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Cognitive Behavioural Group Therapy for Social Phobia:

Evidence of Transportablity to Community Clinics

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Abstract

Cognitive Behavioural Group Therapy (CBGT) for social phobia has been shown to be efficacious within research units and effective within a variety of real world clinical settings. However, most effectiveness studies of CBGT for social phobia have (a) used protocols without demonstrated efficacy, (b) not included direct comparison groups, and/or (c) contained features of efficacy trials. This study addressed these limitations by using a benchmarking strategy to compare outcomes from the same CBGT protocol used in both a research unit and a community clinic. Research (N = 71) and community (N = 94) patients completed the same 12-session protocol, which resulted in significant reductions in social anxiety and life interference at post-treatment. Compared to research unit patients, community patients had more severe symptoms and life interference at pre-treatment, and were more likely to be male, use medication, have comorbid disorders, and have lower educational attainment. Importantly, degree of improvement on social anxiety symptoms and life interference did not differ across the treatment settings for either completer or intention-to-treat analyses. There was some evidence that being younger, single, and having a depression diagnosis were associated with dropout. Pre-treatment symptoms and number of diagnoses predicted post-treatment symptoms. Consistent with previous uncontrolled trials, it is concluded that CBGT is effective within community mental health clinics.

Key Words: Social phobia; cognitive behaviour therapy; group; effectiveness; benchmarking

1. Introduction

Social phobia is characterised by a fear of negative evaluation within social or performance situations, where individuals believe that they are under scrutiny and may be embarrassed (American Psychiatric Association, 1994). Social phobia is common, persistent, debilitating, and has one of the earliest onsets of all anxiety disorders, resulting in it being temporally primary to many subsequent comorbid anxiety, affective and substance use disorders (Andrews, Henderson, & Hall, 2001; McEvoy, Grove, & Slade, in press; Wittchen & Fehm, 2003). Cognitive behavioural individual (CBIT) and group (CBGT) therapy have been shown to be efficacious for social phobia in randomised controlled trials (RCTs, Butler, Chapman, Forman, & Beck, 2006; Jørstad-Stein & Heimberg, 2009; Rapee, Gaston, & Abbott, 2009). However, RCTs are difficult to conduct within real world clinics and the transportability of efficacious treatments to community populations cannot necessarily be assumed.

Efficacy trials prioritise internal validity and are a crucial first step to establishing the credentials of treatment protocols. However, there are a number of potential threats to the generalisability (i.e., external validity) of outcomes from well controlled efficacy trials to community clinics. Research trials typically select patients based on strict inclusion criteria, use highly trained and closely supervised specialist clinicians, and closely follow manualised treatment protocols. In contrast, effectiveness studies, which examine whether efficacious treatments result in comparable outcomes in naturalistic settings, use clinically representative patients (e.g., highly comorbid, severe, referred by health practitioners rather than through

advertisements or self-referral), therapists (e.g., not formally trained or supervised by the protocol developers, broad caseload rather than specialising in the target disorder, various levels of experience, unmonitored protocol adherence), and services (e.g., private practice, community mental health clinics, primary care; Stewart & Chambless, 2009). Dissemination of evidence-based treatments has probably been impeded by the perception that RCTs are not representative of real world circumstances (Barlow, Levitt, & Bufka, 1999), so it is important to demonstrate that efficacious treatments are robustly effective across various treatment settings.

Evidence for the transportability of CBT for social phobia to community clinics is accumulating for CBIT (Lincoln et al., 2003) and CBGT (Marom, Gilboa-Schechtman, Aderka, Weizman, & Hermesh, 2009; McEvoy, 2007), and there is evidence that CBGT is equally effective in research and private practice settings (Gaston, Abbott, Rapee, & Neary, 2006). Moreover, some effectiveness researchers have found that applying exclusion criteria used in efficacy trials has no effect on treatment outcomes (Lincoln et al., 2003; McEvoy, 2007), thus supporting the generalisability of efficacy trial outcomes. In contrast, two meta-analyses of CBT for social phobia across research and naturalistic settings have found an association between the number of laboratory treatment conditions and effect sizes, with studies using an array of efficacy trial restrictions having better outcomes (Lincoln & Rief, 2004; Stewart & Chambless, 2009). This finding suggests that treatment within clinically representative settings may be less effective than within well controlled research settings, and reinforces the need to directly compare outcomes across settings to demonstrate equivalence.

The evidence for the transportability of CBT for social phobia is promising, but limitations in the existing effectiveness literature remain. One limitation is that some effectiveness studies have failed to directly compare outcomes to previous

benchmarks (e.g., Haug et al., 2000), so it is unclear whether outcomes vary across settings. A second limitation is that some effectiveness studies have used protocols without demonstrated efficacy within well controlled trials. Whilst modifying evidence-based protocols to better fit patient or service requirements (e.g., inpatient vs. outpatient, session duration, program length, clinician availability) is consistent with the philosophy of effectiveness research, it nonetheless makes it difficult to directly attribute treatment gains to the strategies in the manual. For instance, McEvoy (2007) used a benchmarking strategy to compare effect sizes from an uncontrolled study in a community mental health clinic (CMHC) to previous efficacy and effectiveness trials of both CBIT and CBGT. This study found that effect sizes were within the range of previous efficacy and effectiveness studies for both treatment formats. However, while the treatment protocol in McEvoy's (2007) study contained similar core components to efficacious CBGT protocols, the manual had not been previously evaluated within an efficacy trial and no comparison group was used. Likewise, Marom et al. (2009) found that effect sizes from CBGT in a naturalistic setting compared well to previous studies and meta-analyses, with gains maintaining at one-year follow-up. While a theory- and evidence-guided protocol was used (i.e., cited as being *based on* an efficacious manual), it was unclear whether the protocol had been previously evaluated in an RCT. A third limitation is that many effectiveness studies contain efficacy trial qualities, such as excluding individuals with comorbidities or recruiting via self-referral or newspaper advertisements (e.g., Haug et al., 2000; Marom et al., 2009). In addition to these limitations recent research has demonstrated that combining theory-driven components with more traditional CBT strategies (referred to as enhanced-CBGT) led to somewhat stronger effects than use of a more traditionally-based CBGT only (Rapee et al., 2009). However, this enhanced protocol is yet to be evaluated within a naturalistic setting. The current

study sought to address these limitations by using a benchmarking strategy to directly compare outcomes in community and research settings when the same efficacious, CBGT protocol was used.

The first aim of this study was to compare treatment outcomes across research and community samples using a CBGT manual with demonstrated efficacy (Rapee et al., 2009). Patient, clinician and service factors within a CMHC may reduce treatment effects (Lincoln & Rief, 2004; Stewart & Chambless, 2009). Alternatively, consistent with benchmarking studies conducted to date (Lincoln et al., 2003; Marom et al., 2009; McEvoy, 2007), it may be that CBGT is robustly effective despite differences that exist across service settings. The second aim of this study was to identify sociodemographic and clinical factors associated with (a) treatment attrition, (b) any observed differences in outcomes between the two settings, and (c) post-treatment symptoms. In addition to basic demographic variables (age, gender), other factors previously found to be associated with treatment outcome were examined, including pre-treatment symptoms, pre-treatment impairment, medication use, and comorbid depression.

2. Method

2.1. Participants

Participants in the research unit (RU) comprised the 71 individuals from an RCT comparing the "enhanced" CBGT protocol that was used in this study to standard CBGT and non-specific treatment (Rapee et al., 2009). Five participants did not provide pre-treatment data, so were excluded from all subsequent analyses in this study (total N = 66). All patients had been allocated to the enhanced-CBGT condition and all had a principal diagnosis of social phobia (see Table 1). Most were born in Australia or New Zealand (81.8%). The RU specialises in the assessment and treatment of anxiety disorders, and the assessment was subsidised and treatment was

free in return for participating in an RCT. The RU recruited participants via media stories, self-referrals, or referrals from other professionals. A maximum of four disorders were coded in the database. Additional diagnoses included generalised anxiety disorder (23%), major depressive disorder (12%), specific phobia (8%), dysthymia (6%), panic disorder (6%), obsessive compulsive disorder (8%), and bipolar affective disorder (2%).

Participants in the CMHC comprised 94 consecutive admissions with a diagnosis of social phobia, which was listed as the principal diagnosis for 79 patients (84.0%). Principal diagnoses for the remaining patients were major depressive disorder (n = 8), dysthymia (n = 2), bipolar affective disorder (n = 3), panic disorder with agoraphobia (n = 1), and generalised anxiety disorder (n = 1). Most were born in Australia or New Zealand (73%). Patients were referred to a CMHC that specialises in the treatment of anxiety and depressive disorders by health professionals (General Medical Practitioners, Psychiatrists, Psychologists). A maximum of three diagnoses were coded in the database. Additional diagnoses included major depressive disorder (48%), dysthymia (14%), generalised anxiety disorder (16%), panic disorder (3%), bipolar affective disorder (4%), and substance use disorders (1%).

Inclusion criteria in both samples were that participants met diagnostic criteria for social phobia, were not currently actively suicidal, self-harming, or experiencing psychosis, and that their level of substance use was judged by the assessing clinician as unlikely to significantly interfere with engagement in treatment. All participants met the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994) criteria for a diagnosis of social phobia, although the diagnostic assessment differed between settings. Social phobia was required to be the principal diagnosis in the RU sample. Although most of the CMHC sample had a principal diagnosis of social phobia, consistent with real world practice, this was not a

requirement for treatment. Patients and assessing clinicians within the CMHC made a collaborative decision to participate if social phobia was considered to be a treatment priority because it contributed functionally or substantively to their principal disorder (e.g., depression symptoms). The three participants with primary bipolar disorder had completed a separate group targeting mania and depression symptoms prior to attending the social phobia group. Participants in the RU program were assessed by clinical psychology graduate students using the Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV; Di Nardo, Brown, & Barlow, 1994). Clinical Psychologists experienced in the assessment and treatment of adult anxiety disorders trained the graduate students in the structured interview. Patients in the CMHC were assessed with the Mini International Neuropsychiatric Interview (MINI PLUS 5.0; Sheehan et al., 2001), which is a relatively brief structured diagnostic interview based on DSM-IV. Assessing clinicians were masters- or doctorate level Clinical Psychologists who had completed clinical qualifications. All presenting patients were discussed at weekly clinical meetings with the treating team to review diagnoses and the treatment plan with respect to inclusion criteria. Groups were run by two clinicians, typically with one masters- or doctorate-level Clinical Psychologist and one Clinical Psychologist Intern. Treating Clinical Psychologists within the RU had specific expertise in the treatment of social phobia and were supervised on a weekly basis by the protocol developer (see Rapee et al., 2009 for more details). Treating Clinical Psychologists within the CMHC did not receive training or supervision from the developers of the protocol, but they did receive regular supervision within the service and all had expertise in CBT and in the treatment of anxiety and affective disorders, including social phobia. All patients provided written informed consent for their de-identified data to be used for research purposes.

2.2. Measures

2.2.1. Mini International Neuropsychiatric Interview-PLUS (MINI-PLUS 5.0; Sheehan et al., 2001).

The MINI-PLUS was administered to all participants in the CMHC during their initial assessment to determine the presence of social phobia and comorbid Axis I disorders. The MINI is a structured interview used to diagnose Axis I disorders based on the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994). It has good validity and has been found to converge with lengthier diagnostic interviews, including the Structured Clinical Interview for DSM (SCID) and Composite International Diagnostic Interview (CIDI, Lecrubier et al., 1997; Sheehan et al., 1997).

2.2.1. Anxiety Disorders Interview Schedule-IV (ADIS-IV, Di Nardo et al., 1994)

The ADIS is a structured diagnostic interview that was used in the RU to establish the presence of social phobia and comorbid Axis I disorders. High interrater reliability has been demonstrated previously at the RU used in this study (Gaston et al., 2006, $\kappa = .89$, $p < .001$; Rapee et al., 2009; $\kappa = .86$, $p < .001$) and at others (Brown, Di Nardo, Lehman, & Campbell, 2001).

2.2.2. Social Phobia Scale (SPS) & Social Interaction and Anxiety Scale (SIAS; Mattick & Clarke, 1998).

The SPS and SIAS are widely used, 20-item measures of performance and interaction anxiety, respectively. The SPS describes situations in which the person is the focus of attention and observed by others, such as eating, drinking, and writing. The SIAS contains items reflecting cognitive, affective, and behavioural reactions to interaction situations, such as nervousness when speaking to authority, mixing with people, and talking to an attractive person of the opposite sex. The 5-point response scale for both scales is *Not at all*, *Slightly*, *Moderately*, *Very*, or *Extremely* characteristic of me. Internal reliabilities for the SPS ($\alpha = .89$) and SIAS ($\alpha = .93$) are

high within clinical samples and these scales have been shown to be sensitive to change (Cox, Ross, Swinson, & Direnfeld, 1998; Mattick, Peters, & Clarke, 1989). Twelve-week test-retest reliabilities are high for both the SPS (r = .93) and SIAS (r = .92, Mattick & Clarke, 1998).

2.2.3. Life Interference Scale (LIS, Rapee et al., 2009)

The Life Interference Scale (LIS) is a 6-item measure of life impact of individuals' social fears. The first four items begin with the stem "My social anxiety interferes with my..." and are completed with the words "work/school/career", "leisure activities", "social life", and "home/family life", respectively. The fifth item is "My social anxiety makes my day-to-day living unpleasant", and the sixth item is a summary item ("Overall my social anxiety interferes with my life and activities (work, school, career, family, and leisure"). An 8-point Likert scale is used with qualifiers on the following numbers: 0 (not at all), 2 (slightly), 4 (moderately), 6 (a lot), and 8 (extremely). The instructions are "Please colour in a number for each of the following scales to indicate the degree to which your anxiety in social situations CURRENTLY interferes with your life." Rapee et al. (2009) report excellent internal reliability (α = .90) and convergent validity with the 12-item Short Form Health Survey – Mental Component Subscale (Ware, Kosinski, & Keller, 1996). Internal reliability was also very high within the CMHC sample in this study (α = .85).

2.3. Procedure

Participants in the RU were offered an initial diagnostic and clinical assessment with a clinical psychology intern after which they were offered treatment. Participants referred for treatment to the CMHC were offered an initial diagnostic and clinical assessment by a Clinical Psychologist with various levels of experience (intern, masters level, or doctorate level). Consecutive referrals who met the inclusion criteria were offered a place in the next scheduled group. Participants in both services

completed symptom measures just prior to commencing the group program and again on the final day of the program.

Treatment in both settings followed the same manual. Enhanced cognitive behavioural group therapy (CBGT) for social phobia comprised 12 weekly, 2-hour sessions. The program has been previously evaluated and found to be efficacious compared to standard CBGT and a nonspecific stress management treatment. Treatment integrity in the RU was determined by audiotaping sessions and coded independently by blind raters (see Rapee et al., 2009, for more details). Consistent with an effectiveness trial, adherence to protocol was not monitored in the CMHC.

The enhanced program included psychoeducation and socialisation to the cognitive model (Session 1), cognitive monitoring (Session 2) and restructuring (Session 3), in vivo exposure conducted as a series of behavioural experiments involving hypothesis testing (Sessions 4 and 5), elimination of safety behaviours (Session 6), video-feedback to correct distorted perceptions from the observer-perspective (Session 7), attention training (Session 8), a consolidation session involving in vivo application of all skills (Session 9), identification (Session 10) and challenging (Session 11) of negative core beliefs, and relapse prevention (Session 12). Sessions involve a homework review, in-session skills practice and behavioural experiments, and setting homework tasks based on the new skills. For instance, the session on safety behaviours involves psychoeducation about how safety behaviours maintain social fears, followed by a behavioural experiment whereby participants manipulate their use of safety behaviours and examine the impact on factors such as social performance, self-consciousness, and social anxiety. The attention training session involves psychoeducation about the role of self-focused and environment-focused attention, as opposed to task focused attention, in maintaining social anxiety. Attention strengthening exercises (i.e., brief meditation and mundane task focusing

exercises) and attention focusing (i.e., deploying attention on the social task at hand rather than on oneself or off-task stimuli) are then rehearsed in session. Sessions five and nine include in vivo behavioural experiments in public. Groups comprised six to nine patients. Follow-up periods between the two services differed, with the CMHC offering a one-month follow-up and the RU offering a three-month follow-up, so these data are not compared in this study.

3. Results

3.1. Demographic comparisons

The two groups were first compared on demographic variables to assess for any significant pre-treatment differences using independent-samples t-tests and chi-square analyses. Bonferroni corrections were not initially applied for these analyses because they would have favoured the hypothesis that the two samples were similar and thus may have obscured important differences. The samples did not significantly differ on age, marital status, or employment status, but they did significantly differ on gender and educational status. There was a higher proportion of women (p = .03), a lower proportion with less than high school qualifications, and higher proportion with technical or trade qualifications (p = .03), in the RU sample compared to the CMHC sample (see Table 1).[1]

3.2. Clinical comparisons

The groups were then compared on clinical variables and treatment attrition. Compared to the RU sample, the CMHC sample were more likely to be using medication, to have more comorbid disorders, and to have a depressive disorder (major depressive disorder or dysthymia). However, the groups did not significantly differ on the number of treatment sessions attended (see Table 1). Pre-treatment symptom measure scores for the two groups were compared using independent-samples t-tests. Seven and seventeen participants did not provide pre-treatment data

for the SPS and LIS, respectively. The CMHC sample scored significantly higher than the RU sample on the SPS (M = 41.60, SD = 16.32 vs. M = 33.55, SD = 14.13, respectively), $t(151) = 3.20$, $p = .002$, SIAS (M = 56.95, SD = 10.30 vs. M = 52.27, SD = 14.23, respectively), $t(158) = 2.41$, $p = .02$[1], and LIS (M = 36.78, SD = 6.95 vs. M = 32.47, SD = 9.22, respectively), $t(144) = 3.21$, $p = .002$.

3.3. Treatment attrition

For the purposes of determining differences in treatment attendance, completers were defined here only by number of sessions attended. The criterion of 8 or more sessions was used to define individuals who completed enough of the program to have benefited. Almost three-quarters (73.4%) of the CMHC and 81.8% of the RU samples met this criterion, and this difference between samples did not reach statistical significance, $\chi^2(1) = 1.54$, $p = .21$. Given that the number of attended treatment sessions and the proportion of treatment completers did not significantly differ between the groups, data were collapsed prior to examining factors associated with discontinuation. Comparisons were based on the same demographic and clinical variables used to compare the two samples at pre-treatment, with the exception of the number of sessions attended and proportion of continuers.

On average, completers were five years older than discontinuers (35.2 vs. 30.2 years, respectively), $t(158) = 2.28$, $p = .02$.[1] Chi-square tests failed to find a significant difference between completers and discontinuers on gender, $\chi^2(1) = .94$, $p > .05$, educational status, $\chi^2(3) = 5.10$, $p > .05$, or employment status, $\chi^2(1) = 1.72$, $p > .05$. However, completers were more likely to be married (36% vs. 19%) and less likely to be single (55% vs. 78%) than continuers, $\chi^2(2) = 6.51$, $p = .04$[1]. For the clinical variables, chi-square tests failed to find a significant difference for the proportion using medication, $\chi^2(1) = 2.76$, $p > .05$, or number of diagnoses, $\chi^2(2) = 2.17$, $p > .05$, but a higher proportion of discontinuers had a depression diagnosis

compared to completers (59.5% vs. 35.8%), $\chi^2(1) = 6.59$, $p = .01$[1]. Independent samples t-tests failed to find a significant difference between completers and discontinuers on pre-treatment SIAS, $t(158) = .70$, $p > .05$, SPS, $t(151) = 1.01$, $p > .05$, or LIS, $t(144) = -.65$, $p > .05$.

3.4. Effects of treatment: Completer analyses

Consistent with Gaston et al. (2006), all participants who attended at least eight treatment sessions and provided pre- and post-treatment data on the outcome measures (SPS, SIAS) were included in the completer analyses, which left 58 (61.7%) from the CMHC sample and 52 (78.8%) of the RU sample. For the LIS, data for 52 completers were available from both samples. Repeated measures analyses of variance (ANOVA) were conducted with Location (RU vs. CMHC) as the between-subjects variable and Time (pre- vs. post-treatment) as the within-subjects variable. Completer and intention-to-treat (ITT) within-group effect sizes (ES, Tables 2 and 3) were calculated separately for the RU and CMHC using Cohen's *d*, where the ES equals the mean at pre-treatment minus the mean at post-treatment, divided by the pooled standard deviation. Effect sizes for ANOVAs and Analysis of Covariance (ANCOVA) are partial eta-squared (η2). The two-way ANOVAs had 80% power to detect small to medium effects (η2 = .03-.04) at an alpha level of .05. All within group ESs were large (Cohen, 1992).

The main effect of Time was significant for the SPS, $F(1,108) = 168.46$, $p < .001$, $\eta^2 = .61$, SIAS, $F(1,111) = 157.63$, $p < .001$, $\eta^2 = .59$, and LIS, $F(1,102) = 144.21$, $p < .001$, $\eta^2 = .59$, showing a significant reduction in scores from pre- to post-treatment. However, the Time x Location interaction was not significant for the SPS, $F(1,108) = 2.02$, $p > .05$, $\eta^2 = .02$, SIAS, $F(1,111) = .55$, $p > .05$, $\eta^2 < .01$, or LIS, $F(1,102) = .18$, $p > .05$, $\eta^2 < .01$. Effect sizes were large for the main effects and small for the interaction effects (Cohen, 1992).[2]

3.5. Effects of treatment: Intention-to-treat (ITT) analyses

ITT analyses included all participants with pre-treatment data, regardless of whether they discontinued treatment or failed to return their post-treatment questionnaires. Missing data at post-treatment were accounted for by bringing forward the participant's pre-treatment score. The ITT mean scores for each symptom measure at pre- and post-treatment are reported in Table 3. Similar to the completer analyses, the main effect of Time was significant for the SPS, $F(1,151) = 127.61$, $p < .001$, $\eta^2 = .46$, SIAS, $F(1,158) = 129.51$, $p < .001$, $\eta^2 = .45$, and LIS, $F(1,139) = 126.23$, $p < .001$, $\eta^2 = .44$, showing a significant reduction in scores from pre- to post-treatment. All effect sizes for the main effects were large (Cohen, 1992). Also like the completer analyses, the Time x Location interaction was not significant for the SPS, $F(1,151) = .01$, $p > .05$, $\eta^2 < .01$, or SIAS, $F(1,158) = 1.11$, $p > .05$, $\eta^2 < .01$, and just fell short of statistical significance for the LIS, $F(1,144) = 3.80$, $p = .053$, $\eta^2 = .03$, although the effect size was small (Cohen, 1992).[3] Completer and ITT analyses were re-run after excluding CMHC patients without social phobia as the principal diagnosis and the results were almost identical (η2 was identical for most effects, and no changes exceeded .02), so they are not reported here.

3.6. Reliable and clinically significant change

Effect sizes provide an indication of average change during treatment, whereas reliable change (RC) indicates the proportion of individuals who have achieved a change score that is likely to be statistically reliable and not attributable to measurement error. Clinically significant change (CSC) suggests that RC has been achieved and an individual's score has shifted from the dysfunctional to the functional range (Jacobson & Truax, 1991). The proportion of patients meeting criteria for RC and CSC were calculated for completers (i.e., 8+ sessions) providing pre- and post-treatment data. Adjustments for regression to the mean were made (Speer, 1992) prior

to calculating the reliable change index (Jacobson & Truax, 1991) using test-retest reliability coefficients reported by Mattick and Clarke (1998, SPS = .93, SIAS = .92). Using this method, RC was indicated by 10.66 and 8.84 point changes on the SPS and SIAS, respectively. Collapsing across the groups, 3.6% reliably deteriorated (i.e., RC in the direction of increased symptoms), 31.8% remained unchanged (i.e., no RC), and 64.5% reliably improved on the SPS. Proportions for the SIAS were 2.7%, 38.1%, and 59.3%, respectively. The proportion of patients meeting these criteria across the two samples is reported in Table 4. Chi-square tests failed to show a significant difference in the proportion of patients achieving reliable change across the two locations for either the SPS, $\chi^2(1) = .06$, $p = .97$, or SIAS, $\chi^2(1) = .85$, $p = .65$.

As used in previous studies benchmarking outcomes on these measures (McEvoy, 2007), CSC cutoff scores were defined as the mid-point between clinical and non-clinical means (Mattick & Clarke, 1998). These scores corresponded to 24.94 for the SPS and 25.41 for the SIAS. On the SPS, 19.1% (RU = 21.2%, CMHC = 17.2%) of the sample fell below this cutoff before treatment, whereas only .9% (1 patient from the RU, 1.9%) fell below the SIAS cutoff before treatment. CSC was defined as the proportion of those scoring above the clinical cutoff before treatment who (a) achieved reliable improvement during treatment based on the RC index, and (b) scored below the clinical cutoff after treatment (Jacobson & Truax, 1991). Collapsing across the samples, 51.7% (46/89) achieved CSC on the SPS and 15.2% (17/112) achieved CSC on the SIAS. For those who scored above the CSC cutoff before treatment, Table 4 reports the proportion that achieved RC but did not score below the cutoff at post-treatment, and the proportion that achieved RC and also scored below the CSC cutoff at post-treatment (i.e., achieved CSC). Around half of those scoring above the CSC cutoff at pre-treatment achieved CSC on the SPS across both samples. In contrast, only around 12% (RU) to 18% (CMHC) achieved CSC on

the SIAS. The proportion of individuals with pre-treatment scores above the CSC cutoffs that achieved CSC did not significantly differ by location for the SPS, $\chi^2(1) = .06$, $p = .81$, or SIAS, $\chi^2(1) = .59$, $p = .44$.

3.7. Predictors of post-treatment symptoms

Finally, predictors of post-treatment symptom severity were examined. Given the absence of any significant Time x Location interaction on the primary outcome measures, completer data were collapsed across the two locations. Multiple linear regression analysis was used to predict post-treatment SPS and SIAS scores in separate models. Predictors included demographic variables (age, gender), pre-treatment symptoms, and clinical variables, including medication use (yes, no), presence of comorbid depression (major depressive disorder or dysthymia), number of diagnoses, and pre-treatment life interference scale score. This model explained a significant proportion of variance in post-treatment SPS and SIAS scores (Table 5). Pre-treatment symptoms and number of diagnoses were unique predictors in both models, with more severe pre-treatment symptoms and more disorders predicting more severe post-treatment symptoms. No other predictors were significant.

4. Discussion

The first aim of this study was to benchmark outcomes from CBGT for social phobia in a community mental health clinic (CMHC) to outcomes from a research unit (RU) using the same efficacious treatment protocol. There were several indications that the CMHC sample was more complex and debilitated by their social anxiety than those in the RU sample. Compared to the RU sample, the CMHC sample was more likely to use medication for their anxiety, to have more comorbid disorders, and to have a comorbid depressive disorder. The higher proportion of the CMHC sample with a depressive disorder may be partially, but not completely, attributable to some patients (11%) with a principal depressive disorder being accepted into treatment,

whereas the RU required a principal diagnosis of social phobia. The CMHC reported more severe symptoms and life interference at pre-treatment, and there was also some evidence that a higher proportion of the CMHC sample did not complete high school. Despite these differences no significant Time by Location interactions were found on any outcome measure (SIAS, SPS, or LIS) for completer or intention-to-treat (ITT) analyses, suggesting that the rate of change did not significantly differ across the samples. The only exception was when controlling for demographic and clinical differences between the samples, the Time by Location interaction was significant for the SPS, with the CMHC sample scoring more highly at pre-treatment but not at post-treatment compared to the RU sample. It is noteworthy that the effect sizes compared very favourably to previous efficacy and effectiveness studies using group and individual treatment formats (McEvoy, 2007; Stewart & Chambless, 2009). Overall, these findings provide strong support for the hypothesis that CBGT is transportable to community clinics and that outcomes achieved in efficacy settings can translate into everyday practice. Given that clinicians at the CMHC were not trained by the manual developers, the main clinical implication is that dissemination of the evidence-based manuals into community clinics can result in comparable outcomes when run by clinicians with experience in CBT, regardless of differences in treatment settings or patient characteristics.

In addition to effect sizes, reliable change (RC) and clinically significant change (CSC) were benchmarked. Almost two-thirds of patients achieved reliable improvement, which is suggestive of true change that cannot be attributed to measurement error. Around one-third remained unchanged with a very small proportion reliably deteriorating. Of those who reliably improved on the SPS and scored above the clinical cutoff at pre-treatment, around half scored below the clinical cutoff at post treatment and therefore achieved CSC. Of concern is the fact that only a

minority of RU (33.3%, 22/66) and CMHC (25.5%, 24/94) patients who commenced CBGT completed treatment and scored within levels of the functional population on the SPS at post-treatment (i.e., achieved CSC). Therefore, two-thirds to three-quarters of patients remained within levels of social anxiety characteristic of the dysfunctional population. Even lower proportions of the RU (9.1%, 6/66) and CMHC (11.7%, 11/94) samples completed treatment and achieved CSC on the SIAS.

Few previous studies have reported comparable RC and CSC indices. The rates of reliable improvement in this study compare well to McEvoy (2007), who found that around half of treatment completers met this criterion on the SPS (51%) and SIAS (57%), and to Lincoln et al. (2003, SPS = 68.2%, SIAS = 57.1%). The similarity in these rates of RC are striking given the differences in treatment format (individual, Lincoln et al., 2003; group, McEvoy, 2007), settings (community clinics in different countries and cities), and protocols. In terms of CSC, McEvoy (2007) also found a lower rate of CSC on the SIAS (8%) than the SPS (32%), whereas Lincoln et al. (2003) found a slightly higher rate of CSC for the SIAS (26%) than the SPS (20%). The proportion of treatment completers achieving CSC in our study was higher on the SPS (RU = 53.7.0%, CMHC = 50.0%) than in these two previous studies, but in between on the SIAS (RU = 11.8%, CMHC = 18.0%). It is important to note that while mean pre-treatment SPS scores were similar across Lincoln et al.'s (2003, *M* = 37.7), McEvoy's (2007, *M* = 39.5) and our (RU/CMHC *M*s = 35.6/41.8) samples, the mean pre-treatment SIAS score was substantially lower for Lincoln et al.'s (2003) sample (M = 40.0), than for McEvoy's (2007, M = 56.1) or our (RU *M* = 52.5, CMHC *M* = 57.8) samples. Thus, on average, a larger reduction in SIAS scores was required to achieve CSC in McEvoy's (2007) and our samples compared to Lincoln et al.'s (2003) sample.

Whilst the findings from this study suggest that the majority of treatment completers can expect reliable improvement from CBGT, only a minority is likely to fall within the functional range at post-treatment. When dropout is taken into account, the disappointingly low proportion of patients achieving CSC clearly indicates a need to improve our understanding of factors contributing to treatment attrition and optimal outcomes. The mean number of sessions attended and the proportion of discontinuers (attending at least 8 sessions) did not significantly differ across the samples, although, similar to previous studies of CBT for social phobia (e.g., Hofmann & Suvak, 2006, 25.6%; Marom et al., 2009, 25.6%), a substantial minority of patients discontinued treatment in this study (CMHC = 26.6%, RU = 18.2%). The search for reliable predictors of dropout and symptom change is important to guide theoretical developments and to identify individuals who are most likely to benefit from treatment. The ability to match patients to specific treatments would optimise resource allocation and outcomes, and direct research attention to factors associated with less change. However, replicable predictors of dropout and outcome remain elusive (Eskildsen et al., 2010; Hofmann & Suvak, 2006; Lincoln et al., 2005).

Discontinuers were around five years younger than completers within the CMHC sample. It is noteworthy that McEvoy (2007) found an almost identical (and statistically significant) age difference between completers and discontinuers using a different manual and in a different treatment setting. It is plausible that older patients are more motivated to complete treatment because on average they have endured the symptoms for longer, and may be less likely to expect their symptoms to spontaneously remit (McEvoy, 2007). A higher proportion of completers were married or in de facto relationships compared to discontinuers, which may suggest that partners provided encouragement and support to persevere with the rigors of treatment. Some studies have found associations between comorbidity with other Axis

I disorders and dropout (Lincoln et al., 2005), although this has not been a consistent finding (Esklidsen et al., 2010). Although number of diagnoses did not differ between completers and discontinuers in this study, more discontinuers had a depression diagnosis (59.9 vs. 35.8%). Depression may lead to dropout via greater hopelessness about one's ability to change, or less positive appraisals of the magnitude of actual change (Chambless et al., 1997; Lincoln et al., 2005). There is some evidence that comorbid depression is associated with treatment dropout (Ledley et al., 2005), poorer end-state functioning (Chambless, Tran, & Glass, 1997; Lincoln et al., 2005), and higher relapse rates at one-year follow-up (Marom et al., 2009), although again these are not consistent findings in the literature (see Eskildsen et al., 2010). Likewise, there is some evidence that pre-treatment symptom severity and impairment is associated with dropout (Lincoln et al., 2005, Turner et al., 1996), but these findings failed to replicate in this study. In sum, while there was some evidence that dropout was associated with younger age, being single, and comorbid depression, most demographic and clinical variables were not associated with discontinuation.

Pre-treatment social anxiety symptoms (SIAS, SPS) and the number of comorbid disorders were the only consistent predictors of post-treatment symptoms, suggesting that patients commencing treatment with more severe symptoms and more comorbidity ended treatment with more severe symptoms. In contrast, demographic variables (age, gender), medication use, comorbid depression, and pre-treatment life interference failed to predict post-treatment symptoms, suggesting that patients were equally likely to benefit from treatment regardless of their age, gender, use of medication, comorbid depression, or degree of life interference from their symptoms. Although the number of CMHC patients without a principal diagnosis of social phobia was too small to compare as a subgroup in this study, an important question for future research is whether patients benefit from treatment to a similar degree

regardless of whether or not social phobia is their principal diagnosis. While efficacy trials select patients based on their principal diagnosis, an important empirical question is whether or not patients benefit even if they have a different chief complaint. It is noteworthy that excluding CMHC patients without a principal diagnosis of social phobia did not affect the pattern of results in this study.

The lower proportion of patients achieving CSC on the SIAS compared to the SPS suggests that the protocol may benefit from additional modules specifically targeting social interaction situations. Whilst the group context provides opportunities to interact with others and to practice skills during role plays, patients tend to become relatively comfortable with other group members during the program. Idiographic behavioural experiments involving the initiation and maintenance of social interactions are generally completed between sessions in the context of patients' lives. In contrast, opportunities to confront performance situations are regularly provided within sessions (e.g., speaking during group discussions, reading sections of the manual aloud, a video-taped oral presentation, shame-attacking exercises in public), and these may generalise to performance situations between sessions more readily than social interactions with other group members. It may be that interacting with others in the social anxiety group is perceived to be 'safer' than interacting with general members of the public, and thus fails to modify feared probability and cost estimates more generally. If patients are relatively noncompliant with interaction practices between sessions, either due to avoidance or perceived lack of opportunity, they are likely to confront a higher proportion of performance situations than interaction situations within sessions. Another possible explanation for performance anxiety responding to treatment more quickly is that performance fears are more circumscribed and open to clear disconfirmation than social interaction fears, which may be more subtle and ambiguous. Consistent with this explanation, there is

evidence that individuals with circumscribed fears are more likely to have a specific conditioning onset, whereas those with generalised social phobia are more likely to have a history of childhood shyness and thus their social anxiety is more temperamental (Rapee & Spence, 2004; Stemberger, Turner, Beidel, & Calhoun, 1995). It is for future research to determine whether increasing the proportion of 'real world' social interaction behavioural experiments during sessions, but with people outside of the group, can improve outcomes in terms of social interaction anxiety.

Several limitations of this study must be considered. First, given the different follow-up periods these data were not compared across treatment settings. Therefore, we are unable to determine whether gains at post-treatment were differentially maintained across treatment settings over time. Second, outcomes were limited to self-report questionnaires, so it is unclear how these scores related to actual behavioural change or implicit processes (e.g., attentional biases). Third, therapist compliance was not monitored in the CMHC, so we are unable to verify that clinicians did not stray from the protocol. This limitation may have adversely affected internal validity for the CMHC, although this reflects real world practice and is consistent with the primary aim of this study (Chambless & Hollon, 1998; Stewart & Chambless, 2009). Fourth, clinical psychologists at the CMHC were experienced in using CBT to treat anxiety disorders, so our findings may not generalise to clinicians who are less experienced in these areas. Future research evaluating the application of CBGT with other health professionals (e.g., mental health nurses and occupational therapists), who may be less experienced using CBT to treat anxiety disorders, would be informative. Fifth, although medication use failed to predict post-treatment symptoms, it cannot be ruled out that the significantly higher rate of medication use in the CMHC sample differentially contributed to symptom change across samples.

Our study found that CBGT was effective in a CMHC and outcomes compared well to those in a research setting that used the same protocol. Few sociodemographic and clinical differences were identified across the samples, and all differences were unrelated to outcomes with the exception of number of comorbid disorders. Rates of discontinuation did not significantly differ across treatment settings. Overall these findings suggest that CBGT is transportable to community settings, and that all patients should be offered CBT regardless of their sociodemographic or clinical profile. Efficacious CBGT developed within research contexts is effective for complex patients within community clinics.

Footnotes

[1] Denotes effects that were no longer significant after Bonferroni adjustments were made to control for family-wise Type I error rate

[2] Repeated measures ANCOVAs were used to test for interactions when controlling for the demographic and clinical variables found to significantly differ between the CMHC and RU samples (gender, use of medication, number of diagnoses, presence of a depressive disorder, and educational status). The Time by Location interaction was only significant for the SPS, $F(1,106) = 4.04$, $p < .05$, $\eta^2 = .04$. Follow-up univariate ANCOVAs demonstrated that the CMHC sample had a significantly higher mean SPS score than the RU sample at pre-treatment, $F(1, 108) = 6.13$, $p < .05$, $\eta^2 = .06$, but that this difference was no longer significant at post-treatment, $F(1, 108) = 2.18$, $p > .05$, $\eta^2 < .02$.

[3] Repeated measures ANCOVAs failed to find a significant Time by Location interaction when controlling for demographic and clinical differences between the samples.

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Table 1

Demographic Characteristics of the RU and CMHC Groups

	RU (N = 66) (Mean or %)	CMHC (N = 94) (Mean or %)	df	*t*/ χ^2	*p*
Sociodemographic variables (adjusted $p < .01$)					
Age (years)	35.82 (12.25)	32.77 (11.41)	158	$t = 1.62$	.11
Gender (% women)	58	40	1	$\chi^2 = 4.57$	.03
Marital Status (%)			2	$\chi^2 = 1.62$	.45
Single	59	61			
Married/de facto	36	30			
Separated/Divorced	5	9			
Educational status (%)			3	$\chi^2 = 9.02$	.03
Less than high school	5	20			
High school	31	33			
Technical/Trade	31	19			
Tertiary qualifications	34	29			
Employed (%)	64	50	1	$\chi^2 = 3.14$	.08
Clinical variables (adjusted $p < .006$)					
Problem medicated (%)	27	62	1	$\chi^2 = 18.43$*	<.001
Number of diagnoses (%)			2	$\chi^2 = 11.72$*	.003
1	56	31			
2	23	46			
3+	21	23			
Depressive disorder (%)	18	57	1	$\chi^2 = 24.67$*	<.001

Number of sessions	9.47 (3.33)	9.14 (3.47)	158	t = -.60	.55

Note. RU = research unit, CMHC = community mental health clinic

*Statistically significant at adjusted alpha

Table 2

Completer Mean Symptom Scores (Standard Deviations) and effect sizes for the RU and CMHC Groups at Pre- and Post-Treatment

	RU				CMHC			
	n	Pre	Post	*d* [a]	n	Pre	Post	*d* [a]
SIAS	52	52.52 (14.69)	38.02 (15.07)	.97	61	57.77 (9.41)	41.46 (15.05)	1.33
SPS	52	35.60 (13.85)	20.65 (11.97)	1.16	58	41.78 (15.82)	23.16 (14.76)	1.22
LIS	52	32.71 (8.98)	20.20 (12.18)	1.18	52	36.19 (7.24)	24.54 (10.79)	1.29

Note. RU = research unit, CMHC = community mental health clinic, pre = pre-treatment, post = post treatment, SIAS = social interaction anxiety scale, SPS = social phobia scale, LIS = life interference scale.

[a] Within group effect sizes

Table 3

Intention-To-Treat Mean Symptom Scores (Standard Deviations) and effect sizes for the RU and CMHC Groups at Pre- and Post-Treatment

	RU				CMHC			
	n	Pre	Post	*d* [a]	n	Pre	Post	*d* [a]
SIAS	66	52.27 (14.23)	39.15 (15.69)	.88	94	56.95 (10.30)	46.05 (15.34)	.85
SPS	66	33.55 (14.13)	20.63 (11.95)	.99	87	41.60 (16.32)	28.94 (17.92)	.74
LIS	66	32.47 (9.22)	21.29 (13.16)	1.00	80	36.77 (6.95)	29.09 (12.14)	.80

Note. RU = research unit, CMHC = community mental health clinic, pre = pre-treatment, post = post treatment, SIAS = social interaction anxiety scale, SPS = social phobia scale, LIS = life interference scale.

[a] Within groups effect sizes

Table 4

Number (Proportion) of Each Sample Achieving Reliable Change (RC) and Clinically Significant Change (CSC)

	RU		CMHC	
	SPS (N = 52)	SIAS (N = 52)	SPS (N = 58)	SIAS (N = 61)
Reliable deterioration	2 (3.8%)	1 (1.9%)	2 (3.4%)	2 (3.3%)
Unchanged	16 (30.8%)	22 (42.3%)	19 (32.8%)	21 (34.4%)
Reliable improvement	34 (65.4%)	29 (55.8%)	37 (63.8%)	38 (62.3%)
Above CSC cutoff pre	41 (78.8%)	51 (98.1%)	48 (82.8%)	61 (100.0%)
RC, above CSC cutoff pre and post (i.e., RC but not CSC) [a]	8/41 (19.5%)	23/51 (45.0%)	10/48 (20.8%)	27/61 (44.3%)
RC, above CSC cutoff pre, below CSC post (i.e., CSC) [b]	22/41 (53.7%)	6/51 (11.8%)	24/48 (50.0%)	11/61 (18.0%)
% Treatment completers achieving CSC	22/52 (42.3%)	6/52 (11.5%)	24/58 (41.4%)	11/61 (18.0%)

Note. RU = research unit, CMHC = community mental health clinic, RC = reliable change (improvement), CSC = clinically significant change, pre = pre-treatment, post = post treatment.

[a] Denominator = number above the CSC cutoff at pre-treatment. Numerator = number who achieved RC but scored above the CSC at post-treatment.

[b] Denominator = number above the CSC cutoff at pre-treatment. Numerator = number who achieved RC and scored below the CSC at post-treatment.

Table 5

Multiple Linear Regressions Analyses Predicting Post-Treatment SPS and SIAS Scores

Criterion	Predictors	R^2	B	SE B	β	*t*	Part *r*
Post- SPS	Age	.35**	-.08	.09	-.07	-.88	-.07
	Gender		.93	2.29	.03	.41	.03
	Pre-treatment SPS		.49	.08	.55	5.90***	.47
	Medication use		-3.74	2.40	-.14	-1.56	-.12
	Depressive disorder		4.40	2.80	.15	1.57	.12
	Number of diagnoses		5.66	1.79	.32	3.15**	.25
	LIS score		-.19	.16	-.11	-1.16	-.09
Post- SIAS	Age	.35**	-.02	.11	-.02	-.19	-.02
	Gender		.20	2.50	.01	.08	.01
	Pre-treatment SPS		.65	.12	.54	5.43**	.43
	Medication use		-3.03	2.66	-.10	-1.14	-.09
	Depressive disorder		1.12	3.13	.04	.36	.03
	Number of diagnoses		4.29	1.98	.22	2.16*	.17
	LIS score		-.01	.19	-.01	-.05	-.01

Note. SIAS = Social Interaction Anxiety Scale, SPS = Social Phobia Scale.

*$p < .05$ **$p < .01$ ***$p < .001$