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Short Communication

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# Assessing Cognitive Behavioral Therapy Groups using SCARED Scores for Children and Adolescents with Anxiety Disorders

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## Abstract

**Background:** Limited access and availability of behavioral health providers has led to increased interest in Cognitive Behavioral Group Therapy (CBGT). Recent studies have found Cognitive Behavioral Group Therapy to be effective in treating Generalized Anxiety Disorders amongst children and adolescents.

**Objective:** It was hypothesized that children who attended 4 or more of the 8 cognitive behavioral group therapy sessions would have a decreased composite score on a standardized anxiety screen after the completion of therapy sessions.

**Methods:** A total of 9 patients aged 6 to 18 years (All with confirmed Anxiety disorder from behavioral health) and their parents completed the Screen for Child Anxiety Related Emotional Disorders (SCARED) before and after cognitive behavioral group therapy.

**Results:** Children and adolescents who fit the inclusion criteria displayed a decreased mean composite anxiety score on SCARED once therapy was completed, but this finding did not reach statistical significance. Parents who completed the baseline and post-therapy SCARED showed a statistically significant decrease in mean composite anxiety score.

**Conclusion:** Children and adolescents who completed CBGT did not have a statistically significant decrease in anxiety scores; however, the parents who completed SCARED on behalf of their child did show a statically significant decrease in anxiety scores. It is still important that CBGT sessions be continued at the Penn State Hershey Outpatient Psychiatry Clinic and those children and adolescents be urged to attend as many sessions as possible when enrolled in the sessions.

**Keywords**

Anxiety; Group psychotherapy; Pediatrics; Cognitive behavioral therapy

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## Introduction

Anxiety disorders are very common in children and adolescents with an estimated lifetime prevalence of 31.9% [1]; despite high prevalence of these disorders, they are frequently overlooked and underdiagnosed. The onset of anxiety disorders is commonly around 6 years of age [1]. If left untreated, anxiety can result in ill effects on daily lifestyle functioning, performance in school, personal relationships, and high risk of substance abuse [2].

According to American Academy of Pediatrics, Level 1 support, which is also recognized as the best support for anxious or avoidant behaviors is cognitive behavior therapy (CBT)[3]. Cognitive behavior therapy (CBT) consists of psychoeducation and a variety of other therapeutic techniques that are valuable in treating the anxiety disorder [4]. Level 2 support, or good support, consists of CBT for the child and parent and assertiveness training [3]. Level 3 support, or moderate support, is group therapy, which has advantages over individual therapy [3]. Group therapy provides opportunities for individuals to express their experiences as well as provide an environment for those to overcome fears with social interaction [4]. Due to the limited access of behavioral health professionals as well as the lengthy wait-lists for behavioral health services, group therapy programs have been considered one of the most ideal ways to treat multiple patients and provide the needed techniques for anxiety relief in one setting that would not be possible if seen individually within the clinic. In addition to the benefits of allowing behavioral health providers to aid in intervention with multiple patients in the same setting, group therapy sessions have also been made convenient for both patients and parents by being held during evening hours accommodating those who cannot miss school as well as those who cannot take off from work for day time office visits. Thus, Cognitive Behavioral Group Therapy (CBGT) is an effective therapeutic approach that will lead to a clinical decrease in anxiety scores.

Many studies have analyzed the effectiveness of CBT, CBGT, or internet-CBT sessions for various mental health concerns including depression, suicide, and PTSD [5-7] but very few have been focused on anxiety and related conditions. For those studies that have analyzed CBGT for anxiety including the study done by Lau et al. [8] findings have suggested that CBGT reduces participants' anxiety symptoms compared to a waitlist control, as well as show clinical and statistical significance in treatment outcomes using the Spence's Anxiety Scale and the Positive and Negative Affect Schedule. In a randomized controlled trial by Leichsenring et al. [9], results showed effectiveness in treating social anxiety with CBT and psychodynamic therapy. CBT showed a significant difference in terms of remission compared to psychodynamic therapy. In contrast, a community-based study that sought to determine the effectiveness of CBGT for social phobia, found that 153 patients who participated in a 7-week CBGT showed significant reductions in social anxiety and depression symptoms with approximately half who also showed a clinically significant change on the Social Phobia Scale and the Beck Depression Inventory [10]. With the support of these studies proving that CBT and CBGT are effective methods in treating anxiety and related conditions, research should consider whether this effective intervention can reduce anxiety scores

measured by the SCARED, which is a tool that not only assesses general anxiety symptoms but also makes a distinction between the DSM-IV childhood anxiety disorders [11].

As patient interest in Penn State Hershey's Anxiety Disorder Program continues to grow along with the increase in number of CBGT sessions, it has become necessary to standardize sessions in order to provide the utmost therapeutic benefit to all patients matriculating through the program. There are very few research studies that have looked into determining the effectiveness of CBGT for Generalized Anxiety Disorders based on the Screen for Child Anxiety Related Emotional Disorders (SCARED) analysis tool [12]. This research study allowed for a thorough analysis of previous group therapy sessions from both the participant with an anxiety disorder as well as the parent that can analyze this child/adolescent from their perspective to see if it was effective and beneficial to the patient. This research determines the future and potential of CBGT sessions in treating anxiety disorders. It impacts future curriculum changes as well as the standards and regulations for the future group therapy sessions.

## Specific Aims/Objectives

This research study analyzed three previous 7 to 8-week pediatric Cognitive Behavior Therapy groups within the Psychiatric Department at Penn State Medical Group Psychiatry outpatient office. The predominant goal of this research was to determine the effectiveness of CBGT sessions for children and adolescents with Social Anxiety Disorder (SAD) and Generalized Anxiety Disorder (GAD). We believe that CBGT benefits children and adolescents diagnosed with anxiety disorders and improvements can be seen within SCARED scores of these participants.

### Methods/Subjects

This study was approved by the Institutional Review Boards of Penn State Milton S. Hershey Medical Center and Penn State College of Medicine.

### Participants

Eligible subjects were identified through Hershey Medical Center's electronic database of patient files by searching for group therapy session between 07/07/2016-04/20/2017. Patients were included in the study if they were between the ages 6 to 18 years, had a primary diagnosis of SAD or GAD or any other anxiety diagnosis, were enrolled in the Penn State Hershey Psychiatry cognitive behavioral group therapy within the timeframe of 07/07/2016-04/20/2017, had attended at least 4 of the 8 weeks of group therapy sessions, and had completed pre- and post-analysis of SCARED.

The diagnosis of an anxiety disorder was determined by clinical interview by child and adolescent psychologists or therapists based on *Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition).* Study groups included 9 children and adolescents (mean age, 11.6 years) from the July 7th, 2016 CBT group, October 27th, 2016 CBT group, and March 2nd, 2017 CBT group.

### Cognitive behavior group therapy

Cognitive behavior therapy (CBT) for anxiety is a form of psychotherapy that addresses the cognitive, behavioral, and physiological aspects of anxiety [4]. For CBGT programs, the Coping Cat program has been the most evaluated program for treating anxiety disorders in children [4]. The Coping Cat Program is a treatment program for children aged 7 to 13 years who are diagnosed with GAD, Social Phobia, or Separation Anxiety Disorder. The Coping Cat Program has a focus on the FEAR Plan that identifies each step in allowing children to recognize that they are frightened from their physical feelings, to identify anxious thoughts, coping skills, and coping thoughts that decrease their anxiety, and lastly to create rewards in regard to facing their fear [13]. The C.A.T project is a similar program that has been adjusted and recommended as the treatment program used for adolescents ages 13 to 17 years [13]. Within Penn State's Cognitive Behavioral Group Therapy, both the Coping Cat and the C.A.T Project programs were used as treatment guides for children and adolescents, respectively. Normally each of these programs are 16 weeks in length with the first 8 weeks revolving around psychoeducation and the remaining 8 weeks consisting of more individual behavioral focused methods [13]. Penn State's CBT groups consisted of 8 weeks of psychoeducation with homework assignments that allowed for individual practice with the tools learned during the group session.

## Procedures

### Child self-report and parent report measures

SCARED, Screen for Child Anxiety Related Emotional Disorders, was the primary tool used to determine improvement in anxiety levels amongst the participants. SCARED is a 41-item standardized self-reporting tool that was developed for children and adolescents as well as for parents to screen for anxiety disorders including General Anxiety Disorder, Separation Anxiety Disorder, Panic Disorder, Social Phobia, and School Phobia [11]. The child or self-report form is completed by the child regarding their own anxiety [12]. The parent report form is answered by the parent regarding their child's anxiety [14]. Responses to the 41 items are summed up into a composite score and scores on individual anxiety subscales [11]. A composite score of 25 or greater indicates the presence of an anxiety disorder [11].

Participants completed self-report SCARED both on the first and last day of CBGT. One or both parents accompanying the child/adolescent completed the parent-report form on the first and last day of CBGT. Once completed the office staff uploaded the SCARED documentation into the EMR. Pre- and post-analysis of SCARED from both participant and/or parent, was obtained from the medical record along with age, gender, and anxiety related diagnoses in the EMR. Identities were destroyed upon retrieval of the data from the medical record and review of it. Study data were collected and managed using REDCAP (Research Electronic Data Capture), a secure, web-based application designed to support data capture for research studies [14,15]. Only a master code linking the REDCap code number and the patient's MRN was retained specifically to verify the accuracy of the inputted data.

### Statistical analyses

One-tail paired t-tests were used to compare the composite and subscale scores derived from the self- and parent-reported, pre-, and post-SCARED amongst the CBGT groups.

## Results

To determine if Penn State's Pediatric Psychiatry CBGT for Generalized Anxiety Disorders was effective in lowering anxiety scores, information was compared between the pre- and post-SCARED using t-tests. From the 52 children and adolescents who enrolled in the Cognitive Behavior Therapy group between July

2016 and March 2017, 33 children and adolescents completed four or more CBGT sessions. Of these 33 children and adolescents, 9 of them had both pre- and post-SCARED within EMR. Of the eligible 9 participants, only 6 children and adolescents had the same parent/guardian who completed the pre- and the post-SCARED regarding their child's anxiety.

### Demographic characteristics

Demographic characteristics are presented in Table 1.

### Self-report SCARED

A total of 9 children completed the self-version of the SCARED form about their own anxiety. Results indicated significant overall differences in two of the five anxiety subscales: separation anxiety and school avoidance. Results revealed a decrease in the mean composite anxiety score reported in SCARED, but this finding did not reach statistical significance (P=0.138) (Table 2).

### Parent-report SCARED

A total of 6 mothers completed the parent version of the SCARED form about their child's anxiety. Results indicated significant overall differences in three of the five anxiety subscales: panic disorder, separation anxiety, and social anxiety. Results revealed a statistically significant decrease in the mean composite anxiety score reported in SCARED (P=0.011) (Table 2).

## Discussion

Our results are consistent with other studies that have found CBGT successful in lowering anxiety scores, although not statistically significant for the child self- report SCARED. One hypothesis for the lack of statistical significance could be the limited sample size of participants who fully completed four or more sessions of CBGT with presence of both pre- and post-SCARED documentation within the EMR. Approximately 20 participants were excluded from the study due to misplacement of post SCARED documentation which narrowed our ability to include additional subjects into the study. Other hypothesis are that children or adolescents who attended the majority sessions may not have been actively involved or engaged with the discussions or homework assignments which affects their sense of development through the program further affecting their own self report of their anxiety level. Unfortunately, providers can only offer the services and create activities that focus on engaging the entire group, but it is solely the individual's willingness to participate that will make all the difference in how much they receive from the CBGT. Lastly for younger children, there were some misunderstandings and different reading skill levels that may have potentially affected

**Table 1:** Demographic characteristics.

| Variables | | Scared Child (N=9) | |
|---|---|---|---|
| | | **Mean** | **SD** |
| Ages (Years) | | 11.44 | 3.71 |
| | | | |
| Number Of Sessions Attended | | 6.0 | 1.0 |
| | | **N** | **%** |
| Gender | Male | 4 | 44.44 |
| | Female | 5 | 55.56 |
| Session | | | |
| | Session 1: 07/07/16 | 2 | 22.22 |
| | Session 2: 10/27/16 | 1 | 11.11 |
| | Session 3: 03/02/17 | 6 | 66.67 |
| Diagnoses | | | |
| | Anxiety Disorder | 4 | 44.44 |
| | Generalized Anxiety Disorder | 2 | 22.22 |
| | Social Phobia | 1 | 11.11 |
| | Generalized Anxiety Disorder and Moderate Anxiety | 1 | 11.11 |
| | Anxiety and Separation Anxiety | 1 | 11.11 |

**Table 2:** SCARED total and subscale scores.

| Subscale Measures | Assessment Time | Scared Child (N=9) | | Scared Parent (N=6) | |
|---|---|---|---|---|---|
| | | **Mean** | **P Value** | **Mean** | **P Value** |
| Total | Baseline | 23.11 | 0.138 | 35.67 | **0.011*** |
| | Post Therapy | 18.44 | | 28.33 | |
| Panic Disorder | Baseline | 3.78 | 0.315 | 5.83 | **0.042*** |
| | Post Therapy | 2.89 | | 4.67 | |
| Generalized Anxiety Disorder (Gad) | Baseline | 7.11 | 0.158 | 13.33 | 0.129 |
| | Post Therapy | 5.78 | | 11.67 | |
| Separation Anxiety | Baseline | 4.11 | **0.027*** | 5.17 | **0.034*** |
| | Post Therapy | 2.56 | | 3.50 | |
| Social Phobia | Baseline | 6.22 | 0.448 | 9.17 | **0.024*** |
| | Post Therapy | 6.33 | | 7.33 | |
| School Avoidance | Baseline | 1.89 | **0.033*** | 2.17 | 0.102 |
| | Post Therapy | 0.89 | | 1.17 | |

the ability to properly respond to the prompts on self-SCARED report form. Our staff, as well parents, were present during the time children and adolescents were completing the forms and offered their assistance in explanations, however the participants would have had to request assistance in completing the SCARED form.

The results of this study should be considered in recognition of several limitations. The July 2016 group session had the greatest number of participants who met the inclusion criteria however the post SCARED evaluation was misplaced and not uploaded into the EMR which significantly limited the number of subjects within our study. In addition, due to some of the missing information within the EMR, some participants have pre- or post-evaluations from either months before or months after the group therapy was completed. Parent SCARED analysis was also limited due to different parents accompanying the child or adolescent on the first or last day leading to different parents completing the pre- and post-SCARED affecting our ability to compare the assessments. In terms of retention rates, many participants lived lengthy distances from the Psychiatry Medical Office that could have potentially affected the number of sessions attended.

Due to small sample size, results are not statistically significant; however, CBGT still remains an important tool in treating Generalized Anxiety Disorders, especially in areas where psychological availability is scarce. For future directions, we seek to have a larger sample size with a repeated analysis in determining effectiveness of CBGT, to take a deeper look into how the CBGT programs are being run, to identify activities that could be used to fully engage participants, and to enhance retention rates of the participants. These are directions that could be taken to work on seeing significant improvements in self-SCARED scores.

## Conclusion

This study demonstrated that CBGT sessions are effective. Using SCARED screening tool, both for baseline and post CBGT, we have gained a better understanding of the decreases in both composite and subscale anxiety scores. Despite not having statistical significance in composite scores within the self-reported SCARED, we can assume that the parents who completed the SCARED recognized the beneficial aspects of our program. From the results of this study, we will be able to adjust our curriculum to include more interactive activities that teach psychoeducation, relaxation techniques, role play, basic cognitive restructuring skills, problem-solving, and social skills for our participants to experience a greater benefit from the CBGT program. This will have a positive impact and beneficial effects on the future groups that will participate in group therapy. The benefits obtained from this study will provide valuable information for future studies and psychiatrists and parents interested in engaging in cognitive behavioral therapy groups.

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