

Diagnosis-Specific Group CBT Treating Social Anxiety in Adolescents: A Feasibility Study

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Abstract

Background: Social anxiety disorder (SAD) is one of the most common anxiety disorders among adolescents. It is associated with extensive distress and negative long-term consequences. Generic cognitive behavioral therapy (CBT) is one of the preferred treatments for anxiety disorders, but it has shown poorer outcome for adolescents with SAD than for other anxiety disorders.

Aim: As preparation for a randomized controlled trial the aim of the present study was to examine the feasibility of an adjusted diagnosis-specific CBT group intervention for adolescents with SAD, and provide preliminary information on adolescent and family outcomes.

Method: Thirteen adolescents (age 12-17 years) diagnosed with SAD received a group therapy version of the Cool Kids Anxiety Program, Social Enhanced (CK-E), a program developed at Macquarie University, Sydney, Australia. The treatment is a diagnosis-specific manualized CBT treatment for adolescents with SAD. Semi-diagnostic interviews and questionnaires were completed at baseline, post, 3-month follow-up and 1-year follow-up.

Results: Thirteen adolescents participated with no drop-outs. Most families attended all 10 intervention sessions. The families were generally satisfied with the treatment and would recommend it to others in need. Preliminary outcomes showed that participants had marked improvements in their anxiety symptoms and life interference, with significant medium to large baseline-post effect sizes durable at 1-year follow-up. Two of the adolescents were free of their SAD diagnosis at 3-month follow-up.

Conclusion: Results from this feasibility study indicate that the Danish-translated and revised version of Cool Kids Anxiety Program - Social Enhanced could be a feasible intervention for Danish adolescents with SAD. The intervention will be investigated further in a randomized controlled trial.

Keywords: Social anxiety disorder; Adolescent; Cognitive behavioral therapy; Feasibility study

Introduction

Social anxiety disorder (SAD) is one of the most common anxiety disorders in adolescents with 5-9% of adolescence between 13-18 years suffering from SAD (1-3). Studies have shown an increase in SAD from childhood through adolescence (3-5).

If left untreated SAD increases the likelihood of chronicity, loneliness, problems in relation to school activities, and risk of other anxiety disorders, depression and substance abuse (3, 4, 6-8). Adolescence can be regarded as a critical period in

treatment of SAD in order to avoid a chronic developmental course (9, 10). Thus, development of effective treatment for adolescents suffering from SAD is crucial.

Cognitive behavioral therapy (CBT) is the best-documented treatment for anxiety disorders in adolescence (11). Generic CBT programs for children and adolescents with anxiety disorders have shown substantial effects (12, 13). An evidence based generic CBT program is the Cool Kids Anxiety program (14, 15), which has shown large reduction in

anxiety symptoms (13, 16). However, recent studies indicate that adolescents with SAD have poorer outcomes following generic CBT, including Cool Kids, compared to adolescents with other anxiety disorders (12, 13, 17-19).

Several diagnosis-specific CBT programs for SAD have been developed (20-24), but to our knowledge only one study has made a direct comparison between diagnosis-specific CBT and generic CBT in treating adolescents with SAD (25). Ingul et al. (25) compared diagnosis-specific individual CBT treatment and generic group CBT treatment of adolescents with SAD. They found that individual diagnosis-specific CBT treatment was more effective than the generic group CBT in treating SAD in adolescent. The different formats of the two treatments limit, however, the conclusion as to the role of specific treatment ingredients.

There is considerable evidence for diagnosis-specific individual CBT for SAD among adults (10, 26). There is, however, no evidence of better results of individual CBT for SAD among children and adolescents (10, 27). Only a few studies have investigated individual versus group CBT, but in their meta-analysis, Yang et al. (27) found comparable results for individual ($g = 1.10$) and group formats ($g = 1.19$) of psychological interventions for SAD in children and adolescents. They therefore suggested that the group format might be cost-effective in treating adolescents with SAD.

The present study examines the feasibility of a diagnosis-specific group CBT program, the Cool Kids Anxiety Program, Social Enhanced (CK-E) which was developed at the Centre for Emotional Health at Macquarie University, Sydney, Australia. It is based on the Cool Kids Anxiety Program (14, 15), which is a manualized generic CBT program for anxiety disorders among children and adolescents consisting of 10 2-hour sessions. The children and adolescents participate with their parents. The Cool Kids Anxiety Program, Social Enhanced (CK-E) is based on Cool Kids but with additional techniques targeting cognitive and behavioral processes that are theorized to maintain SAD (28, 29). Originally, it was designed for individual treatment. To the best of our knowledge the CK-E in a group format has not been evaluated before.

Aim

Preparing for an upcoming randomized controlled trial, the main objective of this study was to examine the feasibility (i.e. attrition rate, session attendance, questionnaire completion rates, and treatment satisfaction) and the preliminary clinical outcome of the Danish version of the CK-E for adolescents with SAD conducted as group treatment.

Methods

Participants

The study took place at Centre for Psychological Treatment of Children and Adolescents (CEBU), a teaching and research facility at the Department of Psychology and Behavioral Sciences, Aarhus University, Denmark. Thirteen adolescents aged 12-17 with a primary diagnosis of SAD were included. We decided that running 3 groups with 4-5 adolescents in each group would be sufficient to get experience with running the group treatment program.

Inclusion criteria were: (a) adolescents between 12 and 17 years of age; (b) SAD as primary disorder according to the DSM-IV (APA, 1994). Exclusion criteria were: (a) diagnosed Autism Spectrum Disorder; (b) untreated Attention Deficit Hyperactivity Disorder (ADHD); (c) psychotic symptoms; (d) current severe self-harm or suicidal ideation; (e) current eating disorder; (f) more than 50% school refusal.

Participants were self-referred, based on information on websites, newspaper advertisements, and hand-outs to local general practitioners and educational institutions. Interested families sent in a brief description of the adolescent's major problems. Families judged suitable from their description were offered baseline assessment. Baseline assessment included self-reported questionnaires as well as diagnostic interviews. Families included based on the baseline assessment were contacted and informed of the study processes.

All questionnaires were administered electronically via e-mail, using an online data collection platform (SurveyXact), and assessed at baseline, post treatment, 3-month after treatment and 1-year after treatment. Diagnostic interview were conducted with the Anxiety Disorder Interview Schedule for DSM-IV, Child and Parent Version (ADIS-IV C/P) (30) at baseline, post treatment, and 3-month after treatment. The ADIS-IV C/P were conducted by clinical psychologists experienced in using the interview.

The study has obtained approval from the Institutional Review Board at Aarhus University (j.nr. 2019-616-000013) and the Institutional Data Protection Agency at Aarhus University (j.nr. 2016-051-000001).

Treatment

The Cool Kids Anxiety Program, Social Enhanced (CK-E), is a manualized CBT program specifically designed to treat adolescents with SAD, developed at the Centre for Emotional Health at Macquarie University, Sydney, Australia. The program is based on the generic Cool Kids Anxiety Program with standard CBT techniques, but including techniques

focusing specifically on SAD. These additional techniques are based on the theories of cognitive and behavioral processes maintaining SAD by Clark and Wells (28) and Rapee and Heimberg (29). The additional techniques are: 1. Training in task-focused attention (to reduce self-focus) and in-session behavioral experiments focusing on self-focus and reduction hereof. 2. In-session behavioral experiments used to investigate and reduce safety-seeking behaviors. 3. Cognitive restructuring with focus on overestimation of costs including exercises where participants deliberately makes mistakes to investigate consequences. 4. Interpersonal exposure tasks with video-feedback used to alter adolescents' distorted negative self-images. 5. Post-event cognitive restructuring used after challenging exposure tasks.

The CK-E has been translated to Danish and adapted to a group intervention by staff at CEBU. This implies change in timeframe (the individual program includes 10 1-h sessions, whereas the group program includes 10 2-h sessions) and setting (groups of 4-5 adolescents in each youth session with a duration of 1 hour, and parents work independently with the therapist typically 30 minutes and the rest of the time the whole group work together and with the therapist). The adaption did not include changes in the content of the manual. The manual comprises a therapist manual and workbooks for both adolescent and parents which were handed out at session one. The treatment consisted of nine sessions with the adolescents and parents together and one parents-only session (session 5). Sessions 1 through 8 were held weekly and session 9 and 10 with two-week intervals. Three months after ending treatment participants were offered a 1-h booster group session. Table 1 presents an overview of the intervention program.

The treatment was conducted by clinical psychologists from CEBU with 2-8 years of experience from treating adolescent with anxiety disorders with the Cool Kids Anxiety program. As part of an educational program at CEBU three graduate psychology students assisted the adolescents during the in-session assignments.

Measures

The feasibility of the social intervention program was evaluated by participant dropout rates, proportion of completed questionnaires, as well as treatment satisfaction. The preliminary efficacy was evaluated by diagnostic status and change in levels of functioning assessed by the questionnaires.

Treatment Satisfaction

Experience of Service Questionnaire (ESQ) measures participants' satisfaction with the

intervention at post. ESQ is adjusted by CEBU from the Experience of Service Questionnaire (31). There are separate items for parents (10 items) and adolescents (7 items). It includes positive and negative statements, and items were rated on a 3-point Likert scale (0-2). ESQ includes open questions with possibility for qualitative feedback. The qualitative feedback were used in a qualitative analysis which provided the following themes: 1) The therapeutic techniques and methods, 2) the group format, 3) intensity, 4) satisfaction with the therapists, and 5) inclusion of parents in the program.

Outcome Measures

Anxiety Disorder Interview Schedule for DSM-IV, Child and Parent Version (ADIS-IV C/P) (31) is a semi-structured diagnostic interview conducted with adolescents and parents separately to assess the diagnostic criteria in accordance with DSM-IV for anxiety disorders as well as other disorders often comorbid with anxiety (e.g., depression and ADHD). Severity of the diagnoses are measured on a nine-point Likert scale ranging from not disturbed at all to severely disturbed (0-8). Scores of 4 or greater indicate a clinical diagnosis. Separate scores are made by adolescents, parents, and the clinician, but only the clinician's severity rating score will be used as an outcome measure. The most impairing diagnosis, as assessed by the clinician, is considered as the primary diagnosis. Both concurrent validity and test-retest reliability has been established for the anxiety disorder section (30, 32).

Spence Children's Anxiety Scale (SCAS and SCAS-P) (33) was used to measure adolescent- and parent-rated anxiety symptoms. The adolescent version contains 44 items, and the parent version contains 38 items. Items are rated on a four-point Likert scale (0-3). Higher scores indicate higher levels of anxiety. It consists of six subscales reflecting symptoms specifically related to SAD, panic disorder and agoraphobia, generalized anxiety disorder, obsessive-compulsive disorder, separation anxiety disorder, and fear of physical injury. Each subscale is scored separately and added together for a total score reflecting overall anxiety symptoms. The Danish version of the SCAS has shown good to excellent internal consistency in clinical and non-clinical samples and good test-retest reliability in a non-clinical sample (34).

The Child Anxiety Life Inference Scale (CALIS) (35) was used to measure the impact of adolescent's anxiety on various areas of life functioning including friends, school, extracurricular, and family. The impact is evaluated separately by adolescents (9 items) and their parents (16 items). Items are evaluated on a five

TABLE 1. Overview of the Cool Kids Social Enhanced Program

Session number	Participants	Session content	Homework practice tasks
S-1	T, Y, P	<ul style="list-style-type: none"> - Rapport building - Psychoeducation - Worry scale - SMART goals 	<ul style="list-style-type: none"> - Complete "Getting to know anxiety"
S-2	T, Y, P	<ul style="list-style-type: none"> - Continue rapport building - Introduce link between thoughts & feelings - Introduce attention training - Review parent goals 	<ul style="list-style-type: none"> - Attention training - Linking thoughts and feelings
S-3	T, Y, P	<ul style="list-style-type: none"> - Introduce cognitive restructuring (detective thinking) - Introduce rewards 	<ul style="list-style-type: none"> - Attention training continued - Detective thinking - Rewards menu
S-4	T, Y, P	<ul style="list-style-type: none"> - Detective thinking to cost - Introduce avoidance - Introduce behavioral experiments - Conduct in session experiment 	<ul style="list-style-type: none"> - Detective thinking incl. cost - 2-4 planned experiments should be implemented - Attention training continued
S-5	T, P	<ul style="list-style-type: none"> - Parenting an adolescent with SAD 	<ul style="list-style-type: none"> - Changing my response as a parent - Continue detective thinking - Continue experiment practice - Attention training continued
S-6	T, Y, P	<ul style="list-style-type: none"> - Introduce safety traps - Review experiments - Introduce experiments to reduce safety behaviors - Conduct in session experiment - Introduce task focused attention 	<ul style="list-style-type: none"> - Conduct 2-4 planned experiments that focus on undoing safety traps - Continue detective thinking - Task attention practice
S-7	T, Y, P	<ul style="list-style-type: none"> - Review safety trap experiments and task-focused attention - Conduct the video-feedback experiment - Introduce the importance of obtaining an accurate self-perception - Obtaining accurate self-perception using feedback - Conduct additional in session experiments 	<ul style="list-style-type: none"> - Implement min. 2-4 planned experiments using feedback in the recording form - Daily experiment practice - Use detective evidence sheet as supplement to the experiments - Continue task-focus attention training
S-8	T, Y, P	<ul style="list-style-type: none"> - Review and revise experiments that utilize feedback - Introduce post-event processing (detective thinking AFTER a situation) - Introduce cost experiments - Conduct in-session exposure (including an extra challenge experiment) 	<ul style="list-style-type: none"> - Daily experiment practice (incl. min. 2-4 planned extra challenge experiments) - Post-event detective thinking - Continue task-focus attention training
S-9	T, Y, P	<ul style="list-style-type: none"> - Review and revise extra challenge experiments and post-event detective thinking - In session experiments - Troubleshooting experiments [PARENT ONLY] - Optional MODULE: Dealing with teasing and bullying 	<ul style="list-style-type: none"> - Daily experiments (including large experiments) - Continue task-focus attention training - Parent task: complete the reviewing goals worksheet - Optional module: Role play new ways of interacting with bullies
S-10	T, Y, P	<ul style="list-style-type: none"> - Review of goals - Maintenance of gains/setbacks - Future plans 	<ul style="list-style-type: none"> - Continue to practice skills
Booster	T, Y, P	<ul style="list-style-type: none"> - Focusing on maintaining and continuing the progress. - Advise possible further help. 	<ul style="list-style-type: none"> - Continue to practice skills

P = Parent; S: Session; T: Therapist; Y: Youth.

point Likert scale (0-4). Higher scores indicate a higher degree of life interference. CALIS has showed satisfactory internal consistency and moderate test-retest reliability (36).

The Short version of the Mood and Feelings Questionnaire (S-MFQ) (37) was used to measure depressive symptoms within the last two weeks. The symptoms are evaluated independently by adolescents and parents. The short version includes 13 items rated on

a three-point Likert scale (0-2) with higher scores indicating a higher degree of depressive symptoms. The Danish version of the long version of MFQ has showed good internal consistency and test-retest reliability (37).

Self-Efficacy Questionnaire for Children (SEQ-C) (38) was used to measure adolescents' self-efficacy. It is a self-rated measure completed by the adolescents. It has three subscales: social self-efficacy, academic self-efficacy and emotional self-efficacy. It consists of 24 items rated on a 5-point likert scale, with higher scores indicating higher self-efficacy. SEQ-C has shown good internal consistency (39).

Subtle Avoidance Frequency Examination (SAFE) (40) is a self-rated measure designed to assess safety behaviors. Adolescents completed the questionnaire. SAFE is designed to incorporate both active safety behaviors, subtle restrictions of behavior, and behaviors aimed at avoiding or concealing physical symptoms. SAFE consists of 32 items ranging on a five point Likert scale (0-4), with higher scores indicating a higher degree of safety-seeking behaviors. SAFE has showed good internal consistency and test-retest reliability (40, 41). SAFE was originally designed for adults but can be used reliably and validly to assess safety behaviors in adolescents (42).

The Children's Automatic Thoughts Scale (CATS) (41) measures a range of the adolescents' self-reported negative self-statements. CATS was completed by the adolescents. CATS include four subscales relating to automatic thoughts on social threat, personal failure, hostility, and physical threat. All items were scored on a five-point Likert scale (0-4), with higher scores indicating higher degrees of negative automatic thought. Only two subscales are included in the present study; social threat and personal failure. These subscales have showed correlations with self-rated SAD in a prior study (42). CATS has demonstrated good internal consistency and test-retest reliability (43, 44).

Focus of Attention Questionnaire (FAQ) (43) is a self-rated measure of focus of attention. It was completed by the adolescents. FAQ is a 10-item scale including two 5-item subscales; self-focused attention and external-focused attention. All items were rated on a five-point Likert scale (1-5). The two subscales are treated as independent. Subscale scores were calculated by averaging the five items. A higher score on the two subscales indicate a higher degree of self-focused attention or external focus respectively. High internal consistency has been reported (45).

Postevent version of the Thoughts Questionnaire (PTQ) (46) is a self-rated measure to assess the degree of post event processing. Adolescents completed the PTQ. Consistent with prior research (47, 48) only the 15 negatively worded items of the PTQ were used in this study. All items were rated on a five-point Likert scale (0-4). Higher scores indicate a higher degree of post-event rumination. Studies have shown excellent internally consistency (49-51).

Depression Anxiety Stress Scales (DASS) (49) is used in the study for parents' rating of their own symptoms regarding anxiety, depression and stress. DASS consists of three subscales measuring symptoms of anxiety (DASS-A), depression (DASS-D) and stress (DASS-S). DASS contains 42 item and each item is rated on a four-point Likert scale (0-3) with higher scores indicating a higher degree of distress. DASS has been found to have good internal consistency and test-retest reliability (50).

Background Information at Baseline. Participants completed a background information questionnaire before entering the interventions. Background questions included information regarding parents' mental and physical health, adolescent's mental and physical health, family demographics, adolescent's previous and/or ongoing treatment and school absenteeism.

Analytic Strategy

Descriptive statistics, in form of mean, standard deviation (SD) and percent, were used to describe sample characteristics, dropout, session attendance, completion of questionnaires and treatment satisfaction.

Preliminary longitudinal clinical outcomes were analyzed using multilevel modeling (MLM) in Stata 16.1 with the mixed command. MLM accounts for the dependence structure due to repeated measurements within subjects and allows for the examination of change within subjects across time (baseline, post, 3-month follow-up, 1-year follow-up). Subjects with partly missing data can be accommodated thereby utilizing all available data.

Main effects of time were modelled specifying time as a level 1 variable governed by a piecewise linear trajectory (e.g. 54). Thus, between baseline and post one specific slope applies and between post and 1 year follow-up another slope applies. The two line segments are joined at post. A slope significantly different from zero corresponds to a statistically significant t-test of the hypothesis of equal outcome means at the two time periods identifying the lines, viz. baseline and post as well as post and 1-year follow-up. All models included random intercepts and random slopes between post and 1-year follow-

up. The variance/covariance structure at level 1 was modeled as independent.

Effect-sizes (Cohens d) were calculated for all measures by subtracting post-mean from baseline-mean divided by the pooled standard deviation $(M_{pre}-M_{post}) / SD_{pooled}$

Results

Baseline Participant Characteristics

Thirteen adolescents between 12 and 17 year of age (mean age=14.69, $SD=1.25$) and nine of them were females (69 %) were enrolled in the study. Eight adolescents (61.5 %) lived with both biological parents. The mean household income among the

private or municipal setting. Three of the adolescents (23%) were on psychopharmacological medication (Setraline 100-150mg).

Feasibility

Attrition Rate and Session Attendance

There were no drop-outs during treatment. Ten of the thirteen adolescents attended all sessions (77 %), two (15 %) missed one session and one (8 %) missed two sessions. Four adolescents (30 %) received one extra 30 minutes individual session (with participation of their parents) and one parent received a phone call. Nine (69 %) mothers attended all ten session and four (31 %) mothers attended nine

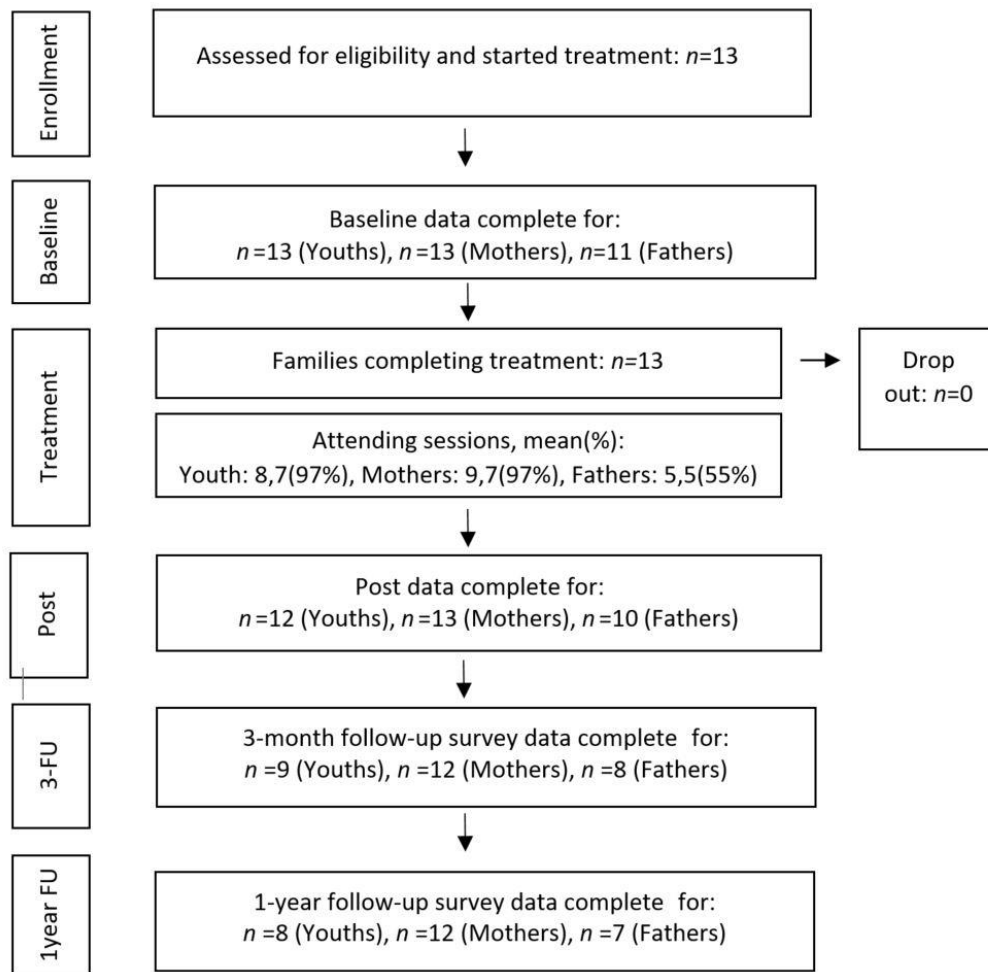


FIGURE 1. Flow Diagram of Response and Completion Rate

families were 772.308 DKK ($SD=248.338$), which is close to the average household income in the area at 619.418 DKK. All thirteen adolescents had SAD as primary diagnosis in the ADIS-C/P interview with a CSR at 6 or 7 (mean=6.23, $SD=0.43$). Eight of the adolescents (61.5%) had a comorbid anxiety disorder (generalized anxiety disorder (78 %), agoraphobia (11 %), specific phobia (11 %)). Furthermore two (15 %) also had a dysthymia disorder. All adolescents have had former psychological treatment in either

sessions. Four (31 %) fathers attended all ten session, two (15 %) fathers attended seven sessions, one (8 %) father attended six, two (15 %) fathers attended five, one (8 %) father attended one sessions, and three fathers (23 %) did not participate in any sessions (this was due to divorce ($n=2$) and living abroad ($n=1$)).

Feasibility of Data Gathering Procedures

All participating adolescents and mothers (n=13, 100%) and 11 fathers (82 %) completed the baseline survey. The lower response rate for fathers was due to divorce (n=1) and living abroad (n=1). Post treatment 12 (92 %) of the adolescents, 13 (100 %) of the mothers and 10 (77 %) of the fathers completed the survey. At 3-month follow-up and 1-year follow-up the response rates declined for adolescents (n=9, 69%; n=8, 62%), mothers (n=12, 92%), and fathers (n=8, 62%; n=7, 54%).

Treatment Satisfaction

Twelve adolescents (92 %), thirteen mothers (100 %) and ten fathers (77 %), completed the ESQ on treatment satisfaction. The responses from adolescents and parents on each item appear from table 2. Both adolescents and parents were satisfied with the treatment and scored “true” or “partly true” to most of the positive statements about treatment. All participants reported the program as helpful and would recommend it to others

Qualitative Evaluation of the Program

Both adolescents and parents were able to give qualitative feedback and to comment freely on the satisfaction with the treatment and give suggestions for enhancing the program. Two adolescents (15%), twelve mothers (92%) and four fathers (36%) did give qualitative feedback. The majority of the feedback was positive. Answering the question about positive elements of the therapy, one parent wrote: “Everything... the psychoeducation... that it was group therapy... the psychologists... the openness, support and engagement of the parental group, the youth group, the method...”.

The participants’ response to the open-ended questions regarding feedback about the social program were grouped within the following themes.

Theme 1: The Therapeutic Techniques and Methods

Eight participants commented on the usefulness of the therapeutic techniques. One adolescent wrote: “I will always be able to use the tools I have gotten”. The parents (n=7) also commented positively on the techniques, e.g.: “We got some very concrete tools which helped us a lot. We got help to “push” x

TABLE 2. Treatment Satisfaction at Post-Intervention

Item	Respondent	Response categories		
		Not True	Partly True	Certainly True
The treatment helped me/my child	Youth	0	3 (25%)	9 (75%)
	Mother	0	4 (31%)	9 (69%)
	Father	0	3 (33%)	7 (67%)
We feel better in the family now than before treatment	Youth	3 (25%)	6 (50%)	3 (25%)
	Mother	0	4 (31%)	9 (69%)
	Father	0	2 (20%)	8 (80%)
If a friend needed similar help, I would recommend the treatment	Youth	0	11 (92%)	1 (8%)
	Mother	0	0	13 (100%)
	Father	0	1 (10%)	9 (90%)
I trusted the therapist	Youth	0	2 (17%)	10 (83%)
	Mother	0	0	13 (100%)
	Father	0	1 (10%)	9 (90%)
The therapist had an understanding of my worries and issues	Youth	0	3 (25%)	9 (75%)
After treatment I felt like being with my friends more	Youth	2 (16%)	5 (42%)	5 (42%)
The treatment helped me (the parent)	Mother	0	2 (15%)	11 (85%)
	Father	1 (10%)	2 (20 %)	7 (70%)
I have been given enough information about the purpose and course of treatment prior to the start	Mother	0	1 (8%)	12 (92%)
	Father	0	2 (20%)	8 (80%)
During the treatment I managed to change my behavior towards my child in a positive way	Mother	0	3 (23%)	10 (77%)
	Father	0	1 (10%)	9 (90%)
During the treatment I got a better understanding of my child’s psychological well-being	Mother	0	0	13 (100%)
	Father	0	1 (10%)	9 (90%)
The treatment made me/my child feel worse	Youth	11 (92%)	1 (8%)	0
	Mother	13 (100%)	0	0
	Father	10 (100%)	0	0
The treatment made me (the parent) feel worse	Mother	13 (100%)	0	0
	Father	10 (100%)	0	0

Data presented as n (%)

in some situations that were difficult for her... it made a huge difference for x!”.

Several parents (n=6) found the introduction to how parents can influence on their adolescents anxiety and the support to the parents from the therapist concerning making demands to their child very helpful. One parent wrote “Got support to the things which are hard to implement/endure as a parent”. As a positive statement, one parent further emphasized: “To get tools to address anxiety. Give words to it [the anxiety] by means of RT [realistic thinking]. Good forms. Get focus on own reaction patterns/parent traps”.

Theme 2: Group Format

Many of the parents (n=9) commented positively on the parental aspect of the group format, e.g.: “It was really great to meet others with the same difficulties/challenges”, and “Totally amazing with the group treatment and that we as parents had each other to spar with”.

Some of the parents (n=3) thought that the size of the group was too large when everyone were gathered in the same room. As one of them put it: “Too many gathered in the last part of the sessions, when the psychologist, the adolescents and the parents round off the session.”

Theme 3: Intensity

Another theme from the participants’ feedback was the intensity of the intervention program. Some of the parents (n=2) requested more time during the session to “go in depth with what we have read from session to session”. One parent commented on the initial assessment interview. “The first interview was difficult for our daughter. She was adversely affected several weeks afterwards and had a difficult time attending school. Which we haven’t seen for a long time. Maybe it was meeting with two strangers immediately asking questions – intrusive – concerning the most difficult things in the world”.

One adolescent commented on the number of experiments in the program, she wrote: “...too many experiments a week”. Furthermore, one of the parents recommended conducting an individual session during the program to facilitate idiosyncratic adjustments.

Theme 4: Satisfaction with the Therapists

All comments (n=5) regarding the therapists from both adolescents, mothers and fathers were positive, and reflected great satisfaction with the therapists: “It has been great for x to meet some experts on the field and to be understood and see that we as parents now understand her.” One adolescent wrote: “The only thing I didn’t like was that I was the only one who

didn’t get a permanent co-therapist assigned, I got the leader of it all, or whatever you call her.”

Theme 5: Inclusion of Parents in the Program

Many of the parents (n=7) viewed the inclusion of both adolescents and their parents as a positive feature of the program. When asked about what worked well in the program, a parent replied: “That we have got a common understanding for our daughters difficulties and common methods” Some parents (n=3) requested even more time for psychoeducating parents, one parent wrote: “There was too little time to acquaint the parents with their role. Often it feels like “a waste of time” to sit and wait for the psychologist to come in to the parents. When the psychologist had time with the parents it all went a bit too fast”. When asked about suggestions for enhancing the program, another parent emphasized: “Get more education regarding anxiety and more time to education”. Other parents were very satisfied with the level of parental support, one of whom states: “A good thing that I, as a parent, got knowledge about how my own reactions affected my child, and that we got more suitable terms of the way we did”.

Preliminary Outcome of the Treatment

Table 3 gives an overview of the descriptive statistics as mean scores, standard deviations and within-group effect sizes for the outcome measures.

The clinical severity rating (CSR) of the Anxiety Disorder Interview Schedule for DSM-IV, Child and Parent Version (ADIS-IV C/P) were reduced with a large effect-size (d=1.02). The reduction improved further at 3-month follow-up equivalent to a medium effect size (d=0.58). However no adolescents were free of their SAD diagnosis at post and only two (15 %) were free of their SAD diagnosis at 3-month follow-up.

As presented in table 4 adolescents as well as their parents reported a significant reduction in outcomes related to anxiety symptoms and interference. The reduction were equivalent to medium to large effect-sizes (see table 3). The reduction remained at 1-year follow-up.

Furthermore, the outcomes related to specific mechanism of SAD as safety behavior, self-focused attention and post-event processing showed significant reduction from baseline to post treatment equivalent to large effect-sizes. Generally the change remained at 1-year follow-up.

The self-efficacy outcomes improved significantly with a large effect-size, which remained at 1-year follow-up.

The adolescents reported a significant reduction in depression symptoms at post treatment which remained at 1-year follow-up. No significant change

in their children's depression symptoms was reported by their parents. Parents reported no significant change in their own stress, depression or anxiety levels.

Discussion

The aim of the current study was to evaluate the feasibility (assessed by attrition rate, session attendance, treatment satisfaction, and questionnaires completion rates) and preliminary

clinical outcomes of the CK-E program for adolescents with SAD. This evaluation will be the focus in the following with regard to possible improvements to prepare for the upcoming RCT.

No participants dropped out during the intervention, and most, both adolescents, mothers and fathers, participated in all session. The dropout rate was lower than in many other studies of SAD specific treatment. For example other dropout rates varied from 8 % (53) to 28.6 % (54).

TABLE 3. Mean Scores, Standard Deviations and Effect-Sizes

Outcome	Respondent	Baseline	Post intervention	3 month follow-up	1 year follow-up	Baseline - post intervention: effect size	Post - 1 year follow-up: effect size
ADIS-IV: CSR on SAD	CSR rating*	6.23 (0.44) n = 13	5.58 (0.79) n = 12	4.77 (1.83) n = 13	-	d = 1.02	d = 0.59
	SCAS total	53 (16.81) n = 13	35.33 (13.74) n = 12	37.22 (13.09) n = 9	39 (22.09) n = 8	d = 1.15	d = -0.21
	Mother	48.46 (15.03) n = 13	34.85 (16.09) n = 13	30.08 (13.92) n = 12	33.83 (21.32) n = 12	d = 0.87	d = 0.05
SCAS social phobia subscale	Father	43.09 (10.27) n = 11	34.7 (16.57) n = 10	25.5 (7.93) n = 8	29.71 (15.51) n = 7	d = 0.62	d = 0.31
	Youth	12.77 (3.24) n = 13	8.75 (3.44) n = 12	9.44 (3.09) n = 9	9.63 (4.34) n = 8	d = 1.2	d = -0.23
	Mother	14.23 (2.52) n = 13	11.77 (3.52) n = 13	10.92 (4.14) n = 12	10.75 (4.29) n = 12	d = 0.80	d = 0.26
CALIS total	Father	13.36 (2.01) n = 11	11.6 (3.06) n = 10	10.88 (3.44) n = 8	10.43 (1.72) n = 7	d = 0.69	d = 0.45
	Youth	19.46 (5.64) n = 13	13.67 (6.75) n = 12	14.56 (5.46) n = 9	16.88 (10.09) n = 8	d = 0.93	d = -0.39
	Mother	37.69 (8.45) n = 13	30 (10.65) n = 13	25.17 (13.13) n = 12	26.08 (13.21) n = 12	d = 0.80	d = 0.33
MFQ	Father	35.27 (9.26) n = 11	31.4 (9.72) n = 10	22.75 (7.05) n = 8	27.29 (13.59) n = 7	d = 0.41	d = 0.36
	Youth	12.62 (7.18) n = 13	9.67 (7.29) n = 12	9.22 (7.16) n = 9	12.5 (9.15) n = 8	d = 0.41	d = -0.35
	Mother	9.62 (6.45) n = 13	8.23 (7.01) n = 13	7.08 (8.34) n = 12	7.33 (6.96) n = 12	d = 0.21	d = 0.13
SEQ total	Father	6.55 (3.56) n = 11	4.8 (3.39) n = 10	4.63 (4.60) n = 8	3.29 (2.36) n = 7	d = 0.50	d = 0.50
	Youth	59.62 (11.33) n = 13	69.25 (14.45) n = 12	69.11 (14.08) n = 9	63.88 (20.29) n = 8	d = 0.75	d = -0.32
	SAFE	91.62 (16.19) n = 13	78.5 (12.99) n = 12	75.33 (18.70) n = 9	73.63 (16.13) n = 8	d = 0.89	d = 0.34
CATS total	Youth	34.46 (20.56) n = 13	22.08 (17.07) n = 12	22.44 (20.30) n = 9	26.13 (23.53) n = 8	d = 0.65	d = -0.20
	FAQ self-focus	17.38 (4.05) n = 13	13.92 (3.70) n = 12	13.89 (5.09) n = 9	14.75 (6.23) n = 8	d = 0.89	d = -0.17
	FAQ external focus	14.38 (2.47) n = 13	13.67 (1.67) n = 12	13 (3.16) n = 9	14.25 (3.65) n = 8	d = 0.34	d = -0.22
DASS anxiety	PTQ	36.92 (11.94) n = 13	27.75 (13.46) n = 12	23.67 (16.48) n = 9	23.75 (17.38) n = 8	d = 0.72	d = 0.26
	Mother	3.38 (5.20) n = 13	1.69 (2.78) n = 13	2.92 (3.68) n = 12	3.17 (3.97) n = 12	d = 0.41	d = -0.43
	Mother	6.08 (10.77) n = 13	2.92 (3.88) n = 13	4.67 (7.34) n = 12	4.25 (6.22) n = 12	d = 0.39	d = -0.26
DASS depression	DASS stress	8.38 (7.7) n = 13	8.38 (6.97) n = 13	7.67 (8.05) n = 12	8.5 (7.70) n = 12	d = 0.0	d = -0.02
	DASS anxiety	1.64 (3.56) n = 11	1.6 (2.76) n = 10	0.38 (0.74) n = 8	0.14 (0.38) n = 7	d = 0.01	d = 0.68
	DASS depression	3.27 (8.66) n = 11	4.4 (6.88) n = 10	5.75 (8.53) n = 8	2.86 (2.85) n = 7	d = -0.14	d = 0.27
DASS stress	DASS stress	4.09 (4.74) n = 11	4.7 (4.37) n = 10	4.25 (3.11) n = 8	2.29 (2.63) n = 7	d = -0.13	d = 0.64

Data presented as mean (SD). * = ADIS interview and CSR rating completed at baseline, post and 3-month follow-up. Therefore, no data represented at 1-year follow-up and effect sizes are calculated from post to 3-month follow-up.

TABLE 4. Estimated Slopes (Change) from Baseline- to Post Intervention and Post Intervention to 1-Year Follow-Up

Outcome	Respondent	Baseline to post intervention β [95% CI]	Post intervention to 1-year follow-up β [95% CI]
<i>SCAS total</i>	Youth	-1.44 [-1.78, -1.10]***	0.08 [-0.15, 0.30]
	Mother	-1.18 [-1.59, -0.77]***	0.02 [-0.13, 0.17]
	Father	-0.82 [-1.41, -0.23]**	0.04 [-0.16, 0.24]
<i>SCAS social phobia subscale</i>	Youth	-0.29 [-0.41, -0.17]***	0.02 [-0.04, 0.08]
	Mother	-0.21 [-0.33, -0.09]***	-0.01 [-0.05, 0.03]
	Father	-0.14 [-0.28, -0.00]*	-0.02 [-0.06, 0.02]
<i>CALIS total</i>	Youth	-0.44 [-0.60, -0.27]***	0.06 [-0.06, 0.18]
	Mother	-0.71 [-1.12, -0.31]***	-0.05 [-0.19, 0.09]
	Father	-0.54 [-1.00, -0.08]*	-0.05 [-0.25, 0.16]
<i>MFQ</i>	Youth	-0.28 [-0.45, -0.10]**	0.07 [-0.01, 0.14]
	Mother	-0.12 [-0.33, 0.09]	0.00 [-0.06, 0.06]
	Father	-0.11 [-0.27, 0.05]	-0.02 [-0.07, 0.03]
<i>SEQ total</i>	Youth	0.74 [0.42, 1.05]***	-0.07 [-0.24, 0.09]
<i>SAFE</i>	Youth	-1.07 [-1.50, -0.64]***	-0.09 [-0.25, 0.06]
<i>CATS total</i>	Youth	-1.02 [-1.39, -0.65]***	0.11 [-0.06, 0.27]
<i>FAQ - self focus</i>	Youth	-0.30 [-0.42, -0.17]***	0.01 [-0.07, 0.08]
<i>FAQ - external focus</i>	Youth	-0.08 [-0.18, 0.02]	0.01 [-0.04, 0.06]
<i>PTQ</i>	Youth	-0.76 [-1.18, -0.34]***	-0.05 [-0.18, 0.09]
<i>DASS anxiety</i>	Mother	-0.08 [-0.23, 0.06]	0.04 [0.00, 0.08]
<i>DASS depression</i>	Mother	-0.16 [-0.41, 0.09]	0.05 [-0.02, 0.12]
<i>DASS stress</i>	Mother	-0.01 [-0.26, 0.25]	0.02 [-0.07, 0.10]
<i>DASS anxiety</i>	Father	-	-
<i>DASS depression</i>	Father	0.10 [-0.10, 0.30]	-0.02 [-0.11, 0.07]
<i>DASS stress</i>	Father	0.05 [-0.14, 0.24]	-0.04 [-0.10, 0.02]

The subscale for DASS anxiety for fathers did not converge. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Four participants received an extra short (30 minutes) individual session. Since the extra sessions by the therapist was considered as relevant and necessary for the therapy, it could be expected that there will be a demand for an additional session with about a third of the families in the RCT as well. This will be accounted for when allocation therapist resources to the RCT.

The treatment satisfaction were very high among both adolescents, mothers and fathers. All of the respondents agreed or partly agreed that the treatment helped them/their child, and that they would recommend the treatment to others in need. The high treatment satisfaction corresponds or are even a bit higher compared to what previous similar studies have found (55, 56). Donovan et al. (55) investigated a group-based CBT high intensive program with four three-hour sessions. Spence et al. (56) compared an individual diagnosis-specific CBT to an individual generic CBT. Both studies found treatment satisfaction ranging from mean of 3.02 to 3.83 (SD ranging from 0.72-1.05) on a 5-point Likert scale (1-5).

According to the parents, it was an advantage of the treatment that it was provided in a group format, and they found it very positive to be able to talk with other parents with similar challenges. None of the adolescents commented specifically on the group format in the qualitative evaluation, but some of them commented that the atmosphere had been nice. It thus seems that the group format in itself was not too anxiety provoking for the adolescents with SAD, which also the high session participation rate (adolescents participated in 97% of the sessions) and that none of the adolescents dropped out of treatment could indicate. Also the high treatment satisfaction that correspond to previous studies, also individual treatment studies (56) may indicate that the group format worked fine for the adolescents. Despite the high treatment satisfaction three participants were less satisfied with the intensity of the program. They mentioned that there was too little time to go in depth, that the initial interview was too much for their adolescent, and one adolescent mentioned that there were too many experiments every week. Based on this feedback the session content will be restructured in the RCT to make

better room and time for getting in depth with the methods. The content will be the same, but some of it will be moved to the earlier sessions to make a more even distribution of the workload during the sessions. Also the adolescents will in the RCT participate in session five (which in the feasibility study was a parent-only session), so that some of the youth content can be spread into this session as well. All participants (except for the fathers who didn't participate in the treatment) completed the questionnaires at baseline and post intervention. At 3-month follow-up and 1-year follow-up all but one mother completed the questionnaires but for the adolescents and the fathers the response rate declined. The participants who did not complete the questionnaires received two email reminders and then a phone call to remind them. Since this procedure is quite intensive, and since the response rate was reasonable high, no changes will be made in the RCT.

Concerning the preliminary clinical outcome, no adolescent were free of their SAD diagnosis at post, but two adolescents (15 %) were free of their SAD diagnosis at 3-month follow-up. Previous studies found a higher reduction in SAD, where 27 % to 45 % were free at their SAD diagnosis at post (21, 22, 24). Therefore, the diagnosis-specific group CBT in the current study seems less effective in reducing SAD than previous studies, but due to the small number of participants (n=13) in the current study the results seems fragile.

The self-reported improvements in the current study however were comparable to the improvements in previous studies. Post treatment, there were significant improvements of both self-reported anxiety symptoms and interference with medium to large effect size, and the improvement remained at 1-year follow-up. Also there were significant improvements with medium to large effect-sizes at post treatment in safety behavior, self-focused attention and post-event processing, which are mechanism thought to be related to SAD (28). These improvements remained at 1-year follow-up. The findings are comparable to similar studies, which also found significant improvements with medium to large effect sizes (21, 22, 24). The former mentioned studies Herbert et al. (22) and Melfsen et al. (24) found medium to large effect-sizes on the self-reported measures on anxiety and Hayward et al. (21) found medium effect-sizes on self-reported anxiety measures.

There are a number of limitations to the study. Because of the uncontrolled design of the study, the acceptability of randomization and its impact on attrition could not be evaluated, and the impact of the therapy on the changes observed in the outcome measures is not clear. Also the small sample size

limits the generalizability of the study. Another limitation in the study is that no questionnaires were specifically addressing SAD symptoms. The study aimed to evaluate the feasibility of the Cool Kids Anxiety Program, Social Enhanced (CK-E) in a group therapy version in Denmark, and to inform changes and improvement that needed to be implemented into the intervention before evaluating in a forthcoming RCT. Beside slightly increasing the therapist resources and restructuring the session content, an extra self-report measure, Social Phobia Inventory (SPIN; Connor et al., 2000) will be included, to better address the SAD symptoms of the adolescents. No other changes will be made.

Conclusion

The results from this feasibility study of the diagnosis-specific CBT group based treatment for adolescents with SAD, the CK-E program, found high participation rates and high levels of treatment satisfaction. Although only few of the adolescents were free of their SAD diagnosis at 3-month follow-up, the other outcomes showed significant and stable reductions in anxiety symptoms and mechanisms related to SAD. It therefore seems feasible to evaluate the efficacy of the CK-E program in an RCT.

Disclosures

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