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A Randomized Controlled Trial of the Child Anxiety Multi-Day Program (CAMP) for Separation Anxiety Disorder

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Abstract

While the efficacy of cognitive behavior therapy for childhood anxiety disorders, including separation anxiety disorder (SAD), has been established, tailoring such treatments to particular interests and needs may enhance uptake of evidence-based interventions. The current investigation evaluates the feasibility and preliminary efficacy of an intensive, cognitive-behavioral intervention for girls with SAD provided within the novel context of a one-week camp-like setting, the Child Anxiety Multi-Day Program (CAMP). Twenty-nine female children aged 7 to 12 with a principal diagnosis of SAD were randomized to immediate CAMP treatment ($n = 15$) or waitlist (i.e., delayed treatment; $n = 14$) condition during the course of this randomized controlled trial. Children in the immediate treatment group evidenced significant reductions in SAD severity, functional impairment, and parent report of child anxiety symptoms relative to the waitlist condition. The intervention's positive therapeutic response suggests one possible delivery model for surmounting difficulties faced in the dissemination of weekly treatments for SAD.

Keywords

cognitive behavioral therapy; child anxiety; separation anxiety disorder; intensive treatment; summer camp

Separation anxiety disorder (SAD) shares with specific phobia the earliest age of onset ($M = 7$ years) and is the most prevalent mental health disorder among children ages 12 and below [1, 2]. SAD in childhood is associated with a greater risk of developing additional mental disorders later in life [3, 4]. Given the early onset, prevalence, and negative sequelae of this disorder it is imperative that psychosocial treatments target childhood SAD efficiently, effectively, and in a manner that is developmentally compatible. This justification predicated the initial development of a novel intervention, the Child Anxiety Multi-Day Program (CAMP) [5], which utilizes cognitive behavioral treatment skills in an intensive, daily format. CAMP is uniquely designed for a sample of younger children with separation anxiety concerns and is framed to youth participants as a week-long, summer camp-like experience. In the current paper, we describe the rationale for CAMP, along with the method and results of an investigation examining the feasibility and preliminary efficacy of CAMP for SAD.

Research supports the efficacy of cognitive behavior therapy (CBT) procedures with anxious youth, including those with SAD [e.g., 6–10]. Despite this existent body of support, however, approximately 80% of children in need of mental health services do not receive

any form of treatment [11], with even fewer receiving an evidence-based treatment approach [12]. Furthermore, as many as 50-70% of children with anxiety disorders, more specifically, have not received treatment [13, 14]. Given the need for improved dissemination and implementation of effective interventions for anxious youth [15], it is possible that efforts to enhance a protocol's fit with a target population, including a greater emphasis on compatibility with both the consumer and the disorder itself, might enhance efficacy and -- particularly -- consumer appeal, potentially resulting in greater uptake of the intervention. Indeed, Kazdin and Blase [16] suggest that expanded models of treatment delivery -- beyond the dominant model of weekly, individual therapy -- are needed to reduce the burden of mental illness. These authors propose using special settings (e.g., primary care offices, schools, community centers, family settings, among others) to reach individuals who might not otherwise seek treatment.

Summer camp might be considered one such special setting -- unique to childhood -- in which the developing child can forge important relationships and expand his or her repertoire of experiences and roles, outside of more traditional environments and restrictions such as school. Importantly, the camp setting in itself provides a naturalistic context for repeated exposure to separation from caregivers, an integral component of treatment targeting SAD specifically. A camp-based approach to anxiety treatment also allows for a focus on developmentally appropriate activities that are engaging and enjoyable for the child. At the same time, implementing treatment in a recreational context has the potential to normalize the receipt of mental health services.

In addition, it is clear that CBT interventions can be feasibly and effectively delivered to youth in a group format [6, 10, 17]. Moreover, a group atmosphere may be especially beneficial for anxious youth, given the opportunity for social interaction with peers as well as peer and therapist modeling of desired behaviors, such as approaching feared situations [18]. A camp-based group has the added benefit of providing unique opportunities for exposure to typical separation situations not easily replicated in individual treatment, such as field trips, play-dates, sleepovers, and -- of course -- summer camp.

Finally, a camp-based treatment approach may have the potential to attract greater public interest relative to traditional therapy while simultaneously providing an intervention that is compatible with children and families experiencing anxiety. For instance, in addition to being particularly time-efficient and potentially engaging for children, the intervention may better fit into certain families' schedules relative to traditional, weekly therapy, due to its ability to be delivered during school vacation weeks or summer vacation.

The intensive, one-week nature of CAMP was derived from evidence suggesting that brief and intensive treatment formats are efficacious for youth exhibiting other anxiety disorders, such interventions spanning eight-days for adolescent panic disorder and agoraphobia [19], three-weeks for obsessive compulsive disorder [20], and -- briefest of all -- one-session for specific phobias [21]. While the camp-like setting utilized in this investigation is unique in the treatment of internalizing disorders, therapeutic summer programs are available for the treatment of externalizing disorders in children, particularly attention-deficit/hyperactivity disorder (ADHD) [22].

CAMP was previously pilot tested among an initial group of five female children, aged 8 to 11, each with a principal diagnosis of SAD [23]. A replication of this original group was then conducted, again with five female children in the same age range. Across both pilot groups, seven of the ten participants no longer met diagnostic criteria for SAD at immediate post-treatment. Two-month follow-up data was collected only for the first group, at which point none of the five participants met criteria for a clinical-level SAD. Reductions in the

severity of other comorbid anxiety diagnoses not specifically targeted by the intervention were observed in both trials, including generalized anxiety disorder, specific phobia, and social phobia. Given the promising results of these initial groups, the current study aims to evaluate the feasibility and preliminary efficacy of CAMP for SAD using a randomized design.

Method

Participants

Participants were recruited through referrals to the University-based research clinic where the study took place as well as through advertisements placed in a local parenting magazine. Twenty-nine female children (aged 7 to 12) with a principal or co-principal diagnosis of SAD were enrolled in the study and randomized to an immediate CAMP treatment ($n = 15$) or waitlist (i.e., delayed treatment; $n = 14$) condition. Twenty-eight of the 29 (96.6%) consented participants ($n = 14$ in each condition) subsequently received and completed the intervention. The single participant who terminated the study did so prior to treatment onset, as the family did not respond to study-related contacts after consenting to the investigation. Thus, the reason for termination is not known. The study CONSORT diagram highlighting the between-subjects design is presented in Figure 1. The mean age of the study participants was 9.18 years ($SD = 1.58$). The sample was primarily Caucasian (89.3 %) and Non-Hispanic (100%). Average family income of approximately \$100,000 was reported, and the majority of the children's caregivers were married (92.9%). Of the 31 parents who participated in the parenting groups, 90.3% were female ($n = 28$) and 9.7% were male ($n = 3$).

Inclusion and exclusion criteria

Participants were assigned a diagnosis of SAD based on a clinician composite diagnosis and a clinical severity rating (CSR) greater than or equal to four (on 0-8 scale) obtained from the Anxiety Disorder Interview Schedule for DSM-IV, Child and Parent Versions (ADIS-IV-C/P) [24]. Only females were included at this stage in treatment development. This choice was a pragmatic one, as treatment involved a therapeutic sleepover for which a single gender group would be most acceptable to parents and participants, as well as a method of enhancing group cohesion [25]. Children previously enrolled in CBT were eligible to participate as long as current separation anxiety symptoms were still deemed clinically significant at the initial intake point (indicated by an SAD diagnosis with a severity rating in the clinical range). Participants on psychotropic medications were included if they were willing to maintain a consistent dose throughout the treatment program and met medication stabilization requirements prior to their initiation of services (i.e., a consistent dose/type of medication for one month prior to enrollment). A subset of the sample received previous or adjunctive treatment: two participants received previous CBT that did not target SAD (7.1%) and eight participants were concurrently taking psychotropic medications (28.6%), including selective serotonin reuptake inhibitors (SSRIs; $n = 6$; 21.4%), mood stabilizers ($n = 1$; 3.6%), and stimulants ($n = 1$; 3.6%).

Patients with bipolar disorder and psychotic disorders were excluded because of the ethical implications of requiring such individuals to refrain from additional treatment during the program and the questionable efficacy of providing such individuals with abbreviated clinical service duration. Similarly, individuals were excluded if their anxiety or mood symptoms were primarily due to a medical/physical condition, as alternative treatment would be clinically indicated. Lastly, individuals with a cognitive level or impairment that might prevent basic comprehension of questionnaire or treatment materials were also excluded.

Procedure

Research design—Approval for this research study was obtained from the University's Institutional Review Board prior to the onset of data collection. This investigation utilized a minimal contact, waitlist-controlled trial design with 29 participants recruited to the study and randomized to either the immediate treatment ($n=15$) or waitlist ($n=14$) condition. All participants in the waitlist condition received the treatment program approximately eight weeks after those assigned to the immediate treatment condition. Over three consecutive summers, six iterations of CAMP for SAD were conducted (two programs per summer), with four to six participants per treatment group ($M = 4.83$). Thus, approximately ten participants ($M = 9.67$) were enrolled each summer over a three-year period. Each summer, after determining eligibility, participants were randomized to either immediate treatment (mid-June program) or the waitlist condition. Those randomized to the waitlist condition then completed the treatment program in August if inclusion criteria were still met, as determined by a post-waitlist assessment in which an abbreviated version of the diagnostic interview was administered. The assessment battery (described below) was administered at pre-treatment/pre-waitlist, immediately post-treatment, and post-waitlist/six-weeks following treatment to assess changes in symptom reports and functional outcomes. In addition, a treatment satisfaction questionnaire was administered following the intervention. An Independent Evaluator (IE) conducted all assessments after the pre-treatment/pre-waitlist time point. The IE was a graduate student in a clinical psychology Ph.D. program that was otherwise uninvolved in the investigation, and her training was consistent with the diagnostic interview training procedure and competency requirements for all graduate students working in the clinic.

Measures

The Anxiety Disorders Interview Schedule, Child and Parent Versions (ADIS-IV-C/P) [24] was administered to determine eligibility and diagnostic status. These interviews permit the diagnosis of all DSM-IV anxiety disorders, as well as other disorders (e.g. mood and externalizing disorders of childhood). Diagnoses from both the parent and the child interview are combined to form a composite diagnosis using specific guidelines outlined by Silverman and Nelles [26]. Diagnoses assigned a clinical severity rating (CSR) of 4 or above on an 8-point scale (e.g., 0 = absent; 8 = very severely interfering/disabling), based on a clinician-rated consensus of parent and child reports, are considered to be clinical diagnoses, while those assigned a rating less than 4 are considered subclinical. Research demonstrates that the ADIS-IV-C/P has good interrater ($r = .98$ for the ADIS-C; $r = .93$ for the ADIS-P) and test-retest reliability ($k = .76$ for ADIS-C; $k = .67$ for ADIS-P) [26, 27]. A kappa of .92 was found for overall principal diagnoses and .89 for SAD specifically using combined ADIS-IV-C/P information [28]. Using combined parent and child interviews, the ADIS-IV-C/P also demonstrated excellent test-retest reliability for the diagnosis of SAD ($k = .84$) [29]. Diagnostic calibration meetings were held weekly with expert ADIS-IV-C/P raters to maintain fidelity to this diagnostic interview. A brief version of the ADIS-IV-C/P (e.g. the Mini ADIS-IV-C/P) was administered to participants at the post-waitlist, immediate post-treatment, and follow-up assessment points.

The Global Assessment Scale for Children (CGAS) is a clinician-rated measure of global impairment and functioning that uses a scale of 1 (lowest) to 100 (highest) [30]. Green, Shirk, Hanze, and Wanstrath [31] provide evidence for the psychometric soundness of the CGAS and suggest that ratings obtained in clinical contexts may reflect evaluations of functional competence rather than symptom severity. The CGAS has been shown to be sensitive to CBT for anxiety [7].

The Spence Children's Anxiety Scale, Child and Parent Versions (SCAS-C/P) are designed to assess a wide range of anxiety symptoms from both child and parent perspectives and include a factor/scale assessing separation anxiety symptoms [32]. The SCAS child-report consists of 45-items, 38 assessing anxiety and seven assessing social desirability, while the parent-report consists of 39-items. Total internal consistency of .92 has been found across studies and internal consistency of the separation subscale ranges from .62 to .74 [33-36]. Three and six month test-retest reliabilities of .60 and .63, respectively, were reported for the total score [35, 36]. The total score and the separation anxiety subscale score were used in this study.

The Client Satisfaction Questionnaire (CSQ-8) is a one-dimensional self-report instrument assessing global patient satisfaction [37]. The CSQ has been found to be substantially correlated with treatment dropout, number of therapy sessions attended, and change in client-reported symptoms [37]. The CSQ-8 total score ranges from 8 to 32, with higher numbers indicating higher levels of satisfaction. A free response section was added to the end of this measure to allow for participant comments and feedback about the program. The CSQ-8 was completed by parents following the intervention.

Intervention Phase

Following the pre-treatment/post-waitlist assessment, participants entered the intervention phase. Treatment sessions were conducted by the PI and two additional graduate student and/or research assistant therapists trained to administer the intervention. All sessions were held at a university-based research clinic specializing in the treatment of anxiety disorders.

Description of the intervention—The Child Anxiety Multi-Day Program for SAD utilizes cognitive-behavioral principles for the treatment of anxiety in youth [e.g., 6, 8-10], tailored specifically to meet the one-week timeline, developmental needs and diagnostic features of the participants. The intervention -- starting as a day-camp and ending with a therapeutic sleepover -- relies on child engagement in activities of increasing difficulty due to graduated reduction of parental presence over the treatment week. The essential components of CBT for anxiety used in the current intervention included psychoeducation, somatic anxiety management, cognitive restructuring, problem solving, graduated exposure (inherent in the daily separation to attend CAMP as well as nightly homework), rewards, and relapse prevention. Given the camp-like emphasis, skills training was provided in a manner meant to be overtly enjoyable and engaging for young participants throughout. Somatic identification was taught in part by pairing the participants with one another and asking each to trace their partner's body on large paper, after which the children drew in specific somatic cues. Concrete tools were used to teach cognitive restructuring, such as cartoons with thought bubbles and teaching participants to collect "clues" for their worried thoughts through a mystery game. After introducing simplified "thinking traps," pictures of each "trap" were posted around the room and participants were encouraged to run to the corresponding picture when a distorted thought was voiced. Participants were also instructed in the use of simple coping self-statements through a game in which a ball was thrown between children on teams "calm thought" and "worried thought." The nature of the separation exposures -- provided repeatedly throughout the treatment week -- and treatment context was designed to be developmentally relevant, as children commonly encounter play-dates, sleepovers, and summer camps, and often have difficulty separating from caregivers for each. Salient rewards for females of this age group (e.g., beaded necklaces, picture frames, nail polish, water bottles, school supplies) were earned upon separation (see description of "treasure hunt" below) and at the end of each successful treatment day. A caregiver component, derived from the *Building Confidence* program [38] and other relevant literature, was also incorporated into treatment. During the intervention week,

parent groups were held in which information was presented about the management of SAD symptoms (see below for more information on parenting intervention).

Total duration of treatment was limited to seven consecutive group sessions conducted over a seven-day period, with graduated daily exposure to separation from caregivers. The first four treatment sessions were held from 10am to 3pm, with immediate caregiver separation (drop-off) expected by the third day of the intervention. Each of these day sessions began with a therapeutic child group (10am to 12pm), during which separation anxiety-related issues were explored and cognitive-behavioral skills taught. The first four days concluded with a developmentally appropriate and increasingly challenging “field trip,” or exposure activity in the area (e.g. jewelry making, pottery painting, bowling, etc.; 1pm to 3pm) during which these newly acquired skills were applied. In order to attend each “field trip,” children had to first separate from their caregiver. As such, these exposure activities served as a reward for separation. If a participant expressed anxiety during the recreational activity (e.g., “I miss my mom”), she was encouraged by one of the counselors to use a treatment skill. For example, children expressing anxiety or distress were encouraged to identify the worried thought and then generate a coping thought through detective thinking, use relaxation strategies, or just “ride the wave” of anxiety. The fifth session consisted of an evening activity (e.g. movie night; 6pm to 9pm) to expose participants to being away from home and in an urban environment at night. The sixth and seventh sessions consisted of a therapeutic sleepover -- expected to be the most challenging exposure of all -- followed by an awards ceremony the next morning (6pm until 9am). The camp sleepover took place in the same, large group room within the university-based research clinic where the remainder of treatment was delivered. Meant to replicate a more naturalistic “sleepover” experience, counselors could be woken in the middle of the night by a child in distress, though this never occurred during the open trial. The lead therapist was available at all times throughout the treatment week, including the sleepover, to ensure safety and provide consistent availability of care.

To facilitate daily separation from parents, a shaping procedure was implemented through the use of a “treasure-hunt” game with a group reinforcement component. Each participant was required to separate from her parent prior to receiving a “treasure,” or reward, at each location, housed inside of a plastic egg. “Treasures” sought during this “hunt” at various treatment locations throughout the week included an individual reward (e.g., silly bands, stick-on jewels, lip balm) and a single element of a larger reward (a letter to eventually spell out the name of the group reward) to be earned by the group as a whole toward the end of the treatment week. Child engagement in this game was steadily reduced to allow for a more extensive exposure to separation as the week progressed. See Table 1 for detailed schedule of treatment components and activities provided during the week.

Parenting intervention: Parents were asked to be present for portions of the morning treatment groups with their daughters on days one and two, participated in 1 to 1.5 hour parent-only groups throughout the treatment week, and attended the awards ceremony where possible. Parent involvement was gradually and systematically faded over the course of the intervention. Parenting intervention components from efficacious treatments for child anxiety disorders as well as relevant literature concerning parenting factors related to separation anxiety, such as the *Building Confidence* program, were incorporated into the protocol [38-42]. In addition to the treatment skills presented while parents attended the child groups (e.g. psychoeducation, exposure, rewards, cognitive restructuring), parents were separately instructed in the use of differential reinforcement skills, communication techniques, and modeling to facilitate the child’s mastery of new situations. Parents were also provided with information about setting up exposures at home, reducing parental

intrusiveness, identifying safety behaviors, and addressing common pitfalls in the context of cognitive-behavioral treatment.

Therapist training procedures—Therapy was provided to each treatment group by the developers as well as two additional doctoral candidates and/or master's level research assistants enrolled in a Clinical Psychology Ph.D. program. Each treatment provider was female, given the all-female participant groups. Therapist training consisted of a two-hour didactic training prior to treatment onset and 30-minutes of protocol review/supervision after the completion of each daily session. A treatment developer was a primary therapist for each group. Supervision was provided by a Ph.D.-level clinician over the course of the treatment week. On-site supervision was also provided by a female Ph.D.-level clinician and/or registered nurse during the therapeutic sleepover. When not physically present, these supervisory resources were always available by phone, in an "on-call" manner and additional Ph.D.-level clinicians were available on-site in case of emergencies during the treatment day.

Results

Preliminary Analyses

Independent samples t-tests and chi-square analyses were used to assess pre-assessment differences between the immediate treatment and waitlist groups on both demographic and outcome variables. The randomization procedure was effective and no significant pre-treatment differences were found between groups on demographic variables including age, race, medication status, SSRI status, or prior CBT treatment. Participants on medication did not significantly differ in their outcomes when compared to participants not on medication. Similarly, no differences in outcomes were found between participants on SSRIs and those who were not or between participants with prior CBT and those without. No significant pre-assessment differences were found on clinical outcome measures between groups. Descriptive statistics for the sample are presented in Table 2.

Each participant who entered the intervention phase completed the one-week treatment program, and all but one participant (who went home at 11:00pm and returned for the awards ceremony) completed the therapeutic sleepover. As such, intent-to-treat analyses were not necessary. However, missing data existed across assessment points. As missingness of data was not associated with symptom severity, as measured by the primary outcome variables at pre-treatment/pre-waitlist, it was assumed to be missing at random. Thus, missing data was addressed using the last observation carried forward imputation method [e.g., 43]. As such, the last observed non-missing value was used to fill in missing values at a later point in the study (e.g. pre-treatment values were substituted for post-treatment and post-treatment substituted for follow-up where relevant).

Assessment of Treatment Effects

Table 3 shows the means and standard deviations of all outcome variables at pre- and post-assessments for the immediate treatment and waitlist conditions. For the analyses below, pre-assessment refers to the pre-treatment/pre-waitlist time point, while post-assessment refers to 6-week follow-up for the immediate treatment group and post-waitlist for the control group, given corresponding time frames. We used analysis of covariance to assess the effects of treatment condition: for each outcome variable, we examined scores at post-assessment as a function of treatment condition, while including pre-assessment scores as a covariate. We then compared scores at pre and post-assessment points for each condition using paired samples t-tests, and calculated treatment effect sizes (partial η^2) for each outcome measure.

We predicted a main effect of treatment condition for clinical severity ratings (CSRs) of SAD diagnoses, such that children receiving immediate treatment would show greater reductions in diagnostic severity than those in the waitlist condition. Pre-assessment CSRs were a significant predictor of post-assessment CSRs, $F(1,24) = 7.46, p < .02$, partial $\eta^2 = .24$. More importantly, and as predicted, we observed a main effect of treatment condition, $F(1, 24) = 24.85, p < .001$, partial $\eta^2 = .51$, such that SAD CSRs were significantly lower at the post-assessment point in the treatment condition than in the waitlist condition. In the treatment group, planned comparisons revealed a significant decrease in SAD CSRs from pre- to post-assessments, $t(13) = 5.98, p < .001$. There was also a significant decrease in SAD CSRs in the waitlist group, $t(13) = 2.31, p < .05$, though this decrease was smaller in magnitude.

Next, we examined the percent of participants who no longer met diagnostic severity criteria for SAD (defined as obtaining a SAD CSR ≥ 3 on the ADIS-IV-C/P) at the post assessment points. Whereas 0% of participants became subclinical over the waitlist period, 50% of participants in the treatment group no longer met diagnostic severity criteria for SAD at the follow-up assessment, $\chi^2(1) = 8.78, p < .01$.

We also predicted a main effect of treatment condition for the clinician-rated CGAS. Pre-assessment ratings were a significant predictor of post-assessment ratings, $F(1,23) = 11.77, p < .01$, partial $\eta^2 = .34$ and we observed the predicted main effect of treatment condition, $F(1, 23) = 11.06, p < .01$, partial $\eta^2 = .33$, such that ratings were significantly lower (indicating better functioning) at the post-assessment point in the treatment condition than in the waitlist condition. In the treatment group, planned comparisons revealed a significant increase from pre- to post-assessments, $t(13) = 4.05, p = .001$. There was also a significant increase in CGAS ratings in the waitlist group, $t(11) = 3.10, p = .01$, though this change was smaller in magnitude.

We observed the predicted main effect of condition on parent report of child anxiety (SCAS-P), but not on child self-report (SCAS-C). Pre-scores were a significant predictor of post-scores for the SCAS-P total score, $F(1,23) = 10.38, p < .01$, partial $\eta^2 = .31$ and the SCAS-P SAD subscale, $F(1, 23) = 15.89, p = .001$, partial $\eta^2 = .41$. More importantly, we observed a significant main effect of condition for both the total score, $F(1, 23) = 4.94, p < .05$, partial $\eta^2 = .18$ and the SAD subscale of this parent measure, $F(1, 23) = 4.33, p < .05$, partial $\eta^2 = .16$. Contrary to hypotheses, children receiving the intervention did not show greater reductions than those in the waitlist condition on child self-report of anxiety (SCAS-C total score or SCAS-C SAD subscale), all F s < 1.10 , all p s $> .31$. In the treatment condition, planned comparisons revealed a marginally significant decrease from pre- to post-assessments, $t(13) = 2.14, p = .052$; there was no significant decrease in the waitlist condition, $t(11) = .13, NS$.

Assessment of Post-Intervention Treatment Effects or Maintenance of Treatment Gains

In order to assess the maintenance of treatment gains over time, as well as the intervention's impact on anxiety comorbidity, we collapsed our data across the immediate treatment and waitlist (delayed treatment) conditions after those in the waitlist received the intervention. We then conducted repeated measures ANOVA using the full sample, followed by paired samples t-tests to examine differences between time points. Means and standard deviations for each outcome variable in the full sample at pre-treatment, immediate post-treatment, and follow-up points are presented in Table 4.

Considering diagnostic status with the full sample of treatment completers, in the immediate interval following the one-week intervention (post-treatment assessment), 43% of participants no longer met diagnostic severity criteria for an SAD diagnosis. At the six-week

follow-up assessment, 61% of participants no longer met diagnostic criteria for SAD. As a group, clinical severity ratings of SAD diagnoses decreased significantly over time, $F(2, 52) = 52.15, p < .001$, partial $\eta^2 = .67$. Planned comparisons revealed a significant decrease from pre- to post-treatment in SAD CSR, $t(26) = 7.08, p < .001$ with further reductions from post-treatment to follow-up points, $t(27) = 3.40, p < .01$, suggesting not only maintenance of previous improvement, but continued improvement over time.

We also found significant reductions over time in number of comorbid anxiety conditions, $F(2, 52) = 8.63, p < .01$, partial $\eta^2 = .25$. A significant decrease occurred from pre to immediate post-treatment, $t(26) = 3.06, p < .01$, with gains maintained through the follow-up point, $t(27) = 1.41, NS$. See Table 5 for additional detail on comorbid conditions over time.

Additionally, we observed an effect of time on the total score and the SAD subscale of the SCAS-C and SCAS-P as well as the clinician-rated CGAS, all $F_s > 6.71$, all $p_s < .01$. Post-treatment gains were maintained over the follow-up period for each of these outcome measures, while we observed continued improvements between the immediate post and follow-up points on the SCAS-P total score, $t(26) = 2.28, p < .05$, SCAS-C total score, $t(26) = 2.40, p < .05$, and CGAS ratings, $t(25) = -3.93, p < .01$.

Treatment Satisfaction

Parent-rated satisfaction with the treatment program was assessed using the CSQ-8 as well as qualitative feedback. On the CSQ-8, parents reported very high levels of treatment satisfaction, approaching the maximum total score of 32 ($M = 31.15, SD = 1.60$). In addition, qualitative responses provided further support for this intervention and its unique format. Comments included, "This program went above and beyond our expectations. The skills we learned have made an immediate difference to our family." Parents also described changes in their children's sense of self-efficacy, with comments such as, "My daughter did things I never thought she would! Her confidence in herself soared this week. We are very grateful for our experience." Parents were also satisfied with the parenting intervention, stating, "This has been the best program we have ever done. I love how the parents were involved and gave suggestions about how to deal with our situations. All of the advice was realistic for everyday life."

While no long-term follow-up data were collected regarding satisfaction, communication initiated by parents approximately one year after treatment anecdotally suggests child and parent satisfaction as well as maintenance of treatment gains across settings. "It's funny how one week can have such a huge positive impact on someone. But it did. She still says that the best camp experience she's ever had was the one she did with you at Anxiety Camp! She has gained an incredible amount of self confidence having learned how to manage her everyday anxiety." "She has never been better thanks to the intervention and jump start she had at CAMP. CAMP was an excellent experience for my daughter, husband, and me. You intervened at a very critical time for her and I will always believe that her experience at CAMP changed her course for the better. She continues to use the skills she acquired from her counselors. Thank you for making such a difference in my little girls' life." "We loved CAMP and it is definitely the most helpful treatment she has received for her anxiety issues. She went on a 3 night class trip and she did it with flying colors!"

Discussion

The results of this study provide preliminary support for the feasibility and efficacy of a seven-day, exposure-based, intensive group treatment program for female children with SAD. Relative to waitlist, children in the treatment group showed clinically and statistically significant reductions in SAD severity, functional impairment, and parent-rated anxiety.

Indeed, by the 6-week follow-up assessment, the average clinical severity ratings of SAD diagnoses had fallen below the clinical range, with 50% of participants in the treatment group no longer meeting diagnostic criteria for SAD. In contrast, for the control group, clinical severity ratings of SAD diagnoses remained at clinical-levels following the waitlist period with 100% of participants retaining their SAD diagnosis. While we also found a decrease in SAD severity over the waitlist period, none reached subclinical levels, such that the disorder was still present despite some improvement. Other waitlist-controlled trials of CBT for youth anxiety have shown similar improvements over the waitlist [e.g., 8, 44, 45]. One might speculate that this is related to regression to the mean. As in these previous investigations, change in the current study is greater and more clinically significant in the treatment condition.

The remission rates found in the current study approach those of other intensive CBT interventions for anxious youth. For example, in a large randomized trial of the One-Session Treatment (OST) for specific phobia, 52% of youth were diagnosis free at post-treatment [21]. An intervention of similar duration to the current study -- the one-week intensive treatment for panic disorder -- resulted in 63% of adolescents classified as panic disorder free at post-treatment [19]. Treatment gains in the current study -- while impressive given the brevity of treatment -- were less pronounced than those achieved recently in a 16-session, disorder-specific SAD treatment program [46]. In this more traditional treatment format, 76% of children no longer fulfilled SAD criteria at the 4-week follow-up assessment [46]. However, children in the Schneider sample were younger (age 5-7) than the CAMP sample (age 7-12) and the diagnostic instruments differed between studies (ADIS-IV-C/P vs. Kinder-DIPS), making direct comparison difficult. Thus, comparing CAMP to other, 16-week CBT interventions for anxious children of a more similar age (9-13) may be useful. For example, Kendall et al. [8] found that 53% of their sample no longer met criteria for their primary anxiety disorder (including, but not limited to, SAD) at post-treatment; in CAMP, 50% of children in the treatment group no longer met criteria for SAD by the 6-week follow-up assessment. Using this comparison, CAMP participants achieved similar diagnostic outcomes in 7-weeks (after receiving only one-week of treatment) to those achieved after 16-weeks in the Kendall sample.

Notably, treatment gains following this relatively brief intervention continued to improve over time. When data from the two groups was combined, significant reductions in SAD severity and related anxiety symptomology, as measured by parent and child self-report, were maintained and -- in many cases -- enhanced over the follow-up period. The number of clinical-level comorbid anxiety diagnoses reported on the ADIS-IV-C/P also decreased over time, despite the intervention explicitly targeting only SAD. Given that components of CBT for SAD (i.e., exposure, cognitive restructuring, etc.) have demonstrated efficacy across anxiety disorders, it is likely -- though still notable given the brevity of treatment -- that the CBT skills taught during CAMP generalized to other, similar forms of psychopathology. Parents were also taught how to use exposure, differential attention, rewards, etc. -- applicable across anxiety disorders -- to promote brave behavior in their children, which may have altered parents' strategies for reinforcing anxiety more generally.

Consistent with previous examinations of this treatment, very high levels of treatment satisfaction were reported. The CSQ-8 was also used in a recent study comparing individual CBT, computer-assisted CBT, and a control condition for child anxiety [47]. Mean ratings of parent satisfaction using the CSQ-8 total score were 26.8 (2.6) for individual CBT and 26.9 (4.1) for computer-assisted CBT. While satisfaction was very high for both individual and computerized CBT in this study, CAMP achieved even higher satisfaction ratings ($M = 31.15$), suggesting the possibility of greater consumer satisfaction relative to more traditional, individual CBT formats.

In addition to improvements in SAD diagnostic severity, parent-reported anxiety, and clinical-rated functional impairment, we anticipated that children receiving the intervention would display significantly greater improvements than those in the waitlist condition on self-report of anxiety. Our results did not support this hypothesis. Informant discrepancies are not unexpected in child clinical research, and low parent-child agreement has been observed when assessing child anxiety in particular [48]. Given that the post-treatment assessment occurred only days after completion of the one-week program, it is possible that children remained skeptical about the robustness of change at immediate post-treatment for at least two reasons: the recency of their clinical-level symptoms, and their as-yet limited opportunity to encounter situations outside of CAMP activities that may have previously triggered anxiety and/or avoidance. While it is possible that the children did not share their parent's impressions of improvement, it is also possible that the diagnostic interview better elicited from children changes in separation anxiety symptoms not fully captured on self-report measures. Importantly, even if symptoms of anxiety remain following this one-week intervention, the behavior change evident over the course of treatment (e.g., each child was able to separate from her caregiver on a daily basis and all but one completed the sleepover) suggests that intensive, CBT interventions – such as CAMP – can decrease avoidance and interference with daily functioning, potentially placing each participant on a more positive developmental trajectory.

The intervention's feasibility and positive therapeutic response on SAD diagnostic status and severity may suggest one delivery model for handling some of the difficulties faced in the dissemination of standard, weekly treatments for child anxiety and psychopathology, more broadly. While our goal is not to replace individually-focused, weekly treatments for child anxiety, this type of intensive group setting may provide a unique draw for families, an ability to better engage youth in treatment, and the delivery of therapy in alternative contexts that may uniquely impact children [49]. Furthermore, the high levels of treatment satisfaction reported by families support the possibility that this intervention might provide a community-friendly option for anxious youth.

Limitations and Future Directions

This study is the first randomized controlled trial of CAMP for SAD and provides initial evidence to support the intervention's feasibility and efficacy. However, there are several limitations to this study that offer future directions for research. First, while widely used in clinical trials research, the use of a waitlist does not allow for between groups follow-up analyses, as those in the waitlist condition later received treatment. Consistent with prior investigations of CBT for child anxiety, this issue was handled by collapsing data across the two groups for analyses of change over time [8, 10, 44]. Nonetheless, a randomized controlled trial using an active comparison condition would remedy such concerns in the future. In addition, the use of a comparison condition that did not include comparable levels of caregiver separation (e.g., a waitlist that includes daily caregiver separation to participate in play activities rather than the intervention group) does not allow us to determine whether the other intervention components included in CAMP (e.g., cognitive restructuring, relaxation), outside of daily exposure to separation alone, are necessary to achieve symptom reduction. Further, given that child and parent participants were aware of their condition (immediate treatment vs. waitlist), it is possible that expectancy effects influenced the ratings provided. Finally, even being assigned to a waitlist can have differential effects, which may also have obscured findings. Of note, no differences in the patterns of results were found between those receiving immediate and delayed treatment (i.e., the waitlist group); thus, we felt comfortable combining both groups for analyses of change over time.

Our sample included children who were largely homogenous with respect to race, ethnicity, and caregiver marital status, with higher than average family income. Thus, future studies

examining the intervention's efficacy with a more diverse sample, both demographically and socioeconomically, are certainly needed. While there is reason to believe that CBT for anxious youth is effective with families of lower socioeconomic status than that of the current sample [e.g., 8], it is possible that families in CAMP had greater means with which to bring their children to treatment and also to take off work, when necessary, to attend the parent sessions. Similarly, the intensive nature of the program required a time commitment by families that may be unrealistic for many in the community. Future research is needed to calibrate the optimal degree of parent involvement necessary in our protocol. Even if the intervention is clinically suitable for families of lower SES, the issue of affordability remains. Given the high price of existing intensive treatments (e.g., \$2,300 USD for group treatment of selective mutism; \$3,700 USD for individual treatment of panic disorder), as well as the lack of insurance reimbursement for intensive formats, CAMP and similar interventions -- when provided outside of a research context -- may prove too costly for many families; this issue speaks to the importance of future research into the dissemination and implementation of CAMP into community and recreational contexts.

The short follow-up period in the current study also precludes speculation into the longer-term benefits of such a brief intervention, despite anecdotal evidence that suggests maintenance of gains across settings more than one year following CAMP. Given the stability of treatment gains through the six-month follow-up period found in the OST for specific phobias [21], we are hopeful that future trials of this intervention will demonstrate similar durability of treatment effects at six months and beyond.

Finally, relative to traditional group programs, this camp-based approach requires significant commitment with respect to time and resources. In the current study, treatment was offered free of charge to families due to grant funding, though each family was asked to cover the cost of their child's meals and to contribute \$20 for other incidentals. CAMP requires at least one CBT-trained clinician and one to two additional co-therapists, depending on group size, who are available for extended periods of time -- including an overnight. It is our hope that this potential limitation can be overcome by incorporating the treatment into existing contexts serving children, such as summer camps, schools, or after-school programs, where staffing and resources are similar to what might be needed to implement CAMP.

Overall, evidence of CAMP for SAD's feasibility, preliminary efficacy, and high levels of treatment satisfaction found in the current study provide initial support for this intervention as an additional treatment option that may appeal to certain families. Given the need to expand models of treatment delivery to decrease the burden of mental illness [16], the addition of a camp-based approach to child anxiety treatment is timely, providing a brief, engaging, and developmentally appropriate choice for organizations to consider as an additional option for the delivery of CBT to youth with separation anxiety.

Summary

Separation anxiety disorder is the most prevalent mental health disorder in childhood and is associated with a greater risk of developing additional mental disorders in adulthood. As such, it is imperative that psychosocial treatments target childhood SAD efficiently, effectively, and in a manner that is developmentally compatible. The current study evaluated the feasibility and preliminary efficacy of the Child Anxiety Multi-Day Program (CAMP), which utilizes cognitive behavioral treatment skills in an intensive, daily format. CAMP is a week-long, summer camp-like experience -- starting as a day-camp and ending with a therapeutic sleepover -- that relies on child engagement in activities of increasing difficulty due to graduated reduction of parental presence.

Twenty-nine female children aged 7 to 12 with a principal or co-principal diagnosis of SAD were randomized to an immediate CAMP treatment (n = 15) or waitlist (i.e., delayed treatment; n = 14) condition during the course of this waitlist-controlled trial. Relative to the waitlist condition, children in the immediate treatment group evidenced significant reductions in SAD severity, with 50% of participants no longer meeting diagnostic criteria for SAD 6-weeks following the intervention. Significant reductions were also noted in functional impairment and parent report of child anxiety symptoms relative to the waitlist condition, and all but one child completed the therapeutic sleepover. Given the need to expand models of treatment delivery, the preliminary efficacy and high levels of treatment satisfaction found in the current study provide initial support for this intervention as an additional treatment option that may appeal to certain families.

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Figure 1.

Flow of Participants through Assessment Schedule in the Waitlist-Controlled Trial

Note. This flowchart is an adaptation of the flowchart offered by the Consolidated Standard of Reporting Studies Group (CONSORT; Altman et al., 2001; Moher, Schulz, & Altman, 2001).

* Missing data at post-treatment was addressed using last observation carried forward.

Table 1
Outline of CAMP for SAD

Day	Treatment group content	Separation	Activity
Monday 10am - 3pm	Psychoeducation Exposure Rewards Break-out parent group	1:15pm: At store following bead selection	Jewelry Making
Tuesday 10am - 3pm	Homework review Cognitive restructuring Break-out parent group	11:45: Prior to lunch	Pottery Painting
Wednesday 10am - 3pm	Homework review Somatic anxiety management Interoceptive exposure Problem solving	10am: Drop off	Bowling
Thursday 10am - 3pm	Homework review Diaphragmatic breathing Progressive muscle relaxation Parent group	10am: Drop off	Duck Tour
Friday 6 – 9pm	Homework review Skill application as needed	6pm: Drop off	Movie Night
Saturday 6pm – overnight	Homework review Skill application as needed	6pm: Drop off	Sleepover
Sunday 8 – 9am	Review of skills Relapse prevention	n/a	Awards Ceremony

Table 2
Sample Characteristics

	Treatment (<i>n</i> = 14)	Waitlist (<i>n</i> = 14)	<i>t/χ²</i>	<i>p</i>
	mean (<i>SD</i>)	mean (<i>SD</i>)		
Age	9.43 (1.34)	8.92 (1.82)	.83	.42
Race	86% Caucasian 14% Asian	93% Caucasian 7% Asian	.37	.54
Current medication	21%	36%	.70	.40
Prior CBT	14%	0%	2.15	.14

Table 3
Means and Standard Deviations of Outcome Measures at Pre- and Post-Assessments* by Treatment Condition

	Treatment (<i>n</i> = 14)		Waitlist (<i>n</i> = 14)	
	mean (<i>SD</i>)		mean (<i>SD</i>)	
	Pre	Post	Pre	Post
SAD CSR	5.07 (.92)	3.14 (1.17)	5.15 (.80)	4.85 (.69)
SCAS-P	35.57 (11.26)	28.93 (9.56)	35.17 (10.29)	35.39 (8.21)
SCAS-P SAD	10.14 (2.41)	8.86 (2.48)	11.17 (3.61)	11.00 (2.45)
SCAS-C	36.29 (18.70)	29.67 (16.67)	38.50 (12.10)	34.41 (13.15)
SCAS-C SAD	8.36 (3.61)	6.93 (3.10)	11.00 (3.22)	9.16 (3.99)
CGAS	60.79 (7.26)	70.43 (9.91)	57.17 (4.59)	58.67 (4.72)

Note. SAD CSR = clinical severity rating of SAD; SCAS-P = Total score of Spence Children's Anxiety Scale, Parent report; SCAS-P SAD = SAD subscale of Spence Children's Anxiety Scale, Parent report; SCAS-C = Total score of Spence Children's Anxiety Scale; SCAS-C SAD = SAD subscale of Spence Children's Anxiety Scale; CGAS = Children's Global Assessment Scale

* Post-assessment refers to 6-week follow-up for the immediate treatment group and post-waitlist for the control group.

Table 4
Means and Standard Deviations of Outcome Measures Across Time in Combined Sample

	Assessment Point			<i>p</i>
	Pre-treatment	Immediate Post-treatment	6-week follow-up	
SAD CSR	4.96 (.81)	3.48 (1.28)	2.56 (1.42)	<.001
Num Comorb	1.15 (1.17)	.78 (.93)	.59 (.89)	<.01
SCAS-P	35.69 (9.65)	28.27 (9.98)	25.46 (9.58)	<.001
SCAS-P SAD	10.56 (2.38)	8.44 (3.25)	7.55 (2.68)	<.001
SCAS-C	34.70 (16.21)	30.55 (17.25)	26.38 (14.40)	<.001
SCAS-C SAD	8.59 (3.73)	6.87 (3.81)	6.63 (3.33)	<.001
CGAS	59.85 (6.18)	67.23 (6.98)	72.46 (8.75)	<.001

Note. SAD CSR = clinical severity rating of SAD; Num Comorb = number of comorbid anxiety diagnoses; SCAS-P = Total score of Spence Children's Anxiety Scale, Parent report; SCAS-P SAD = SAD subscale of the SCAS-P; SCAS-C = Total score of Spence Children's Anxiety Scale, Child report; SCAS-C SAD = SAD subscale of SCAS-C; CGAS = Children's Global Assessment Scale

Table 5
Diagnostic Comorbidity Across Time in Combined Sample: Number of Participants
Meeting Diagnostic Criteria for Clinical-Level Disorder (CSR 4 on the ADIS-IV-C/P)

	Assessment Point		
	Pre-treatment	Post-treatment	6-week follow-up
Specific Phobia	14	10	8
Social Phobia	10	8	4
GAD	3	2	1
OCD	1	1	1
Agoraphobia without History of Panic Disorder	1	0	0
Anxiety Not Otherwise Specified	1	0	0
ADHD, Inattentive Type	2	2	1

Note. GAD = Generalized Anxiety Disorder; OCD = Obsessive Compulsive Disorder; ADHD = Attention-Deficit/Hyperactivity Disorder. Diagnostic status assessed using ADIS-IV-C/P.