with high social anxiety. They were given 7 days continuous attentional bias training, requiring them to focus on positive face pictures rather than negative face pictures. Their attentional biases changed and their scores on the Social Anxiety Interaction Scale (Mattick & Clarke, 1998) were reduced. However, individuals in the retraining group did not improve on the Fear of Negative Evaluation Scale (FNE; Watson & Friend, 1969) or Social Phobia Scale (Davidson et al, 1991) suggesting limited improvement in social anxiety.

TCT attempts to train individuals to direct attention away from themselves and towards tasks in which they are involved. Individuals learn to direct their attention outwardly in non-threatening situations through repeated practice, and then apply this new skill to socially threatening situations. Research has demonstrated the efficacy of TCT at altering attentional biases and reducing the effects of social anxiety (Bögels, Sijbers, & Voncken, 2006; Mulkens, Bögels, & de Jong, 1999). However, TCT has thus far only been applied to fear of blushing in socially anxious individuals, thus the findings may not generalise to other attentional biases seen in socially anxious individuals (e.g. towards sweating).

Both retraining and TCT are time consuming and laborious for participants and researchers. Retraining requires intense, repeated practice over several days on a modified dot probe task for changes in attentional biases to be seen. TCT usually involves six 1 hour sessions with an experimenter and requires participants to practice extensively on a daily basis between sessions, as well as complete homework diaries. Implementation intentions aim to control responses rather than directly alter attentional biases. Implementation intentions aim to translate goal intentions (an intention to obtain a particular goal e.g. to appear confident) into action. They are 'if...then' plans that specify how, where and when an individual will reach their goal in advance, taking the form 'IF situation X arises, THEN I will complete goal directed response Y!' Therefore, if an individual's goal intention is to appear confident then they may make the implementation intention 'IF I meet someone new, THEN I will say 'hi' and ask them where they are from'. Forming implementation intentions is a much faster and less labour intense process than either retraining or TCT. Research has demonstrated implementation intentions are successful at promoting goal achievement (Gollwitzer & Sheeran, 2006), at improving social performance (Gollwitzer, Bayer, & McCulloch, 2005), at reducing state anxiety during a social task and at improving self-appraisal of performance in a social task (Webb, Ononaiye, Sheeran, Reidy, & Lavda, 2010; however, the findings from this study related to reduced state anxiety are not presented in the published manuscript).

More research is required to determine the full utility of implementation intentions. Only one study has directly investigated the success of implementation intentions on reducing the effects of social anxiety upon a social task. Webb et al. (2010) asked participants to form a specific implementation intention specifying how they would direct their attention if they became worried while giving a speech

on a pre-defined topic; 'IF I feel concerned, THEN I will focus on the back wall of the room!' Socially anxious individuals who formed implementation intentions experienced lower state anxiety during their speech and rated their performances more positively than socially anxious participants who did not form implementation intentions.

The present study aimed to extend the work of Webb et al (2010) by asking participants to identify their own upcoming, anxiety provoking, real world social task. Participants were not directed by the experimenter, but were instead given written information and instructions to self-apply. Thus, the present study will potentially increase the ecological validity of the task and the application of implementation intentions. In the present study there was also a longer delay (up to one week) between forming the implementation intention and using it in the social task. Research has demonstrated the effectiveness of implementation intentions over time delays of days and months. For example, Orbell, Hodgkins and Sheeran (1997) demonstrated that 100% of women who formed implementation intentions to complete a breast self-examination in the following month completed this goal. In contrast, of women who formed a goal intention to complete a breast self-examination over the following month only 53% attained this goal. In Webb et al (2010) the delay between forming the implementation intention and performing the speech was only a few minutes. To date no studies have investigated the effectiveness of implementation intentions on the effects of social anxiety over time periods greater than a few minutes. Therefore, the present research aimed to provide information on the durability of implementation intentions in a social anxiety paradigm. Finally, the present study will also investigated how valid implementation intentions appear as a treatment, with the participants who form goal intentions and implementation intentions being asked to complete the

Treatment Credibility Form (TCF; Morrison & Shapiro, 1987). To date no research has investigated the perceived treatment credibility of implementation intentions.

*Overview of the Present Study*

Socially anxious participants were randomly allocated to one of three groups; control group, goal intention group, or implementation intention group. All participants identified a social situation/ task over the upcoming week that they were anxious about. The participants in the goal intention group and the implementation intention group were provided with information about the role of attention in social anxiety, and were asked to form the goal intention of trying to keep calm and not focus their attention on threatening stimuli. The participants in the implementation intention group then also formed an 'if...then' plan specifying how they will control their attention. The control group were given no information about the role of attention on social anxiety and no instructions about how to manage their identified social situation.

*Aims*

The aims of the study were:

1. To determine whether forming implementation intentions can prevent the negative effect of social anxiety on self-reported state anxiety up to one week later during a social task identified by the participants.

2. To determine whether forming implementation intentions can prevent the negative effect of social anxiety on self-evaluation of performance up to one week later during a social task identified by the participants.

3. To determine whether participants perceive implementation intentions as therapeutically credible.

*Hypotheses*

The present study hypothesised that:

1. The formation of implementation intentions will moderate the effect of social anxiety (as measured by the Social Avoidance and Distress Scale, SAD; Watson & Friend, 1969; see '*Measures'* Section) upon participants' perception of their performance (as measured by the adapted Perception of Speech Performance Scale; Rapee & Lim, 1992; called the *'Performance Rating Form';* PRF for the purposes of this study; see *'Measures'* section) during their chosen social situation, and will do so to a greater degree than the formation of goal intentions.

2. The formation of implementation intentions will moderate the effect of social anxiety (as measured by the SAD) upon participants' state anxiety (as measured by the Brief State Anxiety Inventory; BSTAI; Berg, Shapiro, Chambless & Ahrens, 1998; see *'Measures'* section) during their chosen social situation, and will do so to a greater degree than the formation of goal intentions.

*Method*

*Participants*

Participants were students and staff at the University of Sheffield who were on the volunteers list, consented to participate in the study and scored 8 or above on the SAD. Participants were recruited via email inviting them to complete an online version of the SAD. Those scoring 8 or above on the SAD were re-contacted via email inviting them to take part in the rest of the study. The SAD was selected as it has been used in previous studies on implementation intentions and social anxiety to create socially anxious groups (e.g. Webb et al., 2010). A cut-off score of ≥8 on the SAD for inclusion was selected because preliminary investigation demonstrated that participants needed to score ≥8 to be able to reliably identify a specific, upcoming social situation that they were anxious about.

*N* = 803 individuals responded to the first email and completed the online SAD. Of these individuals 432 were eligible to participate in the study (i.e. scored 8 or above on the SAD) and were invited to participate further. *N* = 84 of these individuals responded to the invitation and participated in the study (52 female, 32 male; mean age 22.88 years, SD = 6.21 years, range 18-47 years; 70 English first language; mean SAD score 16.01, SD = 5.72, range 8-27). The participant sample was relatively diverse with regards to ethnicity, with participants describing themselves as White British (n = 58), Pakistani (n = 2), White American (n = 2), White Asian (n = 2), White-Black Caribbean (n = 2), White Romanian (n = 2), Chinese (n = 2), Indian (n = 1), Latin (n = 1), Thai (n = 1), White Swedish (n = 1), White Italian (n = 1), White-Black African (n = 1), Greek (n = 1), White Middle Eastern (n = 1), Polish (n = 1), Black African (n = 1), White Russian (n = 1), Lithuanian (n = 1), and 2 participants would rather not state.

Following the categorisation of Wadsworth and Ford (1983), the type of social situations identified by participants were *'Work/Education'* (51.43%), *'Social Life'* (34.29 %), *'Family Life'* (5.71%), *'Leisure'* (5.71%) and *'Personal Growth and Maintenance'* (2.86%).

Six participants dropped out of the study after the first meeting with the experimenter; 2 for reasons unknown (both from control group), 1 could not identify a social situation that they were anxious about (goal intention group), 2 participants' chosen social situations did not occur (one from goal intention group, one implementation intention group), and one participant withdrew due to life stress (control group). Data from three participants was excluded; one participant from the control group had participated in a previous implementation intention study and used implementation intentions in the present study, another control group participant completed the outcome measures around a different social situation to their initial chosen situation, and one participant from the implementation intention group changed their plan just before their social situation. See Figure 1 for a chart showing the flow of participants through the study from recruitment to data analysis.

*Design*

The study used quantitative methodology with a between-groups design. The independent variable was the intervention type, with the three levels; i) control (no intervention); ii) goal intention; and iii) implementation intention. The three dependent variables were; i) participants' self-rated perception of their own performance during their chosen social situation as measured by the PRF; ii) participants' self-rated level of state anxiety during their chosen social situation as

measured by the BSTAI; and iii) participants' rating of treatment credibility (in the goal intention and implementation intention groups) as measured by the TCF.

A priori power analysis was conducted to determine the sample size required to prevent type II errors i.e. to prevent acceptance of the null hypothesis when it is false. Assuming a medium- to-large effect size associated with implementation intentions of $d$ = 0.65 (from Gollwitzer & Sheeran, 2006), a significance level of $alpha$ = 0.05, and three groups of participants, a total sample size of 96 participants was required to achieve 80% power.

*Measures*

The following measures were used in the present study:

*The Social Avoidance and Distress Scale (Watson & Friend, 1969).*

The SAD is a 28 item self-report measure. The 28 statements contained in the SAD relate to anxiety and avoidance associated with social situations e.g. 'I often feel on edge when I am with a group of people'. Participants can respond either 'true' or 'false' to each statement.

The SAD has been shown to have good reliability (*KR-20* reliability coefficient = .94; test-retest reliability over one month interval using college students $r$ = 0.68; Watson & Friend, 1969) and validity (e.g. SAD scores were related to global ratings of social skills $r$ = -0.70; Arkowitz, Lichtenstein, McGovern & Hines, 1975; SAD scores have been found to be positively correlated with other social anxiety questionnaires $r$ = 0.54; Wallander, Conger, Mariotto, Curran, & Farrell, 1980). In the present study the SAD was found to have good internal consistency (Cronbach's $\alpha$ = 0.85).
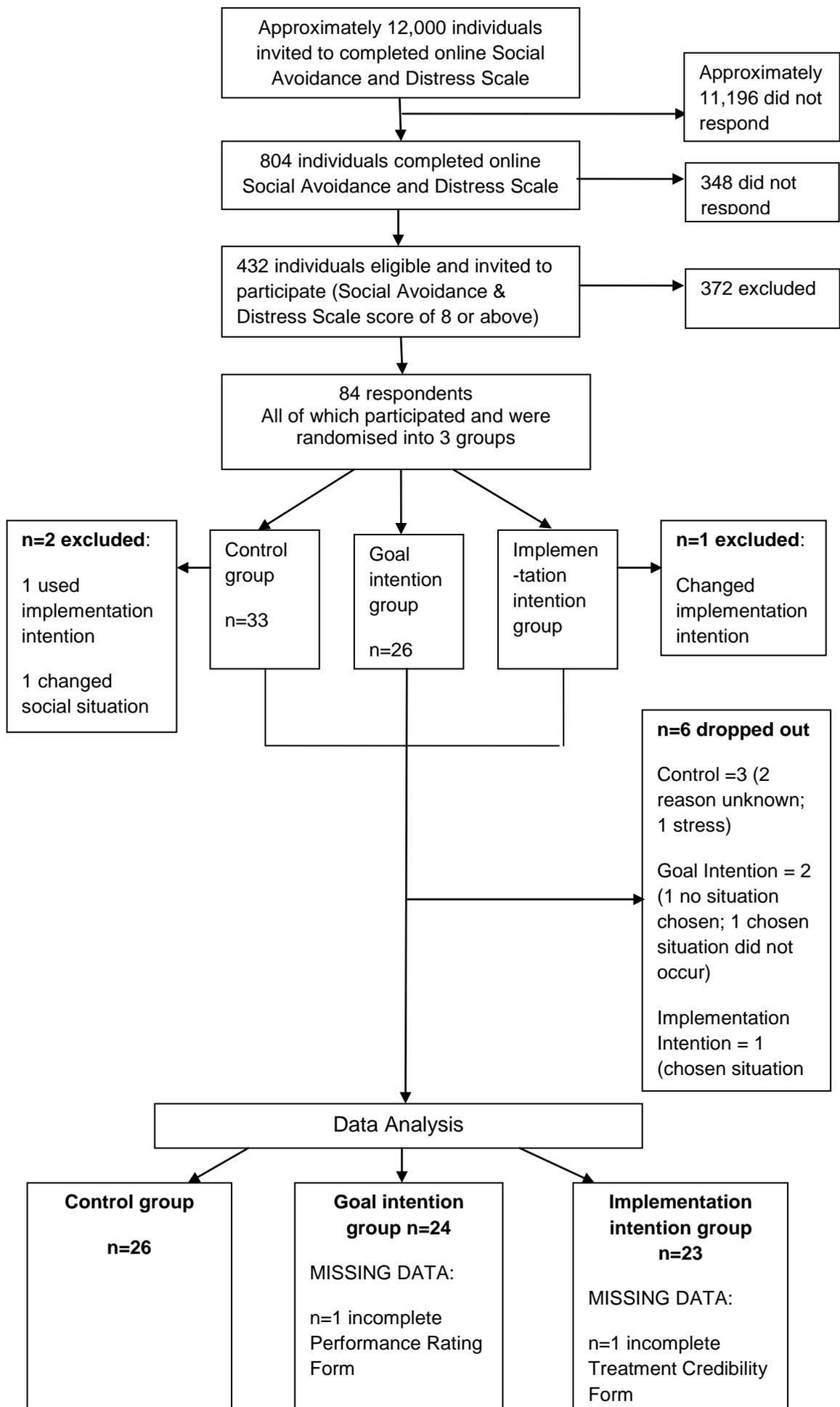
**Fig. 1.** Chart showing the flow of participants from recruitment through to data analysis.

*Perception of Speech Performance Scale (PSPS, Rapee & Lim, 1992).*

The PSPS is a 16 item self-report measure. The instructions were altered slightly, asking the participants to reflect upon how they felt they performed *during their social task,* rather than how they performed during a speech specifically. Hence, for this study the measure was termed the '*Performance Rating Form'* (PRF). A couple of items were also altered so they were applicable to any social task. The items relate to how a participant felt they performed or appeared during a social task, e.g. 'I fidgeted', 'I generally spoke well'. The PSPS was also adapted so that each item can be rated from 0 *'not at all',* up to 7 *'very much',* rather than 0-4 so that the scale was more sensitive*.* The PRF was chosen as it has been used in previous research on social anxiety and implementation intentions (e.g. Webb et al., 2010) and it has been shown to have good psychometric properties. It has been shown to have good internal consistency and to correlate highly with other measures of performance appraisal ($r$ = 0.74; Rodebaugh & Chambless, 2002). In the present study the PRF was found to have good internal consistency (Cronbach's $\alpha$ = 0.86).

*The Brief State Anxiety Inventory (BSTAI, Berg, Shapiro, Chambless & Ahrens, 1998).*

The BSTAI is a six-item self-report measure. The items regard feelings that reflect a participant's level of state anxiety, e.g. 'I felt comfortable'. The BSTAI was adapted so that each item could be rated from 1 '*not at all*', up to 7 '*very much so'*, rather than from 1-4 so that the scale was more sensitive*.* The BSTAI was chosen as it has been used in previous research on implementation intentions and social anxiety (e.g. Webb et al., 2010), it is quick to administer and it has been shown to have good psychometric properties. The BSTAI has been shown to have high internal consistency ($\alpha$ = 0.86) and to correlate highly with the full 20 item STAI-

state scale ($r$ = 0.93; Berg et al., 1998). In the present study the BSTAI was found to have good internal consistency (Cronbach's $\alpha$ = 0.91).

*The Treatment Credibility Form (TCF, Morrison & Shapiro, 1987)*

The TCF is a 4 item self-report measure that examines how credible a treatment appears to a patient, e.g. 'how useful does this treatment seem to you'. Each item is scored on a 7 point likert scale, scored from 1 '*not at all',* up to 7 '*very'.* The psychometric properties of this scale have not yet been determined. In the present study the TCF was found to have good internal consistency (Cronbach's $\alpha$ = 0.86).

*The Fear of Negative Evaluation Scale (FNE, Watson & Friend, 1969).*

The FNE is a 30-item self-report measure. The 30 statements contained in the FNE assess an individual's expectation of being negatively evaluated by others, e.g. 'I become tense and jittery if I know someone is sizing me up'. Participants can respond either 'true' or 'false' to each statement. The FNE was chosen because it has been used in previous studies investigating social anxiety and implementation intentions (e.g. Webb et al., 2010) and it has been shown to have good psychometric properties. The FNE has been shown to have good reliability (*KR-20* reliability coefficient = 0.94; test-retest reliability over one month interval using college students $r$ = 0.78; Watson & Friend, 1969) and validity (e.g. high FNE scorers felt significantly worse about receiving negative feedback and rated themselves as more likely to receive negative evaluations than low FNE scorers; Smith and Sarason, 1975). In the present study the FNE was found to have good internal consistency (Cronbach's $\alpha$ = 0.89).

*State-Trait Anxiety Inventory- Trait Form (STAIT, Spielberger, 1983).*

The STAIT is a 20 item self-report measure. The 20 statements contained in the STAIT regard general feelings that reflect an individual's trait level of anxiety, e.g. 'I feel satisfied with myself'. Participants can rate each statement from 1 'almost never', up to 4 'almost always'. The STAIT was chosen because it has been shown to have good psychometric properties; test-retest reliability over 30 days using college students ranged between r = 0.71-0.75, median reliability coefficient was r = 0.77, and median KR-20 = 0.90 (Spielberger, 1983). Validity of the STAIT has also been shown to be strong e.g. Spielberger (1983) found correlations of STAIT scores with other trait anxiety measures ranged between r = 0.73- 0.85. In the present study the STAIT was found to have good internal consistency (Cronbach's α = 0.89).

*Procedure*

An email was sent to all students on the volunteers list at the University of Sheffield inviting them to complete an online version of the SAD, and then to potentially be involved in further research. Respondents scoring 8 or above on the SAD were then emailed again, inviting them to participate in further research involving the identification of a social situation that they are nervous about and rating how they feel and perform in the social situation.

Participants who agreed to participate in further research were contacted by email to arrange a time for them to meet the experimenter at the laboratory. Participants were randomly allocated to one of three groups; control (no intervention) group, goal intention group, or implementation intention group using a online die (i.e. roll 1 or 2 and the participant is allocated to the goal intention group, roll 3 or 4 and the participant is allocated to the implementation

intention group, or roll 5 or 6 and the participant is allocated to the control group). On arrival at the laboratory each participant was presented with an information sheet about the study and asked to read it, and then were asked to complete a consent form for their participation. Participants then completed the FNE to check that the three groups (i.e. goal intention group, implementation intention group and control group) had equivalent levels of social anxiety. Participants then completed the STAIT to check the three groups were equal in their levels of trait anxiety. Participants were also asked to provide demographic information about age, sex, ethnicity and first language.

All participants were then left alone with written instructions that asked them to define a social situation that they would experience over the next week that they were nervous about, the instructions being:

*'Please think about a social situation in the next week that you are nervous or anxious about. For example, you may have to do a speech or meet someone new.*

*Please write a brief description of this social situation in the box below. Where will it be, what time, what date, who with, and what is your goal in the social situation? (e.g. to appear intelligent, to negotiate a favourable outcome etc.)'.*

The participants in the goal intention group and the implementation intention group were also provided with written information about the role of attention in social anxiety, and asked to try and keep calm and not focus their attention on threatening stimuli, the instructions being:

*'When people are nervous they tend to focus on negative things they imagine might happen or go wrong. For example, some people focus on the thought that other*

*people will think that they are stupid. Some people focus upon others who are not smiling at them and assume that the other person does not like them. This way of focusing can make anxiety worse. Therefore, when you go into your social situation that you identified above try to keep calm. Try not to focus on negative things or on what might go wrong'.*

The participants in the goal intention condition group then also received the following written instructions:

*'Please read the instructions in the box above back to yourself quietly at least three times. It is very important you concentrate as you do this. Commit to following the instructions. When you can repeat the instructions back to yourself correctly without reading them, tick this box.'*

The participants in the implementation intention group were also provided with written instructions to form an 'if...then' plan specifying how they would control their attention in their chosen social situation, the instructions being:

*'To help you to keep calm please make an 'if...then' plan to help you not to focus on negative things. This involves finding a good opportunity to focus on positive aspects of the situation, rather than focusing on what might go wrong. For example 'IF... I feel nervous during my speech and see people are not smiling, THEN... I will focus my attention on the back of the room'.*

*Please think about the social situation that you have identified next week. Think about how you might focus on positive things in that situation. Now try to make an*

*'if…then' plan that will help you to do this. Please write down your 'if…then' plan in the box below*

*Please read your plan (from the first word 'if' to the last word) back to yourself quietly at least three times. It is very important that you concentrate as you do this. Commit to following your plan.*

*When you can repeat the plan back to yourself correctly without reading it, tick this box.'*

Once participants had followed the above instructions they met with experimenter again (before leaving the laboratory) and all participants were then given two sealed envelopes clearly labelled 'Envelope 1' and 'Envelope 2' respectively. Envelope 1 contained a copy of the BSTAI only, with the following instructions on the front:

*'Please complete the enclosed questionnaire as near as possible to the start of your chosen social task. It is really important that you complete the questionnaire at the right time for the study to work'.*

This scale was used to determine whether the three groups differed in state anxiety prior to their social tasks. Envelope 2 contained a copy of the PRF and the BSTAI, with the following instructions on the front:

*'Please complete the two enclosed questionnaires as soon as possible after your chosen social task. It is really important that you complete the questionnaires at the right time for the study to work'.*

The BSTAI in the second envelope had the instructions altered slightly, asking the participants to reflect upon how they felt *during the social task.* On the same sheet as the BSTAI there was a space for participants to record the date and time their chosen social task took place and a space to record the date and time they completed the measures in envelope 2. The accompanying instructions read:

*'Please record the date and time your chosen social task took place and the date and time you completed these measures in envelope 2. It is really important that you record these times as accurately as possible for the study to work'.*

A time was then arranged for the participant to meet with the experimenter at the laboratory a week later to return their questionnaires and debrief about their social situation. Participants were asked the time and date of their chosen social situation, and sent a reminder text message or email to complete their questionnaires a day prior to their social task and within an hour after their social situation. Participants also received a reminder text message or email to attend their second meeting with the experimenter a day prior to that second meeting. Participants were told they would receive these reminders and it was the participant's choice whether they were contacted by email or text message.

At the debriefing meeting with the experimenter the participants in the goal intention group and in the implementation intention group completed the TCF to determine if the groups differed in the perceived credibility of their intervention.

The control group then received the information about the role of attention on social anxiety that the other two groups received. All participants had the option of taking an available leaflet containing references for self-help and support websites and books for social anxiety.

All data was analysed using SPSS version 16. Moderation analyses of the effect of condition (i.e. control, goal intention or implementation intention) on the relationship between PRF score and SAD score, and between BSTAI and SAD score, were conducted using hierarchical regression. An independent samples t-test was utilised to determine any differences in TCF score between the goal intention and implementation intention groups.

## Results

*Data screening*

Before summing a total score for each participant on each completed measure, reliability analyses were conducted to determine the acceptability of using total scores in further analyses. Reliability analyses showed that all measures were eligible to be summed (for all measures Cronbach's $\alpha$ > 0.85).

The dependent variable scores were plotted and subsequently screened for skew and kurtosis. Visual inspection of histograms demonstrated that the participants' scores on the PRF and BSTAI appeared to be normally distributed. This was corroborated by measures of skew (PRF *z score* = 0.75, *p* > 0.05; BSTAI *z score* = 0.08, *p* > 0.05) and kurtosis (PRF *z score* = 0.26, *p* > 0.05; BSTAI *z score* = 0.77, *p* > 0.05), which demonstrated that the distributions of these dependent variable scores did not significantly differ from a normal distribution. Scatter plots of residuals against predicted values of PRF and BSTAI scores demonstrated that assumptions of linearity, homoscedasticity and, again, normality were satisfied on examination.

Histograms of TCF score were completed separately for the goal intention group and the implementation intention group, and subsequently screened for skew and kurtosis. Visual inspection of the histograms demonstrated that the participants' scores on the TCF appeared to be normally distributed. This was corroborated for the implementation intention group by measures of skew (*z score* = 0.79) and kurtosis (*z score* = 0.49), demonstrating that the distribution of TCF scores for this group did not differ significantly from a normal distribution (*p* > 0.05). For the goal intention group scores on the TCF were significantly skewed (*z score* 2.31, p < 0.05) and showed significant kurtosis (*z score* 3.53, *p* < 0.005). However, as skew for the goal intention group was only just significant, and as parametric statistics are robust to moderate violations of kurtosis, the data was not transformed. All missing data was excluded listwise.

*Excluded and Included Participants*

A between groups (group: control, goal intention and implementation intention) MANOVA demonstrated no significant differences between participants whose data did not go on to be analysed (drop-outs and excluded participants), and participants whose data was included in the final analyses on age, or scores on the SAD, FNE, or STAIT (*F* = 1.19, *df* = 80, *p* = 0.32).

*Randomisation check*

A between groups (groups: control, goal intention and implementation intention) MANOVA demonstrated no significant differences between the three groups in age or in scores on the SAD, FNE, STAIT, BSTAI completed prior to the social tasks, or time delay between ending the social task and completing the

measures in envelope 2 ($F = 0.51$, $df = 71$, $p = 0.91$). See Table 1 for the mean scores and standard deviations for each group on these measures.

**Table 1**

Means (Standard deviation) for the three groups on age(years) and scores on the SAD, FNE, STAIT, BSTAI completed prior to the social task, and time delay (in minutes) between finishing the social task and completing the dependent variable measures in envelope 2.

| | Control (SD) | Goal Intention (SD) | Implementation Intention (SD) | Significance |
|---|---|---|---|---|
| Age (years) | 22.93 (7.39) | 22.43 (6.59) | 22.00 (3.98) | n.s. |
| SAD | 15.45 (6.12) | 17.96 (5.55) | 14.92 (4.86) | n.s. |
| FNE | 22.25 (7.30) | 21.69 (6.71) | 23.25 (4.50) | n.s. |
| STAIT | 50.74 (9.22) | 52.692 (9.019) | 50.17 (8.86) | n.s |
| BSTAI completed prior to social task | 27.50 (7.95) | 27.52 (8.01) | 26.83 (7.83) | n.s |
| Delay between completing social task and completing the measures in envelope 2 (minutes) | 240.14 (266.95) | 306.29 (347.11) | 327.00 (402.72) | n.s |

*Note.* SD = standard deviation; n.s. = non-significant; SAD = Social Avoidance and Distress Scale; FNE = Fear of Negative Evaluation Scale; STAIT = State Trait Anxiety Inventory- Trait Measure; BSTAI = Brief State Anxiety Inventory.

*Perceived performance ratings*

Moderation analyses of the effect of condition (i.e. control, goal intention or implementation intention) on the relationship between perceived performance (as measured by the PRF) and social anxiety (as measured by the SAD) were conducted using hierarchical regression. As the independent variable was

categorical in nature dummy coding was utilised i.e. two new variables were created; whether participants formed a goal intention (scoring 1 if they had and 0 if they had not), and whether participants formed an implementation intention (scoring 1 if they had and 0 if they had not). Thus, control participants scored 0 on both of these variables. The three variables entered into block 1 of the regression were SAD score, whether participants had formed a goal intention, and whether participants had formed an implementation intention. In block 2 the two interaction terms (i.e. SAD score x whether goal intention formed, and SAD x whether implementation intention formed) were entered.

At step 1 the model was just short of significance ($F$ = 2.70, $df$ = 70, $R^2$ = 0.104, $p$ = 0.52) with SAD score being the only individual predictor to achieve significance (SAD score $\beta$ = -0.32, p < 0.01; use of goal intention $\beta$ = 0.03, $p$ = 0.80; use of implementation intention $\beta$ = -0.07, p = 0.59). At step 2 it was shown that condition significantly moderated the relationship between perceived performance and social anxiety ($F$ = 3.28, $df$ = 68, $R^2$ $change$ = 0.18, $p$ < 0.05; individual predictors: SAD score $\beta$ = - 0.52, $p$ <0.005; use of goal intention $\beta$ = -0.03, $p$ = 0.95; use of implementation intention $\beta$ = -0.94, $p$ < 0.05; SAD x goal intention $\beta$ = 0.10, $p$ = 0.80; SAD x implementation intention $\beta$ = 0.93, $p$ < 0.05). Subsequently, regressions of perceived performance against social anxiety were completed for the three conditions separately. Perceived performance was significantly predicted inversely by social anxiety in both the control condition ($F$ = 9.27, $df$ = 26, $R^2$ = 0.26, $\beta$ = -0.51, $p$ < 0.01) and in the goal intention condition ($F$ = 4.61, $df$ = 20, $R^2$ = 0.19, $\beta$ = -0.43, $p$ < 0.05). Hierarchical regression of control and goal intention condition data (excluding implementation intention condition data) showed that there were no significant differences in the relationship between perceived

performance and social anxiety between the control and goal intention conditions ($F = 0.06$, $df = 46$, $R^2$ *change* $< 0.01$, $p = 0.81$).

However, perceived performance was not predicted by social anxiety in the implementation intention condition ($F = 0.65$, $df = 22$, $R^2 = 0.03$, $\beta = 0.17$, $p = 0.43$). Hierarchical regressions showed that the relationship between perceived performance and social anxiety score in the implementation intention condition differed significantly from that in the goal intention condition when control data was excluded ($F = 4.29$, $df = 42$, $R^2$ *change* $= 0.12$, $p < 0.05$], and from the control and goal intention conditions ($F = 6.46$, $df = 70$, $R^2$ *change* $= 0.18$, $p < 0.05$]. See Figure 2 for a scatter plot with regression lines showing the relationship between perceived performance (as measured by the PRF) and social anxiety (as measured by the SAD) for participants in the three conditions.

*State anxiety during the social situation*

Moderation analyses of the effect of condition (i.e. control, goal intention or implementation intention) on the relationship between state anxiety experienced during the social task (as measured by the BSTAI) and social anxiety (as measured by the SAD) were conducted using hierarchical regression. As the independent variable was categorical in nature dummy coding was utilised. The three variables entered into block 1 of the regression were SAD score, whether participants had formed a goal intention, and whether participants had formed an implementation intention. In block 2 the two interaction terms (i.e. SAD score x whether goal intention formed, and SAD x whether implementation intention formed) were entered.
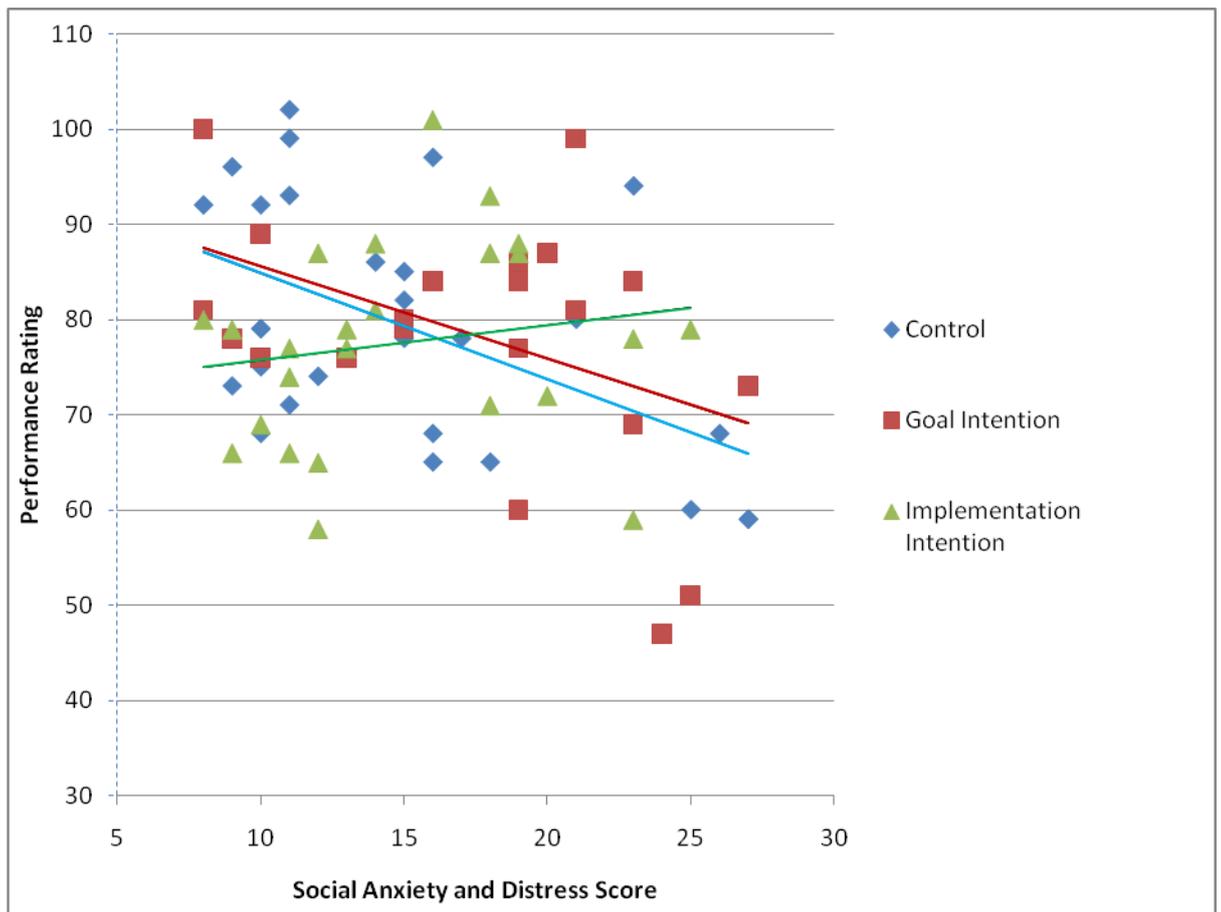
**Fig. 2.** Scatter plot with regression lines showing the relationship between PRF score (perceived performance) and SAD score (social anxiety) for participants in the three conditions.

At step 1 the model was found to be non-significant ($F$ = 1.66, $df$ = 71, $p$ = 0.18) with no individual predictors achieving significance (SAD score $\beta$ = 0.21, $p$ = 0.08; use of goal intention $\beta$ = 0.09, $p$ = 0.48; use of implementation intention $\beta$ = -.03, $p$ = 0.84). At step 2 it was shown that condition was found to significantly moderate the relationship between state anxiety and social anxiety ($F$ = 3.39, $df$ = 69, $R^2$ *change* = 0.15, $p$ < 0.05; individual predictors: SAD score $\beta$ = 0.55, $p$ <0.005; use of goal intention $\beta$ = 0.92, $p$ < 0.05; use of implementation intention $\beta$ = 0.70, $p$ = 0.07; SAD x goal intention $\beta$ = -.096, $p$ < 0.05; SAD x implementation intention $\beta$ = -0.78, $p$ < 0.05). Subsequently, regressions of state anxiety against social anxiety

were completed for the three conditions separately. In the control condition state anxiety was significantly predicted directly by social anxiety ($F = 12.67$, $df = 26$, $R^2 = 0.33$, $\beta = 0.57$, $p < 0.001$). However, state anxiety was not predicted by social anxiety in the goal intention ($F = 0.08$, $df = 21$, $R^2 < 0.01$, $\beta = -0.06$, $p = 0.78$] and implementation intention ($F = 0.01$, $df = 22$, $R^2 < 0.001$, $\beta = -0.02$, $p = 0.92$) conditions. Hierarchical regression of control and goal intention condition data (excluding implementation intention condition data) showed that there were significant differences in the relationship between state anxiety and social anxiety between the control and goal intention conditions ($F = 5.39$, $df = 47$, $R^2$ $change = 0.19$, $p < 0.05$). Hierarchical regression of control and implementation intention condition data (excluding goal intention condition data) showed that there were significant differences in the relationship between state anxiety and social anxiety between the control and implementation intention conditions ($F = 4.48$, $df = 48$, $R^2$ $change = 0.19$, $p < 0.05$). See Figure 3 for scatter plots with regression lines showing the relationship between state anxiety (as measured by the BSTAI) and social anxiety (as measured by the SAD) respectively, for participants in the three conditions.

Thus, social anxiety had a detrimental effect on perceived performance (as measured by the PRF) and anxiety experienced during the social task (as measured by the BSTAI) for participants in the control group, and on perceived performance for participants in the goal intention condition. Social anxiety did not, however, influence experienced anxiety for participants in the goal intention condition, or influence perceived performance or experienced anxiety when participants formed implementation intentions.
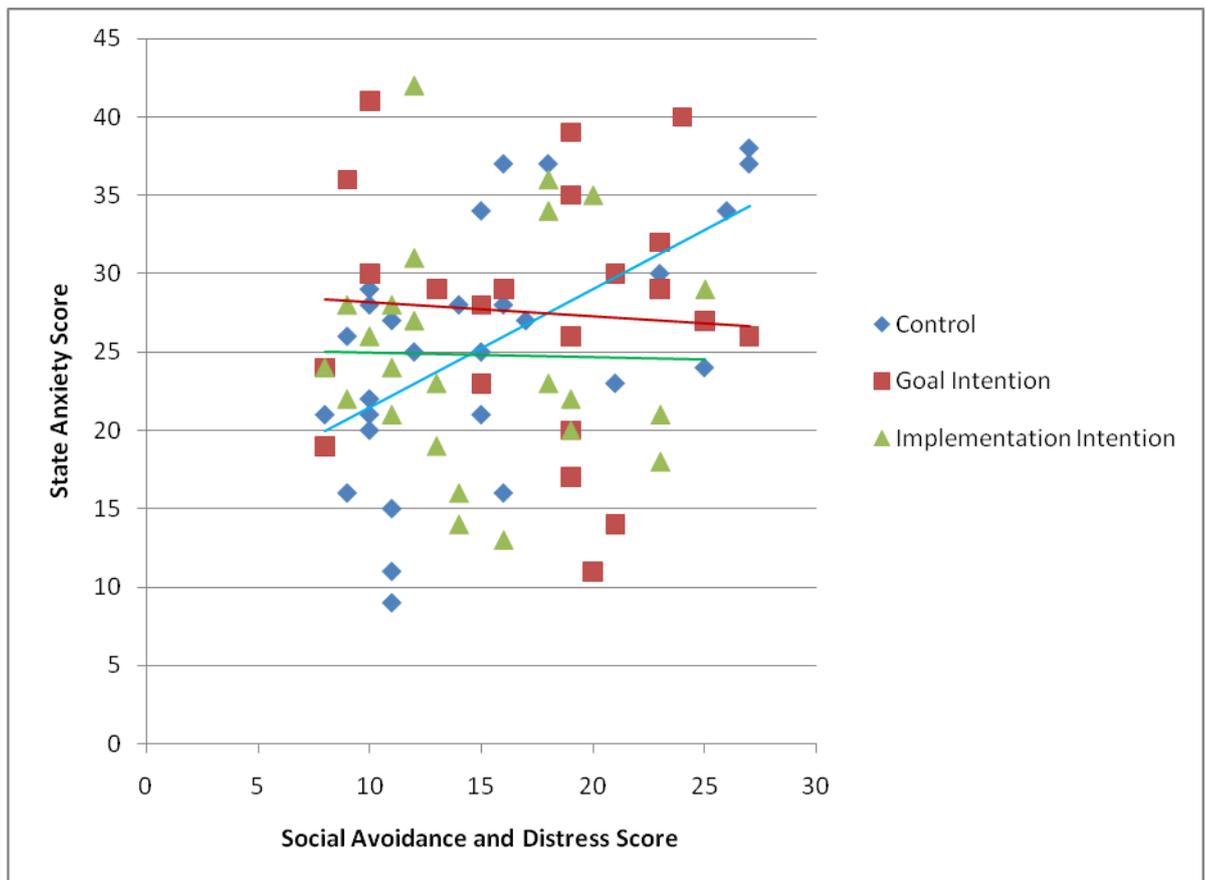
**Fig. 3.** Scatter plot with regression lines showing the relationship between BSTAI score (state anxiety) and SAD score (social anxiety) for participants in the three conditions.

*Treatment credibility*

An independent samples t-test demonstrated that there were no significant differences between the goal intention group and the implementation intention group in their ratings of treatment credibility as measured by the TCF ($t = 0.39$, *df* = 44, *p* = 0.70). Table 2 shows the mean (standard deviation) total rating and four individual item [i) how logical did this treatment seem to you?; ii) how useful did this treatment seem to you?; iii) how confident are you that this treatment was successful?; iv) how confident would you be in recommending this treatment to a friend with similar difficulties?] ratings on the TCF for the goal intention and

implementation intention groups. Both groups scored their interventions as being moderately credible with respect to each item on the TCF (range of means 4.35-5.57 out of a highest possible rating of 7 for each item).

**Table 2**

Mean (standard deviation) total rating and individual item ratings on the TCF for the goal intention and implementation intention groups.

|  | Goal Intention (SD) | Implementation Intention (SD) | Significance |
|---|---|---|---|
| Total Treatment Credibility | 18.96 (4.85) | 19.44 (3.33) | n.s. |
| *Individual Items* |  |  |  |
| Logical | 5.30 (1.40) | 5.57 (1.08) | n.s. |
| Useful | 4.57 (1.41) | 4.35 (1.15) | n.s. |
| Successful | 4.48 (1.38) | 4.48 (1.12) | n.s. |
| Recommend | 4.61 (1.31) | 5.04 (0.98) | n.s. |

*Note.* SD= standard deviation; n.s. = non-significant.

***Discussion***

The present study demonstrated that social anxiety has a detrimental effect on perceived performance and state anxiety experienced during a social task for participants who receive no intervention i.e. the higher an individual's level of social anxiety the worse they perceive their performance, and the higher their experience of state anxiety, in a social situation. This supports the findings of previous research (e.g. Alden & Wallace, 1995; Rapee & Lim, 1992; Stopa & Clark, 1993).

In the present study the remaining participants self-applied either a goal intention (instructed to keep calm and not focus on negative things in their social situation) or an implementation intention intervention (same instructions as for the goal intention group but additionally made an 'if...then' plan to help them focus their attention on positive stimuli in their social situation). For participants in the goal intention condition, social anxiety still had a detrimental effect upon perceived performance that was not significantly different from that in the control group. This finding supports that of Webb et al. (2010). It is not surprising that merely having the intention to not focus on negative things is insufficient to actually achieve this goal given the efficient, immediate and unconscious nature of attentional biases in social anxiety (Mansell, Clark, & Ehlers, 2003; Mogg & Bradley, 2002). However, forming goal intentions prevented the effects of social anxiety upon state anxiety experienced in the chosen social situations i.e. levels of state anxiety experienced did not increase with increasing levels of social anxiety for participants who formed goal intentions. This is different to the findings of Webb et al. (2010), who demonstrated that goal intentions were insufficient to prevent the detrimental effects of social anxiety upon experienced state anxiety. Thus, in the present study it seems that motivation alone was sufficient to modify attentional biases and prevent social anxiety effects with respect to experienced state anxiety, but not sufficient to prevent these negative effects on the appraisal of one's own performance. This may be due to the enduring perfectionistic traits that many socially anxious individuals display (Juster et al., 1996). Thus, the experience of state anxiety and the attentional biases towards state anxiety symptoms (e.g. sweating) may be easier to modify than the self-critical traits of such individuals. Alternatively, it may be that participants in the present study identified social situations that were less anxiety-provoking than performing a speech (as in Webb

et al., 2010); indeed public speaking (in particular giving a speech) has been found to be the most common phobia within socially anxious samples (Pertaub, Slater, & Barker, 2002). It is unlikely that the participants in the present study faced their most feared social situations as they would be likely to avoid them. Thus, it may be that goal intentions are sufficient to modify state anxiety in less feared situations, but implementation intentions are required to do so in more highly feared social situations. A further alternative explanation is related to the type of goal used in the studies. In the study by Webb et al. (2010) participants were asked to achieve controlled goals (i.e. goals one is obligated to achieve by external pressure), whereas in the present study participants were asked to achieve autonomous goals (i.e. goals reflecting personal interests/ values) as they selected their own social situations and implementation intentions. Research suggests that autonomous goals are positively related to goal progress, whereas controlled goals are not (Koestner, Otis, Powers, Pelletier, & Gagnon, 2008). Thus, it may be that goal intentions are sufficient to modify state anxiety when attempting to achieve autonomous goals, but not when attempting to achieve controlled goals.

As hypothesised, forming implementation intentions prevented the effects of social anxiety upon both perceived performance and state anxiety experienced in the chosen social situations. These findings support those of Webb et al. (2010), who showed that forming implementation intentions prevented social anxiety effects upon perceived performance and state anxiety when participants were instructed to give a laboratory-based speech. The present study increases the ecological validity of these findings as participants; i) identified their own, naturally occurring, real world social situations; ii) created their own implementation intentions (rather than being given a specific implementation intention to use); and iii) self-applied written information provided on how to

form their implementation intentions (rather than be directed by an experimenter). The present study also provides information on the durability of implementation intentions, as there was a delay of 1-7 days between forming the implementation intentions and using them in the chosen social situations. Thus, the formation of implementation intentions was effective at preventing social anxiety effects over such a time period. Previous studies have only examined the effectiveness of implementation intentions on preventing social anxiety effects over time delays of a few minutes (Webb et al, 2010). Finally, the present study provided information for the first time on how credible implementation intentions as an intervention for social anxiety were perceived to be by participants. Participants scored implementation intentions as being moderately credible with respect to each item on the TCF, and these scores did not differ from those of the goal intention group. Firstly, this shows that the differences found in the effectiveness of goal intentions and implementation intentions was not due to differences in perceived credibility. Secondly, given these modest credibility ratings the question is raised as to whether socially anxious individuals would use implementation intentions of their own volition (i.e. if not directed by an experimenter to do so).

*Clinical implications*

Implementation intentions have the potential to be an effective intervention for social anxiety. They are low cost, quick and easy to form, and potentially adaptable to self-help programmes via books or the internet (for examples of recent research on self-help interventions for social phobia see Berger, Hohl & Caspar, 2009; Titov et al., 2009); indeed implementation intentions were effective in the present study where participants identified their own social situations, and

formed their own implementation intentions in relation to these social situations, without any guidance other than the written instructions. As such, implementation intentions may be able to reach the large number of people experiencing social anxiety that cannot access routine services due to limited psychotherapy provision or the inhibitory nature of social anxiety (Erwin et al, 2004; Gross et al, 2005). Implementation intentions may also be useful in augmenting the effectiveness of other self-help interventions. For example, Varley, Webb, and Sheeran (in press) demonstrated that self-help materials for general anxiety produced better outcomes when accompanied by the formation of implementation intentions that provided direction as to when the self-help techniques were to be used.

However, implementation intentions were only rated as moderately credible by participants. It remains to be seen whether individuals who are socially anxious would use implementation intentions of their own volition, or whether there are variables that may increase the perceived credibility of implementation intentions or the likelihood of individuals using them. These could be areas for future research to address.

*Limitations*

The effect sizes in the present study are small (see Cohen, 1992), with $R^2$ *change* for moderation analyses of perceived performance = 0.18, and of state anxiety = 0.15. This could be due to the study being underpowered; other studies have found medium-large effect sizes associated with implementation intentions (e.g. Gollwitzer & Sheeran, 2006). This raises a couple of issues. Firstly, the goal intention intervention was as successful as the implementation intention intervention at preventing social anxiety effects on state anxiety. For perceived

performance only implementation intentions prevented the effects of social anxiety. Thus, it may be that only a goal intention is required to moderate the effect of social anxiety on state anxiety, but that an implementation intention is required to do so on perceived performance. However, if the study is underpowered it may be that goal intentions are as successful as implementation intentions at preventing social anxiety effects on perceived performance also, and that a type 2 error has occurred. However, this seems unlikely given the striking difference in the regression lines in Figure 2. Thus the effectiveness of implementation intentions is potentially threatened. Alternatively, the increased ecological validity of the present study, and accompanying heterogeneity of identified social situations and implementation intentions formed, may have limited the effect sizes found. Replication and extension of the present study will be required to tease out such issues.

Secondly, although statistically significant effects of implementation intentions upon the effects of social anxiety have been found, the small effect sizes raise the question as to whether these effects are clinically significant, particularly given the modest ratings of treatment credibility. It would be useful for within group effects of implementation intentions on social anxiety to be explored i.e. compare how participants rate their performance and state anxiety in controlled social situations before and after forming implementation intentions. This could allow for an examination of the clinical significance of any change seen (e.g. calculating the Reliable Change Index; see Jacobson and Truax, 1991).

Where differences were found between the goal intention and implementation intention conditions, this may result from the differences in the amount of text instruction and information that the groups received (with the

implementation intention participants receiving more), rather than the actual differences between the two interventions. It could be that the additional instructions in the implementation intention condition just further reinforced the goal intention and that this produced the added effect (as opposed to it being the differential deployment of attention as a result of using an implementation intention that produced the superior results). However, this is unlikely as it has been shown that implementation intentions are still superior to goal intentions at preventing social anxiety effects when the amount of information and text provided was controlled for (Webb et al., 2010).

A further limitation of the study is the use of a non-clinical population. Thus, the results will not necessarily generalise to individuals who meet DSM-IV criteria for social phobia or those who have higher levels of social anxiety. Also, the participants in the present study were young (mean age 22.88 years, SD = 6.21 years, range 18-47 years) and being educated to at least degree level. Thus, the findings may not generalise to the wider population on these demographics. Again, further research is needed to explore the utility of implementation intentions with individuals across the life-span, with a range of educational levels, and that have clinical levels of social anxiety or those that meet DSM-IV diagnostic criteria for social phobia.

*Directions for future research*

As discussed in the above sections, useful directions for future research include; i) determining whether goal intentions are sufficient to modify state anxiety in less feared social situations, but implementation intentions are required to do so in more highly feared social situations. Socially anxious participants could

create individual hierarchies of their least-most feared social situations, and then be randomly assigned to completing either a high or low fear social task, with the formation of either a goal intention or an implementation intention. This would allow the utility of the goal intentions to be compared to that of implementation intentions in both high and low anxiety social situations; ii) determining whether goal intentions are sufficient to modify state anxiety when attempting to achieve autonomous goals in an anxiety provoking social situation, but not when attempting to achieve controlled goals. Socially anxious participants could be randomly assigned to achieving either a controlled or an autonomous goal in an anxiety provoking social situation, with the formation of either a goal intention or an implementation intention. This would allow the utility of the goal intentions to be compared to that of implementation intentions when attempting to achieve controlled and autonomous goals; iii) replication of the treatment credibility findings and determining whether socially anxious individuals will use implementation intentions of their own volition, and if not whether there are variables that may increase the likelihood of individuals using them. Qualitative methods could be used with socially anxious individuals to explore these issues, and to determine what may increase the perceived credibility of implementation intentions to them; iv) examining whether the formation of implementation intentions can enhance the outcomes of self-help interventions aimed at social anxiety, through randomly allocating socially anxious participants to self-help alone, self-help with implementation intentions, and  control conditions; v) examining the clinical significance of change seen following the use of implementation intentions. This could be done by comparing how participants rate their performance and state anxiety in controlled social situations before and after forming implementation intentions; and vi) exploring whether the utility of

forming implementation intentions can be generalised to clinical populations,

through replication and extension with socially anxious individuals recruited

through clinics or who meet the DSM-IV diagnostic criteria for social phobia.

*Conclusions*

Implementation intentions are effective at preventing the negative effects of

social anxiety upon perceived performance and experienced state anxiety when

self-applied by an individual to their own personally identified, real world social

situation. Implementation intentions are therefore a promising self-help

intervention for social anxiety.

**References**

Alden, L. E., & Wallace, S. T. (1995). Social phobia and social appraisal in successful

and unsuccessful social interactions. *Behaviour Research and Therapy, 33,*
497-506.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of*

*mental disorders* (4th ed.). Washington, DC.: Author.

Arkowitz, H., Lichtenstein, E., McGovern, K., & Hines, P. (1975). The behavioral

assessment of social competence in males. *Behavior Therapy, 6*, 3–13.

Berg, C. Z., Shapiro, N., Chambless, D. L., & Ahrens, A. H. (1998). Are emotions

frightening? II: An analogue study of fear of emotion, interpersonal conflict,
and panic onset. *Behaviour Research and Therapy, 36,* 3-15.

Berger, T., Holh, E., & Caspar, F. (2009). Internet-based treatment for social phobia:

A randomized control trial. *Journal of Clinical Psychology, 65,* 1021-1035.

Bögels, S. M., & Mansell, W. (2004). Attention processes in the maintenance and treatment of social phobia: hypervigilance, avoidance and self-focussed attention. *Clinical Psychology Review, 24,* 827-856.

Bögels, S. M.,  Mulkens, S., & de Jong, P. J. (1997). Task concentration training and fear of blushing. *Journal of Clinical Psychology and Psychotherapy, 4,* 251-258.

Bögels, S. M., Sijbers, G. F. V. M., & Voncken, M. (2006). Mindfulness and task concentration training for social phobia: A pilot study. *Journal of Cognitive Psychotherapy, 20,* 33-44.

Butler, G. (1999). *Overcoming social anxiety and shyness: A self-help guide using cognitive behavioural techniques.* Robinson Publishing.

Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In R. G. Heimberg, M. Liebowitz, D. Hope, & F. Schneider (Eds.), *Social phobia: Diagnosis, assessment and treatment* (pp. 69-93). New York: Guilford.

Davidson, J. R.T., Potts, N. L. S., Richichi, E. A., Ford, S. M., Ranga Rama Krishnan, K., Smith, R. D., & Wilson, W. (1991) The Brief Social Phobia Scale. *Journal of Clinical Psychiatry*, *52***,** 48–51.

Erwin, C. T., Turk, C. L., Heimberg, R. G., Fresco, D. M, & Hantula, D. A. (2004). The internet: home to a sever population of individuals with social anxiety disorder. *Anxiety Disorders, 18,* 629-646.

Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist, 54,* 493-503.

Gollwitzer, P. M., Bayer, U., & McCulloch, K. C. (2005). The control of the unwanted. In J. A. Bargh, J. S. Uleman, & R. R. Hassin (Eds.), *The new unconscious* (pp. 485-515). Oxford: Oxford University Press.

Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal

achievement: A meta-analysis of effects and processes. *Advances in Experimental Social Psychology, 38,* 69-119.

Gross, R., Olfson, M., Gameroff, M. J., Shea, S., Feder, A., Lantigua, R., Fuentes, M., & Weissman, M. M. (2005). Social anxiety disorder in primary care. *General Hospital Psychiatry, 27,* 161-168.

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59,* 12-19.

Juster, H. R., Heimberg, R. G., Frost, R. O., Holt, C. S., Mattia, J. I., & Faccenda, K. (1996). Social phobia and perfectionism. *Personality and Individual Differences, 21,* 403-410.

Koestner, R., Otis, N.,  Powers, T. A., Pelletier, L., & Gagnon, H. (2008). Autonomous motivation, controlled motivation, and goal progress. *Journal of Personality, 76,* 1201-1229.

MacLeod, C., Rutherford, E., Campbell, L., Ebsworthy, G., & Holker, L. (2002). Selective attention and emotional vulnerability: Assessing the causal basis of their association through the experimental manipulation of attentional bias. *Journal of Abnormal Psychology, 111,* 107-123.

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

Mattick, R. P., & Clarke, J. C. (1998). Development and validation of measures of social phobia scrutiny fear and social interaction anxiety. *Behaviour Research and Therapy, 36*, 455-470.

Mogg, K., & Bradley, B. P. (2002). Selective orienting of attention to masked threat faces in social anxiety. *Behaviour Research and Therapy, 40,* 1403-1414.

Morrison, L. A., & Shapiro, D. A. (1987). Expectancy and outcome in prescriptive

versus exploratory psychotherapy. *British Journal of Clinical Psychology, 26,*
59-60.

Mulkens, S., Bögels, S. M., & de Jong, P. J. (1999). Attentional focus and fear of

blushing: A case study. *Behavioural and Cognitive Psychotherapy, 27,* 153-
164.

Musa, C., Lepine, J. P., Clark, D. M., Mansell, W., & Ehlers, A. (2003). Selective

attention in social phobia and moderating effect of a concurrent depressive
disorder. *Behaviour Research and Therapy, 41,* 1043-1054.

Orbell, S., Hodgkins, S., & Sheeran, P. (1997). Implementation intentions and the

theory of planned behavior. *Personality and Social Psychology Bulletin, 23*,
953-962.

Pertaub, D., Slater, M., & Barker, C. (2002). An experiment on public speaking

anxiety in response to three different types of virtual audience. *Presence, 11,*
68-78.

Rapee, R. M., & Heimberg, R. G. (1995). A model of social phobia. Unpublished

manuscript.

Rapee, R. M., & Lim, L. (1992). Discrepancy between self- and observer ratings of

performance in social phobics. *Journal of Abnormal Psychology, 101,* 728-
731.

Richards, T. A. (2008). *Why we prefer the term 'social anxiety' to 'social phobia'.*

Retrieved November 4, 2008 from the Social Anxiety Institute website:

www.socialanxietyinstitute.org/prefer.html

Rodebaugh, T. L., & Chambless, D.L. (2002). The effects of video feedback on self

perception of performance: A replication and extension. *Cognitive Therapy
and Research, 26,* 629-644.

Smith, R. E., & Sarason, I. G. (1975). Social anxiety and the evaluation of negative

interpersonal feedback. *Journal of Consulting and Clinical Psychology, 43,*

429.

Songwei, L., Jieqing, T., Mingyi, Q., & Xinghua, L. (2008). Continual training of

attentional bias in social anxiety. *Behaviour Research and Therapy, 46,* 905-

912.

Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory (form Y) Self*

*evaluation questionnaire.* In collaboration with Gorsuch, R. L., Lushene, R.,

Vagg, P. R., & Jacobs, G. A. Mind Garden, Incorporated, CA: Consulting

Psychologists Press.

Stopa, L., & Clark, D. M. (1993). Cognitive processes in social phobia. *Behaviour*

*Research and Therapy, 31,* 255-267.

Titov, N., Andrews, G., Schwencke, G., Solley, K., Johnston, L., & Robinson, E. (2009).

An RCT comparing effect of two types of support on severity of symptoms

for people completing internet-based cognitive behaviour therapy for social

phobia. *Australian and New Zealand Journal of Psychiatry, 43,* 920-926.

Varley, R., Webb, T. L., & Sheeran, P. (In press). Making self-help more helpful: A

randomized controlled trial of the impact of augmenting self-help materials

with implementation intentions in promoting the effective self     management

of anxiety symptoms. *Journal of Consulting and Clinical     Psychology.*

Wadsworth, M., & Ford, D. H. (1983). Assessment of personal goal hierarchies.

*Journal of Counselling Psychology, 30,* 514-526.

Wallander, J. L., Conger, A. J., Mariotto, M. J., Curran, J. P., & Farrell, A. D. (1980).

Comparability of selection instruments in studies of heterosexual-social

problem behaviors. *Behavior Therapy, 11*, 548–560.

Watson, D., & Friend, R. (1969). Measurement of social-evaluative anxiety. *Journal*

*of Consulting and Clinical Psychology, 33,* 448-457.

Webb, T. L., Ononaiye, M. S. P., Sheeran, P., Reidy, J., & Lavda, A. (2010). Using implementation intentions to overcome the effects of social anxiety on attention and appraisals of performance. *Personality and Social Psychology Bulletin, 36,* 612-627.

# Appendices

**Appendix i)**

**Approval of specified journals from research tutor**

**Appendix ii)**


**Current notes for contributors for *'Clinical Psychology Review'***

## Guide for Authors
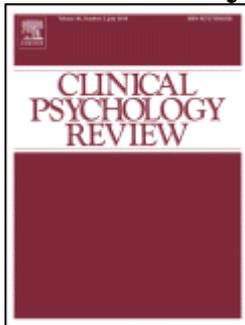
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Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere including electronically in the same form, in English or in any other language, without the written consent of the copyright-holder.

Please write your text in good English (American or British usage is accepted, but not a mixture of these).

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To avoid unnecessary errors you are strongly advised to use the "spell-check" and "grammar-check" functions of your wordprocessor.

**Article structure**

Manuscripts should be prepared according to the guidelines set forth in the Publication Manual of the American Psychological Association (6th ed., 2009).

Manuscripts should ordinarily not exceed 50 pages. Exceptions may be made with prior approval of the Editor in Chief for manuscripts including extensive tabular or graphic material, or appendices.

*Appendices*
If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on.

**Essential title page information**

*Title.* Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible. **Note: The title page should be the first page of the manuscript document indicating the author's names and affiliations and the corresponding author's complete contact information.**

*Author names and affiliations.* Where the family name may be ambiguous (e.g., a double name), please indicate this clearly. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name, and, if available, the e-mail address of each author within the cover letter.

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*Present/permanent address.* If an author has moved since the work described in the article was done, or was visiting at the time, a "Present address"' (or "Permanent address") may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

### *Abstract*

A concise and factual abstract is required (not exceeding 200 words). This should be typed on a separate page following the title page. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separate from the article, so it must be able to stand alone. References should therefore be avoided, but if essential, they must be cited in full, without reference to the reference list.

### Graphical abstract

A Graphical abstract is optional and should summarize the contents of the paper in a concise, pictorial form designed to capture the attention of a wide readership online. Authors must provide images that clearly represent the work described in the paper. Graphical abstracts should be submitted as a separate file in the online submission system. Maximum image size: $400 \times 600$ pixels (h $\times$ w, recommended size $200 \times 500$ pixels). Preferred file types: TIFF, EPS, PDF or MS Office files. See ⊡→[http://www.elsevier.com/graphicalabstracts](http://www.elsevier.com/graphicalabstracts) for examples.

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Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, "and", "of"). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

**Abbreviations**

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

**Acknowledgements**

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

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• Number the illustrations according to their sequence in the text.
• Use a logical naming convention for your artwork files.
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**Please do not:**

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• Supply files that are optimised for screen use (like GIF, BMP, PICT, WPG); the resolution is too low;
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### Tables

Number tables consecutively in accordance with their appearance in the text. Place footnotes to tables below the table body and indicate them with superscript lowercase letters. Avoid vertical rules. Be sparing in the use of tables and ensure that the data presented in tables do not duplicate results described elsewhere in the article.

### *References*

Citations in the text should follow the referencing style used by the American Psychological Association. You are referred to the Publication Manual of the American Psychological Association, Sixth Edition, ISBN 1-4338-0559-6, copies of which may be ordered from http://books.apa.org/books.cfm?id=4200067 or APA Order Dept., P.O.B. 2710, Hyattsville, MD 20784, USA or APA, 3 Henrietta Street, London, WC3E 8LU, UK. Details concerning this referencing style can also be found at http://humanities.byu.edu/linguistics/Henrichsen/APA/APA01.html

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As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

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Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

*Reference management software*
This journal has standard templates available in key reference management packages EndNote (⇨ http://www.endnote.com) and Reference Manager (⇨ http://www.refman.com). Using plug-ins to wordprocessing packages, authors only need to select the appropriate journal template when preparing their article and the list of references and citations to these will be formatted according to the journal style which is described below.

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References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters "a", "b", "c", etc., placed after the year of publication. **References should be formatted with a hanging indent (i.e., the first line of each reference is flush left while the subsequent lines are indented).**

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**Appendix iii)**

**Current notes for contributors for** *'Behaviour Research and Therapy'*

Guide For Authors
# Behaviour Research and Therapy

## Guide for Authors

## Introduction

*Behaviour Research and Therapy* encompasses all of what is commonly referred to as cognitive behaviour therapy (CBT). The focus is on the following: theoretical and experimental analyses of psychopathological processes with direct implications for prevention and treatment; the development and evaluation of empirically-supported interventions; predictors, moderators and mechanisms of behaviour change; and dissemination and implementation of evidence-based treatments to general clinical practice. In addition to traditional clinical disorders, the scope of the journal also includes behavioural medicine. The journal will not consider manuscripts dealing primarily with measurement, psychometric analyses, and personality assessment.

**The Editor and Associate Editors will make an initial determination of whether or**

**not submissions fall within the scope of the journal and/or are of sufficient merit and importance to warrant full review.**

### Conflict of interest

All authors are requested to disclose any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations within three years of beginning the submitted work that could inappropriately influence, or be perceived to influence, their work. See also
[http://www.elsevier.com/conflictsofinterest](http://www.elsevier.com/conflictsofinterest).

### Submission declaration

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere including electronically in the same form, in English or in any other language, without the written consent of the copyright-holder.

### Language and language services

Please write your text in good English (American or British usage is accepted, but not a mixture of these).

### Article structure

*Subdivision - unnumbered sections*
Divide your article into clearly defined sections. Each subsection is given a brief heading. Each heading should appear on its own separate line. Subsections should be used as much as possible when cross-referencing text: refer to the subsection by heading as opposed to simply "the text".

*Appendices*
If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on.

**Essential title page information**

• *Title.* Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.

• *Author names and affiliations.* Where the family name may be ambiguous (e.g., a double name), please indicate this clearly. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name, and, if available, the e-mail address of each author.

• *Corresponding author.* Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. **Ensure that telephone and fax numbers (with country and area code) are provided in addition to the e-mail address and the complete postal address.**

• *Present/permanent address.* If an author has moved since the work described in the article was done, or was visiting at the time, a "Present address" (or "Permanent address") may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

*Abstract*

A concise and factual abstract is required with a maximum length of 200 words. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

*Keywords*

Immediately after the abstract, provide a maximum of 6 keywords, to be chosen from the APA list of index descriptors. These keywords will be used for indexing purposes.

**Abbreviations**

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

**Acknowledgements**

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g.,

providing language help, writing assistance or proof reading the article, etc.).

### Shorter communications

This option is designed to allow publication of research reports that are not suitable for publication as regular articles. Shorter Communications are appropriate for articles with a specialized focus or of particular didactic value. Manuscripts should be between 3000-5000 words, and must not exceed the upper word limit. This limit includes the abstract, text, and references, but not the title page, tables and figures.

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### Electronic artwork

*General points*
• Make sure you use uniform lettering and sizing of your original artwork.
• Save text in illustrations as "graphics" or enclose the font.
• Only use the following fonts in your illustrations: Arial, Courier, Times, Symbol.
• Number the illustrations according to their sequence in the text.
• Use a logical naming convention for your artwork files.
• Provide captions to illustrations separately.
• Produce images near to the desired size of the printed version.
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*Formats*
Regardless of the application used, when your electronic artwork is finalised, please "save as" or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):
EPS: Vector drawings. Embed the font or save the text as "graphics".
TIFF: color or grayscale photographs (halftones): always use a minimum of 300 dpi.
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TIFF: Combinations bitmapped line/half-tone (color or grayscale): a minimum of 500 dpi is required.
DOC, XLS or PPT: If your electronic artwork is created in any of these Microsoft Office applications please supply "as is".
**Please do not:**
• Supply embedded graphics in your wordprocessor (spreadsheet, presentation) document;
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## Tables

Number tables consecutively in accordance with their appearance in the text. Place footnotes to tables below the table body and indicate them with superscript lowercase

letters. Avoid vertical rules. Be sparing in the use of tables and ensure that the data presented in tables do not duplicate results described elsewhere in the article.

## References

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Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either "Unpublished results" or "Personal communication" Citation of a reference as "in press" implies that the item has been accepted for publication.

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*List:* references should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters "a", "b", "c", etc., placed after the year of publication.
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**Appendix iv)**

**Letter of approval from Psychology Department Ethics Subcommittee**

**Appendix v)**

*'Social Avoidance and Distress Scale'* **(Watson & Friend, 1969)**

**Appendix vi)**

*'Performance Rating Form'* **(Rappee & Lim, 1992)**

**Appendix vii)**

*'Brief State Anxiety Inventory'* **(Berg, Shapiro, Chambless & Ahrens, 1998)**

**Appendix viii)**

*‘Treatment Credibility Form’* **(Morrison & Shapiro, 1987)**

**Appendix viii)**

*'Fear of Negative Evaluation Scale'* **(Watson & Friend, 1969)**

**Appendix ix)**

***'State-Trait Anxiety Inventory- Trait Form'*** **(Spielberger, 1983)**