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ORIGINAL ARTICLE

# Feasibility of an Intensive, Disorder-Specific, Group-Based Cognitive Behavioural Therapy Intervention for Adolescents with Social Anxiety Disorder

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## Abstract

This study examined the preliminary acceptability and efficacy of an intensive, group-based, disorder-specific cognitive behavioural therapy (CBT) intervention for adolescents with social anxiety disorder (SAD). Fourteen Australian adolescents with SAD (78.6% female, *M* age = 13.93 years) and their parents completed the program plus measures of treatment satisfaction, and provided feedback. Clinical interviews and surveys were administered pre-treatment, post-treatment, and at 6-month follow-up to determine diagnostic status and assess related variables. Post-treatment satisfaction scores were very high for adolescents and parents. Post-treatment, 32.3% of participants no longer met criteria for SAD diagnosis, increasing to 42.9% at follow-up. Participants showed sizeable reductions in comorbid diagnoses, significant improvements in global functioning, social anxiety symptoms, and internalising symptoms from pre- to post-treatment (maintained at follow-up), and significant improvements in social skills and social competence from pre-treatment to follow-up. This study supports the use of an intensive CBT program for adolescents with SAD.

**Keywords** Adolescent psychopathology · Social anxiety disorder · Social phobia · Cognitive behavioural therapy · Psychotherapy

Social anxiety disorder (SAD) is characterised by intense fear or anxiety about social situations in which the individual is exposed to possible scrutiny and negative evaluation by others [1]. SAD is a common disorder, with lifetime prevalence rates of 8.6% in Western countries [2], and it is associated with significant impairment in social, emotional, and academic functioning [3, 4]. Youth SAD is often treated with generic cognitive-behavioural therapy (CBT) anxiety programs that include techniques such as exposure, relaxation and cognitive restructuring to target avoidance, physiological arousal, and threat-based thinking errors [5]. However, there is evidence that, compared to youth with other anxiety disorders, those with SAD do not respond as well to generic CBT. Children with SAD are almost twice as likely as children with other anxiety diagnoses to retain their diagnosis following treatment with generic CBT for anxiety [6–8]. Other authors have reported similarly poor treatment outcomes for adolescents with SAD relative to adolescents with other anxiety disorders [9, 10], including when CBT is supplemented with pharmacology [11].

Numerous authors [5, 11–14] have suggested that poorer treatment response for young people with SAD is likely due to significant causal and maintaining factors specific to SAD remaining unaddressed in generic CBT programs. For example, maladaptive thoughts about the self being deficient or flawed, attention biases such as self-focused attention and hypervigilance towards social threat, anticipatory anxiety and post-event rumination, and poor social skills and social competence that limit social success, appear to be important factors associated with the onset and maintenance of SAD [5, 15, 16], yet these are not addressed in generic CBT programs. Supporting this argument, disorder-specific CBT interventions that target disorder-specific factors have achieved notably higher remission rates [13, 17–27].

While disorder-specific interventions appear effective, few adolescents with SAD access psychological treatment of any kind. One large-scale survey found that despite a

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primarily adolescent onset [28], the mean age at which individuals with SAD first receive treatment is 27.2 years. Furthermore, only 8.5% [2] to 13.2% [29] of adolescents with SAD have had any contact with any professional regarding their social fears. Treatment programs only being conducted during school/work hours and a lack of access to appropriate mental health services [30], as well as financial costs associated with treatment programs [29, 31], and long wait-lists [32] have all been suggested as potential barriers to treatment access. Intensive CBT programs that contain the same content as traditional CBT programs, but deliver it over a more condensed period of time, have been proposed as a potential solution to low access by reducing time and financial commitments, being more convenient in terms of busy family schedules, and reducing drop-out in families with poor motivation by decreasing the duration of commitment [33, 34]. Importantly, there is evidence to suggest that intensive treatments are no less effective than standard delivery formats for anxiety disorders, showing success in adolescents with panic disorder and agoraphobia [35–37], obsessive–compulsive disorder [38–41], and specific phobias [33, 42–44].

Although research examining intensive interventions for adolescents with SAD is yet to be conducted, two studies have evaluated intensive CBT programs for SAD with children. In the first study, Gallagher, Rabian and McCloskey [45] randomly allocated 23 children aged 8–11 years to either an intensive group CBT program consisting of three x three-hour sessions over three weeks, or a wait-list control group. Children in the treatment group showed significant decreases in social anxiety symptoms, general anxiety symptoms, and SAD severity, from pre-treatment to follow-up. Based on child responses, 83.3% of children in the treatment group met criteria for SAD pre-treatment, decreasing to 41.7% at post-treatment and 16.7% at 3-week follow-up. Based on parent responses, 91.7% of children in the treatment group met criteria for SAD at pre-treatment, decreasing to 58.3% at post-treatment and 50% at 3-week follow-up. Proportions of diagnoses for children in the wait-list control group did not significantly change over time. In the second study examining intensive CBT for SAD in children, Donovan, Cobham, Waters and Occhipinti [46] randomised 40 children aged 7–12 years into either an intensive group CBT program involving four x three-hour sessions over three weekends, or a wait-list control group. Compared to the control group, children in the treatment condition experienced a significantly greater decrease in diagnostic severity ratings, SAD symptoms, and internalising symptoms, as well as a significantly greater increase in overall functioning and social competence, from pre- to post-treatment. At post-treatment, 52.4% of children in the treatment group compared to 15.8% of children in the control group no longer met criteria for their SAD diagnosis. By 6-month follow-up, 76.9% of treatment children no longer met criteria for their SAD diagnosis.

Previous research has demonstrated that disorder-specific compared to generic CBT treatment is superior in treating young people with SAD. Research has also demonstrated that intensive treatment programs can be effective for a range of adolescent anxiety disorders, and may carry additional benefits for increasing treatment access, which is particularly low in youth with SAD. However, to date, research has not yet examined an intensive, disorder-specific CBT program for adolescents with SAD. The current study therefore aimed to evaluate the acceptability and preliminary efficacy of an intensive, group-based, disorder-specific CBT intervention for adolescents with SAD through a small pilot open trial. Feasibility trials such as these provide information that can be used to determine the potential worth of a treatment approach and to improve the protocol, even in the absence of a control or comparison group. The end goal is to inform larger scale future research, such as randomised controlled trials, on ways to improve treatment uptake and efficacy for this population.

Acceptability of the intervention was of primary interest and was expected to be high, as indexed by adolescent and parent satisfaction ratings. It was also hypothesised that the number of adolescents who met criteria for SAD would decrease by post-treatment, and that there would be significant decreases in SAD diagnostic severity, social anxiety symptoms, and internalising symptoms, as well as significant increases in social skills and social competence, from pre- to post-treatment, with gains being maintained or improved upon at 6-month follow-up. Finally, it was expected that the number of comorbid diagnoses would decrease from pre- to post-treatment.

## Method

### Participants

Fifteen adolescents diagnosed as having primary SAD were recruited for the study, however one participant withdrew from the program after Session 2. All following analyses in this paper are based on the 14 completing participants. These participants' (78.6% female, *M* age = 13.93, *SD* 1.14, range 12–16) demographic details are provided in Table 1. The majority of adolescents had parents who were married, had a qualification from a technical college, and identified as Caucasian. The majority of adolescents lived with both parents, were born in Australia, and spoke primarily English at home. One participant reported having learning difficulties as well as a diagnosis of inattentive attention-deficit hyperactivity disorder for which they were medicated. As noted, all but one participant (6.7%) attended the program through

**Table 1** Participant demographic details

| | | N (%) |
|---|---|---|
| Parent marital status | | |
| Married | | 10 (71.4%) |
| Divorced | | 2 (14.3%) |
| De facto | | 1 (7.1%) |
| Single/never married | | 1 (7.1%) |
| Adolescent lives with | | |
| Both parents | | 10 (71.4%) |
| Mother | | 3 (21.4%) |
| Stepfather | | 1 (7.1%) |
| Parent level of education | | |
| Technical college | | 6 (42.9%) |
| Bachelor's degree | | 5 (35.7%) |
| Did not complete year 12 | | 1 (7.1%) |
| Postgraduate degree | | 1 (7.1%) |
| Other | | 1 (7.1%) |
| | Parent N (%) | Adolescent N (%) |
| Ethnicity | | |
| Caucasian | 10 (71.4%) | 11 (78.6%) |
| Asian | 4 (28.6%) | 2 (14.3%) |
| Mixed | | 1 (7.1%) |
| Location of birth | | |
| Australia | 9 (64.3%) | 12 (85.7%) |
| Asia | 2 (14.3%) | 1 (7.1%) |
| New Zealand | 2 (14.3%) | |
| Other | 1 (7.1%) | 1 (7.1%) |

to the final session. This supports the earlier suggestion that intensive treatments may facilitate low attrition rates. This participant was female, lived with both parents, had a mixed ethnicity, and was aged 13 years.

To be eligible for the program, youth were required to be aged 12–17 years old, and to have a primary diagnosis of SAD as determined by an administrator's clinical severity rating (CSR) of at least 4 (on a 0 to 8 scale) according to the Anxiety Disorders Interview Schedule for DSM-IV: child and parent versions (ADIS-C/P)[47]. Participants with a pervasive developmental disorder, significant intellectual or learning disability, significant behavioural disorder, current suicidal ideation or suicidal behaviours, a depressive disorder with a CSR of 6 or more, or who were currently receiving pharmacological or psychological treatment for SAD elsewhere, were not eligible to participate in the study and were provided with referrals to appropriate support services.

The mean CSR score for SAD at pre-treatment was 6.89 (*SD* 0.41), suggesting that the participants had very high levels of social anxiety overall. All participants had at least two comorbid disorders at pre-treatment, with the majority of participants also holding diagnoses of generalised anxiety disorder (92.9%) and/or specific phobia (71.4%). Four participants (28.6%) had two comorbid diagnoses, four participants (28.6%) had three comorbid diagnoses, five participants (35.7%) had four comorbid diagnoses, and one participant (7.1%) had five comorbid diagnoses. Specific information regarding diagnoses and comorbidities is presented in Table 2.

## Design

This study was an open trial with a repeated measures design (pre-treatment, 6-weeks post-treatment, and 6-month follow-up). At each assessment point, both the adolescent and their parent/guardian completed a battery of online questionnaires as well as a diagnostic interview over the telephone with an interviewer blind to diagnostic status and severity.

## Measures

### Treatment Satisfaction

Adolescents and parents completed a feedback survey upon completion of the program that measured satisfaction with

**Table 2** Proportions and comorbidities of disorder diagnoses across time points

| Disorder | Pre-treatment diagnoses (%), N = 14 | Post-treatment diagnoses (%), N = 12 | Follow-up diagnoses (%), N = 14 |
|---|---|---|---|
| Social anxiety disorder | 14 (100%) | 8 (66.7%) | 8 (57.1%) |
| Generalised anxiety disorder | 13 (92.9%) | 3 (25%) | 5 (35.7%) |
| Specific phobia | 10 (71.4%) | 4 (28.6%) | 2 (14.3%) |
| Separation anxiety disorder | 4 (28.6%) | 2 (16.7%) | 1 (7.1%) |
| Major depressive disorder | 2 (14.3%) | 0 (0%) | 1 (7.1%) |
| Dysthymia | 1 (7.1%) | 1 (8.3%) | 1 (7.1%) |
| Posttraumatic stress disorder | 1 (7.1%) | 0 (0%) | 0 (0%) |
| Panic disorder | 0 (0%) | 0 (0%) | 0 (0%) |
| Agoraphobia | 0 (0%) | 0 (0%) | 0 (0%) |
| Comorbid diagnoses | | | |
| None | 0 (0%) | 1 (7.1%) | 3 (21.4%) |
| One | 0 (0%) | 7 (50%) | 6 (42.9%) |
| Two | 4 (28.6%) | 2 (14.3%) | 4 28.6%) |
| Three | 4 (28.6%) | 1 (7.1%) | 1 (7.1%) |
| Four | 5 (35.7%) | 1 (7.1%) | 0 (0%) |
| Five | 1 (7.1%) | 0 (0%) | 0 (0%) |

the treatment program and its components. An adolescent version (9 items) and a parent version (11 items) were developed, based on the satisfaction with treatment measure used by Donovan, Cobham, Waters and Occhipinti [46]. Items were rated on a 5-point Likert scale from 1 (Not at all) to 5 (Extremely), reflecting the degree to which responders agreed with each statement. Items were averaged to provide a mean score from 1 to 5, with higher scores indicating greater satisfaction with the program (called "Teens Connect"). Each feedback survey also included three open questions: "What parts did you like most about Teens Connect?", "Which parts of Teens Connect did you find the most valuable for decreasing your (teen's) anxiety?", and "Is there anything you would change or improve about Teens Connect?". In the current study, Cronbach's alphas were $\alpha = 0.85$ for adolescent ratings and $\alpha = 0.81$ for parent ratings.

### Clinical Diagnostic Status and Severity

The ADIS-C/P [47] was used to determine clinical diagnostic status of participants. The ADIS-C/P is a semi-structured diagnostic interview suitable for identifying anxiety and related disorders in accordance with the DSM-IV [48]. The ADIS-C/P provides child-, parent-, and administrator-based clinical severity ratings (CSRs) for each disorder ranging from 0 to 8, with a CSR of 4 representing clinical-level diagnostic severity. All interviews were conducted separately over the phone. For all purposes, the administrator CSR rating was used, which was determined based on the combined child and parent responses and using clinical judgement. A random 20% of interviews were recorded and rated by an interviewer blind to diagnostic status and severity in order to determine administrator-based CSR inter-rater reliability (kappa = 0.91).

### Overall Level of Functioning

The Children's Global Assessment Scale (CGAS) [49] is a clinician-rated instrument used to assess overall level of functioning. Scores on the CGAS may range from 1 to 100, with higher scores indicating greater functioning. The CGAS has demonstrated high inter-rater reliability (0.84) and a 6-month test–retest reliability of 0.85 [49]. In the current study, the inter-rater reliability for recorded interviews was $r = 0.89$.

### Social Anxiety Symptoms

The social phobia and anxiety inventory-brief (SPAI-B) [50] is an adolescent, self-report questionnaire that assesses cognitive, behavioural, and somatic symptoms of SAD. The SPAI-B consists of 23 items that are rated on a 5-point Likert scale from 0 (Never) to 4 (Always). Item 15 is scored as the average of four sub-items assessing cognitive symptoms, and item 16 is scored as the average of five sub-items assessing somatic symptoms. The total score is obtained by summing all items, with a possible range of 0–64, and higher scores reflecting greater social anxiety. The SPAI-B has demonstrated high internal consistency ($\alpha = 0.96$), high test–retest reliability over six months ($r = 0.60$), and correlates strongly with the original SPAI (r = 0.88) [50] in Spanish-speaking

adolescents. In the current study, the internal consistency of the SPAI-B was α = 0.93.

### Internalising Symptoms

The Revised Children's Anxiety and Depression Scale (RCADS) [51] is a questionnaire with youth- and parent-report versions that measure symptoms related to SAD, panic disorder, separation anxiety, generalised anxiety, obsessive–compulsive disorder, and major depressive disorder. The RCADS consists of 47 items rated on a 4-point Likert scale from 0 (Never) to 3 (Always), reflecting the frequency of various internalising symptoms. The Total Internalising Scale (range 0–141) was computed for the current study by summing scores on all items. The RCADS has shown high internal consistency, convergent and divergent validity, and discriminant validity in both clinical and non-clinical samples for the youth-report version [52, 53] and the parent-report version [54, 55]. In the current study, internal consistency values for the total scores were α = 0.95 for adolescents and α = 0.94 for parents.

### Social Skills

The Social Skills Questionnaire (SSQ) [56] was used to assess adolescent social skills. Both child/adolescent and parent versions of the SSQ include 30 items rated on a 3-point Likert scale from 0 (not true) to 2 (mostly true). Scores are summed to produce a total score that may range from 0 to 60, with higher scores reflecting a higher level of social skills. The SSQ has demonstrated high internal reliability (α = 0.85–0.91) [57] and is sensitive to treatment effects [27]. In the current study, internal consistency values for the total scores were α = 0.87 for adolescent ratings and α = 0.86 for parent ratings.

### Social Competence

The social competence with peers questionnaire (SCPQ) [56] was used to assess adolescent social competence. The child/adolescent version of the SCPQ includes 10 items, while the parent version of the SCPQ contains 9 items. Items are rated on a 3-point Likert scale from 0 (not true) to 2 (mostly true). Items are summed to produce a total score that may range from 0 to 20 (child/adolescent scale) or 0 to 18 (parent scale), with higher scores indicating higher social competence. The SCPQ has demonstrated high internal reliability (α = 0.82–0.93) [46]. In the current study, the Cronbach's alphas for the total scores were α = 0.89 for adolescents and α = 0.85 for parents.

## Procedure

Ethical approval for the study was granted by the Griffith University Human Research Ethics Committee (GU Ref No: 2018/326). Participants were recruited through advertisements on Facebook and through local schools. Interested families were invited to contact the researchers, after which broad inclusion and exclusion criteria were assessed over email or telephone, with a subsequent online screener survey to determine likely presence of SAD. Digital copies of consent forms and information sheets were sent to participants, and only families in which both the parent and child provided informed consent went on to complete the semi-structured diagnostic interview (ADIS-C/P) over the telephone at a time convenient for them. ADIS interviews were conducted by the first author, who received ongoing supervision from the third author, an experienced clinical psychologist. Eligible participants were asked to complete the online pre-treatment survey battery, and were then placed into one of four treatment groups depending on time of application and availability.

### Treatment Program

The treatment program was designed by the authors as an intensive, group-based, disorder-specific CBT intervention for adolescent SAD. The program consists of 5 × 3-h sessions delivered over four consecutive weekends (with two sessions on the first weekend). All sessions were delivered at the Griffith University Psychology Clinic, except Session 4 which took place at a shopping centre. The program is group-based, with three to four adolescents in each group, and sessions are conducted by two trained facilitators who, for this study, consisted of Clinical Psychology postgraduate students and the first author. Session content followed a manual with prescribed activities. All facilitators received three hours of training and weekly supervision by the third author.

Table 3 outlines the strategies and content presented in each session. The program includes psychoeducation, cognitive restructuring, and in-vivo exposure, as well as disorder-specific treatment components including social skills training, and strategies for reducing self-focused attention, anticipatory anxiety, and post-event rumination. Activities were formatted such that the examples worked through in sessions were applicable to teenagers, and with a focus on increasing ability to act independently from parents, improving peer relationships, and increasing school participation. Fifteen-minute breaks were scheduled at the end of the first and second hour of each session (other than Session 4) to reduce fatigue and improve concentration. Parents attended a 15-min summary at the end of Sessions 1–4, and a 1-h summary concluding Session 5. Participants completed

**Table 3** Summary of session content in the teens connect program

| Session number | First hour content | Second hour content | Third hour content |
|---|---|---|---|
| Session 1 | Introductions | What are social situations? | Introduction to the ABC Model of thoughts and feelings |
| | Ice-breaker tasks | Social skills: core skills (micro-skills) roleplay demonstration and practice in rotating pairs | Activities linking thoughts and feelings |
| | Rules and expectations | | Anxious body signs and relaxation strategies |
| | What is teens connect? | | Parent Summary Session |
| | Psychoeducation: what is social anxiety disorder? | | |
| Session 2 | Review of yesterday and homework | Unhelpful versus helpful thoughts | Psychoeducation: the avoidance-anxiety cycle and |
| | Social skills: conversation skills roleplay demonstration and practice in rotating pairs | Anticipatory anxiety and post-event rumination activities | How does exposure work? |
| | | Unhelpful thinking styles | Making an exposure ladder |
| | | Activities comparing the outcomes of different thoughts | Parent summary session |
| Session 3 | Review of last session and homework | Social skills: friendship skills roleplay demonstration and practice in rotating pairs | Steps of reality checking (cognitive restructuring) |
| | Exposure ladder reflection and modifications | | Practice implementing reality checking |
| | Psychoeducation: self-focused attention and strategies | | Coping statements |
| | | | Parent summary session |
| Session 4 | Review of last session and homework | In-vivo exposure session at shopping mall | |
| | Social skills: assertiveness skills roleplay demonstration | Lunch | |
| | "I statements" activities | Parent summary session | |
| Session 5 | Teens connect content review | Putting it all together | Speeches from adolescents |
| | | What do I do now? | Conclusion |
| | | Maintenance and relapse prevention tips | Feedback gathered from participants |

Participants also completed prescribed homework between each session

prescribed homework in between sessions and received a Workbook that contained session activities and homework tasks.

The in-vivo exposure excursion for Session 4 took place at a shopping centre. The first hour was conducted in a private study room booked at the public library, while the following 2 h were dedicated to exposure opportunities and ended with adolescents buying lunch for themselves to eat with the group. Adolescents were encouraged and supported by facilitators to engage in as many anxiety-provoking situations as possible. Facilitators remained close by the participants in order to propose exposure opportunities, encourage adolescents to confront them, and consolidate learning by talking through each situation afterwards, but otherwise did not participate in the opportunities in order to avoid the use of safety behaviours. Examples of situations adolescents participated in included asking store employees where to find items, trying out free products in stores, asking for advice on gifts from employees, politely greeting strangers, dropping items in crowds, moving past other people on escalators, and in one case, a participant playing piano in public.

## Data Analysis

Mixed linear model analyses were performed to analyse changes in functioning, symptoms, social skills and social competence, from pre-treatment to post-treatment and follow-up. Each analysis compared scores for one variable across the three time points to see where scores at these time points were significantly different to each other. Note that a Dunn-Sidàk correction was applied to analyses only on a per-model basis (i.e., $p$ values are modified per the three time-based comparisons made for each variable). Descriptive information about treatment satisfaction and CSR scores were also obtained.

## Results

### Assessment Completion

All 14 adolescents and their parents who finished the program also completed the ADIS-C/P and survey measures prior to the treatment program. At post-treatment, 12 families (85.7%) completed the ADIS-C/P, and 13 parents (92.9%) and 12 adolescents (85.7%) completed the survey measures. At 6-month follow-up, all 14 families completed the ADIS-C/P, and 11 parents (78.6%) and 8 adolescents (57%) completed the survey measures.

### Program Acceptability

All 14 participants who completed the program also completed the relevant treatment satisfaction measure. The average treatment satisfaction score was 4.33 (*SD* 0.49) for adolescents and 4.47 (*SD* 0.35) for parents (of a possible 5), indicating that the program was very well received by both adolescents and parents. The most common themes of qualitative feedback are summarised in Table 4. Participants reported enjoying working with the group and facilitators, the in-vivo exposure session, and learning the different strategies designed to help them manage their anxiety. Participants reported that the in-vivo exposure session was the most valuable for decreasing anxiety, followed by learning about cognitive processes and social skills practice. Feedback for improvement was to integrate more in-vivo exposure, provide a different location/time of day as some participants still had to travel long distances, include more practice with social skills, and add follow-up sessions to check in and provide assistance where needed.

### Diagnostic Outcomes

The proportions of diagnoses present at pre-treatment, post-treatment, and follow-up are reported in Table 2. There was a decrease in the proportion of adolescents who met criteria for an SAD diagnosis over time, with 33.3% no longer meeting criteria for diagnosis by post-treatment, and 42.9% by 6-month follow-up. There was a similar decrease in the proportion of GAD diagnoses over time. At pre-treatment, 92.9% of participants had a diagnosis of GAD, decreasing to 25% at post-treatment and 35.7% at 6-month follow-up.

**Table 4** Written feedback about the teens connect program from adolescents and parents

| | Adolescent frequency (N = 14) | Parent frequency (N = 14) |
|---|---|---|
| What parts did you like most about teens connect? | | |
| Working with the group members/facilitators; friendly and supportive atmosphere | 7 (50%) | 6 (43%) |
| The exposure excursion to the shopping centre | 5 (36%) | 9 (64%) |
| Learning different strategies to overcome social fears | 5 (36%) | 5 (36%) |
| How well things were explained | 2 (14%) | 2 (14%) |
| The exposure ladder | 1 (7%) | 2 (14%) |
| The activities done in session to demonstrate strategies | 4 (29%) | |
| Running in an intensive format on weekends | | 8 (57%) |
| Summaries of sessions for parents/parent info sheets | | 3 (21%) |
| Running in small groups | | 2 (14%) |
| Which parts of teens connect did you find the most valuable for decreasing your (teen's) anxiety? | | |
| Exposure ladder/Garden City excursion | 8 (57%) | 4 (29%) |
| Unhelpful thinking styles/reality checking | 5 (36%) | 5 (36%) |
| Social skills learning and practice | 5 (36%) | 2 (14%) |
| Understanding how social anxiety works | 3 (21%) | 2 (14%) |
| Being with group members/support from facilitators | 1 (7%) | 1 (7%) |
| All of it | | 6 (43%) |
| Is there anything you would change or improve about teens connect? | | |
| More hands-on experience like the Garden City excursion | 2 (14%) | 2 (14%) |
| Location/time of day | 1 (7%) | 2 (14%) |
| More attention to and practice with social skills | 2 (14%) | |
| A follow-up session sometime later to check in on progress | | 2 (14%) |

### Survey Outcomes

The analyses examining changes in global functioning, SAD CSR scores, SAD symptom severity, internalising symptom severity, social skills, and social competence over time are reported in Table 5. As shown in Table 5, compared to pre-treatment scores, there were significant improvements at post-treatment and follow-up on global functioning (CGAS), SAD, CSR, social anxiety symptoms (SPAI-B), and internalising symptoms (RCADS). Scores of global functioning, social anxiety symptoms, and internalising symptoms were not significantly different between post-treatment and follow-up, suggesting maintenance of treatment effects. The difference between CSR scores at post-treatment and follow-up was marginally significant at $p = 0.051$. Social skills (SSQ) and social competence (SCPQ) improved significantly from pre-treatment to follow-up, though only on adolescent ratings. There were no significant improvements on parent-rated social skills and social competence, except for a significant improvement in parent-rated social competence between post-treatment and follow-up.

## Discussion

The current study aimed to determine the preliminary acceptability and effectiveness of an intensive, disorder-specific, group-based CBT intervention for adolescents with SAD. It was predicted that program acceptability would be rated as high by adolescents and parents and that participants would demonstrate a decrease in SAD diagnoses. It was also hypothesised that participants would demonstrate improvements in the secondary outcomes of SAD diagnostic severity, social anxiety symptoms, internalising symptoms, social skills, and social competence. Finally, comorbid diagnoses were expected to decrease following treatment. These predictions were largely supported, as participants provided very high ratings of treatment satisfaction and acceptability, and 42.9% of participants no longer met criteria for their SAD diagnosis by 6-month follow-up. Additionally, there was a significant decrease in SAD diagnostic severity ratings following treatment, with this decrease maintained at follow-up. Participants demonstrated significant improvements in global functioning, social anxiety symptoms, and overall internalising symptoms at post-treatment, and these improvements were maintained at follow-up. Participants also showed improvements in social skills and social competence on adolescent ratings. Finally, there was a notable decrease in comorbid diagnoses.

The primary aim of this pilot study was to determine the acceptability of an intensive, disorder specific program for SAD in adolescents, as such a program had not previously been examined. Treatment tolerance was high, with all but one participant completing the program in full. This supports the earlier suggestion that intensive treatments may help in reducing participant attrition due to lower durations of commitment than required in standard treatment programs [34]. The program was also extremely well received by adolescents and parents, with very high scores on the treatment satisfaction measure. Specifically, of a possible 5 on ratings of satisfaction, adolescents scored 4.33 and parents scored 4.47. A similar version of the satisfaction measure was used by Donovan, Cobham, Waters and Occhipinti [46] assessing an intensive program for childhood SAD, and found ratings averaging 3.83 for parents and 3.67 for children, which, although high, were not as strong as those found in the present study, supporting the viability of an intensive program format in treating adolescent SAD.

When providing feedback, many parents suggested that they would not have been able to attend the program if it

**Table 5** Mixed linear model analyses testing changes in functioning, symptom severity, social skills, and social competence over time

| Dependent variable | Main effect of time, F (df) | Pre-treatment M (SD) | Post-treatment M (SD) | Follow-up M (SD) |
|---|---|---|---|---|
| CGAS | 16.35 (2.21)*** | 53.79 (6.04)[ab] | 67.40 (15.12)[a] | 76.23 (14.88)[b] |
| SAD CSR | 31.16 (2.24)*** | 6.86 (0.41)[ab] | 4.42 (1.98)[a] | 3.29 (1.70)[b] |
| SPAI-B (T) | 9.59 (2.18)** | 45.15 (9.37)[ab] | 29.69 (9.21)[a] | 32.46 (15.41)[b] |
| SSQ (T) | 4.71 (2.18)* | 41.14 (8.62)[b] | 47.42 (8.58) | 48.13 (7.55)[b] |
| SSQ (P) | 2.34 (2.22) | 40.64 (8.79) | 45.31 (8.62) | 43.27 (10.27) |
| SCPQ (T) | 4.98 (2.18)* | 9.57 (4.54)[b] | 12.17 (4.15) | 11.88 (4.09)[b] |
| SCPQ (P) | 4.49 (2.22)* | 7.79 (3.98) | 7.54 (3.93)[c] | 10.36 (5.10)[c] |
| RCADS total (T) | 9.83 (2.18)** | 61.71 (22.65)[ab] | 39.50 (16.80)[a] | 37.87 (21.14)[b] |
| RCADS total (P) | 6.73 (2.22)** | 49.64 (21.15)[ab] | 36.00 (17.27)[a] | 41.27 (18.99)[b] |

*CGAS* Children's Global Assessment Scale, *SAD* social anxiety disorder, *CSR* clinical severity rating, *SPAI-B* social phobia and anxiety inventory-brief, *SSQ* social skills questionnaire, *SCPQ* social competence with peers questionnaire, *RCADS* Revised Children's Anxiety and Depression Scale, (*T*) teen rated, (*P*) parent rated

Asterisks denote a significant main effect of time across time points, with * < 0.05, ** < 0.01, *** < 0.001. Where time points share the same superscript, this indicates they were significantly different to each other on that measure with $p < 0.05$

were not delivered in the intensive weekend format, underscoring the notion that a program of this type may indeed increase treatment access rates because they are easier for busy families to attend outside of work hours. Participants and their families also provided feedback for future iterations of a program. In particular, the integration of follow-up "booster" sessions several months after conclusion of the program, such as those used in the program by Spence [56], would have provided accountability to participants and potentially encouraged them to continue with the implementation of strategies they had learnt. Booster sessions would also provide an opportunity to address any issues that had arisen since completing the program.

Many participants reported enjoying the in-vivo exposure which involved an excursion to a local shopping complex. In generic programs, exposure is often set as homework rather than conducted in-session. However, it appears that in-vivo exposure sessions can provide participants with a significant "head-start" in confronting their social fears and provide a means to accelerate the building of social self-efficacy, as they can be encouraged and supported by facilitators to engage in particularly challenging social encounters. This was especially the case in our program as the intensive format enabled participants to confront a host of varying social situations in-vivo over the span of two hours. This provided a unique opportunity in which participants could develop a great deal of self-efficacy in a short span of time. Comments made at the time by participants suggested that they had "surprised" and "impressed" themselves, which could reflect the particular worth of intensive exposure excursions.

At follow-up, 42.9% of participants who completed the program no longer met criteria for their SAD diagnosis. This is a superior result to many generic treatment programs such as the one by Hudson et al. [7], who found that 22.3% of youth with primary SAD no longer met criteria for their diagnosis post-treatment, increasing to 30.7% at 3–12-month follow-up. However, the proportion of diagnosis-free participants at the end of this study was not as high as those found in disorder-specific, traditional length programs that tend to hold 12 to 24 sessions over 12-week periods. For example, Spence, Donovan and Brechman-Toussaint [27] found that 58.0–87.5% of children no longer met criteria for their SAD diagnosis following disorder-specific treatment, and Beidel, Turner and Young [19] found that 85% of SAD children no longer met criteria for their primary SAD diagnosis after disorder-specific treatment. The remission rates found in this study were also not as high as those found in the intensive, disorder-specific programs for children with SAD conducted by Donovan, Cobham, Waters and Occhipinti [46] (76.9%) and Gallagher, Rabian and McCloskey [45] (50.0–83.3%). The lower rates of diagnostic remission may at least partially reflect the particularly high severity of SAD evident in the current sample. The mean CSR for SAD assigned to participants prior to treatment was 6.89 on the 0–8 scale, where an 8 constitutes an inability to function in daily life as a result of the disorder [47]. Participants in previous SAD-specific studies had notably lower mean SAD CSRs: 5.40 (*SD* 1.1) in the Beidel, Turner and Young [19] study; 5.81 (*SD* 0.75) in the Donovan, Cobham, Waters and Occhipinti [46] study; 5.08 (*SD* 1.31) in the Gallagher, Rabian and McCloskey [45] study; and 4.88–5.35 (*SDs* 0.86–1.03) in the Spence, Donovan and Brechman-Toussaint [27] study. To achieve remission, the CSR must fall below 4. Therefore, participants in the current study needed to make greater improvements before reaching this threshold, which may have resulted in lower remission rates. Taken together with the participant feedback discussed above, it appears that intensive programs might require regular follow-up booster sessions to achieve stronger outcomes for more severely anxious youth. Alternatively, youth with particularly severe disorders may achieve superior remission in longer, traditional modes of treatment, whereas less severe youth might benefit from an intensive format.

Concerning secondary outcomes, adolescents improved significantly on global functioning, social anxiety symptoms, and internalising symptoms from pre-treatment to post-treatment. Furthermore, these gains remained significant at 6-month follow-up, suggesting the program was effective in generating positive and persistent change, at least in the medium term. Participants also demonstrated significant improvements in social skills and social competence according to adolescent ratings, although these differences only emerged between pre-treatment and follow-up, perhaps reflecting that social skills require time and practice in order to improve. Similarly, it is possible that reductions in social anxiety at post-treatment enabled adolescents to more confidently practice and improve their social skills and competence.

The presence of comorbid diagnoses following treatment was also investigated. Generalised anxiety disorder (GAD) and SAD are often highly comorbid [58], and there was a particularly high level of comorbidity between the two disorders in this sample, with 92.9% of participants also holding a GAD diagnosis pre-treatment. At follow-up, only 35.7% of participants retained their GAD diagnosis, suggesting that the program was effective in reducing both SAD and GAD. Previous research has supported a link between SAD and GAD, with Hearn, Donovan, Spence and March [59] establishing that many of the maladaptive cognitive symptoms and processes underpinning GAD are related to SAD severity in young people. Furthermore, Hearn, Donovan, Spence and March [60] found that, in line with the results of the present study, adolescents receiving online treatment for SAD demonstrated significant decreases in many of the maladaptive cognitive symptoms and processes underpinning GAD, despite not directly targeting them in treatment.

GAD and SAD seem to share common underlying cognitive processes, and strategies that reduce repetitive negative thoughts and modify dysfunctional thought patterns can help alleviate symptoms for both disorders, as found in the current study.

This study had a number of strengths. It was the first to evaluate an intensive program with adolescents diagnosed with SAD and utilised measures with strong psychometric properties and multiple informants (clinicians, parents, and adolescents). The program was also well tolerated, and all participants completed the final diagnostic interview, providing an accurate representation of disorder remission. Furthermore, the group-based nature of the program provided participants with exposure opportunities simply by attending sessions, in addition to particular exposure exercises being built into the program. Despite its strengths, however, this study also had a number of limitations. Most importantly, the sample size was small, there was some attrition for the secondary survey measures, and there was no control group. In order to firmly establish the acceptability and effectiveness of the program, future research should employ a randomised control trial design with a larger sample size and an appropriate control group. It also bears mentioning that this study's data collection and results were affected by the onset of COVID-19. Recruitment was cancelled due to lock-down, decreasing the planned sample size. Importantly, some of the post-treatment and most of the follow-up assessments occurred in the midst of isolation efforts and online schooling, which may have affected the results in unknown ways. It can be expected that without regular practice of social skills and social interactions with others, participants might have experienced reinstatement of fear in line with classical conditioning principles [61], in addition to the pressures and anxiety of dealing with the impact of COVID-19 itself. Though, it is possible that the treatment program equipped participants to better cope with stress and anxiety, and continue to connect with peers, during circumstances related to COVID-19. Alternatively, participants might have been happy to avoid social pressures and stay at home for a time, which might have artificially inflated their scores. Ultimately, the effects of COVID-19 on outcome measures are not able to be determined, and may have affected the participants in a variety of different ways.

Despite its limitations, the current study supports the potential efficacy of an intensive, group-based, disorder-specific intervention for treating adolescents with SAD. Such a delivery format may assist in reaching and retaining young people who might otherwise have difficulty accessing treatment. However, future research needs to build upon our preliminary findings by comparing this program to a wait-list or placebo control group in which normative symptom fluctuations could be better separated from treatment effects. Further, research could compare the program to an individualised intensive program, or a group program in a standard format, to identify the unique effects of the intensive format and the group format in affecting treatment outcomes. It may also be beneficial to examine outcomes of intensive treatments with the inclusion of subsequent booster sessions, and to compare treatment delivery formats for youth with varying SAD severity.

## Summary

Previous research has highlighted low treatment access in adolescents with SAD despite this being an important developmental period for intervention [28]. Intensive treatment formats have inherent benefits that can increase treatment accessibility for some families compared to traditional formats [33, 34]. Existing studies have shown the efficacy of intensive program formats when treating adolescents with a range of anxiety disorders [33, 35–44] and children with SAD [45, 46]. Drawing upon this research, the current study was the first to examine the acceptability and efficacy of an intensive, disorder-specific, group-based CBT program in adolescents with SAD. Fifteen Australian adolescents and their parents participated in this open trial of an intensive program consisting of $5 \times 3$-h sessions over four consecutive weekends. Participants completed assessments of treatment satisfaction, diagnostic presence and severity, global functioning, SAD symptom severity, internalising symptoms, social skills, and social competence at pre-treatment, post-treatment, and 6-month follow-up. Participants also provided feedback about the program.

Post-treatment satisfaction scores were very high for adolescents and parents, suggesting the program was well-received. Several parents noted they would not have been able to attend a program in a traditional format when providing feedback, highlighting the potential benefits of the intensive format. Post-treatment, 32.3% of participants no longer met criteria for an SAD diagnosis, increasing to 42.9% at follow-up, and participants also showed sizeable reductions in comorbid diagnoses. Participants demonstrated significant improvements in global functioning, social anxiety symptoms, internalising symptoms, social skills, and social competence across time points. The current results support the potential acceptability and efficacy of an intensive, group-based, disorder-specific CBT intervention for adolescents with SAD. It is important that research continues to investigate and improve treatment options for this common and debilitating anxiety disorder in young people, in order to prevent long-lasting adverse mental health trajectories.

## Declarations

**Conflict of interest** The authors declare that they have no conflict of interest.

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