Published in final edited form as:

Child Psychiatry Hum Dev. 2015 October ; 46(5): 643–655. doi:10.1007/s10578-014-0507-x.

Anxiety Disorders in Caucasian and African American Children: A Comparison of Clinical Characteristics, Treatment Process Variables, and Treatment Outcomes

Arlene T. Gordon-Hollingsworth,

Department of Pediatrics, Psychology Section, Baylor College of Medicine, 6701 Fannin Street,
CC1630, Houston, TX 77030, USA

Division of Child and Adolescent Psychiatry, The Johns Hopkins University School of Medicine,
550 N. Broadway, Baltimore, MD 21205, USA

Emily M. Becker,

Department of Psychology, University of Miami, P.O. Box 248185, Coral Gables, FL 33124-0751,
USA

Golda S. Ginsburg,

Department of Psychiatry, University of Connecticut Health Center, 65 Kane Street, Room 1005,
West Hartford, CT 06119, USA

Courtney Keeton,

Division of Child and Adolescent Psychiatry, The Johns Hopkins University School of Medicine,
550 N. Broadway, Baltimore, MD 21205, USA

Scott N. Compton,

Department of Psychiatry, Duke University Medical Center, Suite 3527, Durham, NC 27710, USA

Boris B. Birmaher,

Department of Psychiatry, University of Pittsburgh, 3811 O'Hara Street, Pittsburgh, PA 15213,
USA

Western Psychiatric Institute & Clinic, University of Pittsburgh Medical Center, 3811 O'Hara
Street, Pittsburgh, PA, USA

Dara J. Sakolsky,

Department of Psychiatry, University of Pittsburgh, 3811 O'Hara Street, Pittsburgh, PA 15213,
USA

Western Psychiatric Institute & Clinic, University of Pittsburgh Medical Center, 3811 O'Hara
Street, Pittsburgh, PA, USA

John Piacentini,

Division of Child and Adolescent Psychiatry, UCLA Semel Institute for Neuroscience and Human
Behavior, 760 Westwood Plaza, Los Angeles, CA 90024, USA

Anne M. Albano,

Department of Psychiatry, New York State Psychiatric Institute, Columbia University Medical Center, 1051 Riverside Drive, New York, NY 10032, USA

Philip C. Kendall,

Department of Psychology, Temple University, 1701 North 13th Street, Philadelphia, PA 19122, USA

Cynthia M. Suveg, and

Department of Psychology, University of Georgia, 125 Baldwin Street, Athens, GA 30602, USA

John S. March

Division of Neurosciences Medicine, Duke Research Institute, 2400 Pratt Street, Durham, NC 27710, USA

Golda S. Ginsburg: gginsburg@uchc.edu

Abstract

This study examined racial differences in anxious youth using data from the Child/Adolescent Anxiety Multimodal Study (CAMS) [1]. Specifically, the study aims addressed whether African American ($n = 44$) versus Caucasian ($n = 359$) children varied on (1) baseline clinical characteristics, (2) treatment process variables, and (3) treatment outcomes. Participants were ages 7–17 and met DSM-IV-TR criteria for generalized anxiety disorder, social phobia, and/or separation anxiety disorder. Baseline data, as well as outcome data at 12 and 24 weeks, were obtained by independent evaluators. Weekly treatment process variables were collected by therapists. Results indicated no racial differences on baseline clinical characteristics. However, African American participants attended fewer psychotherapy and pharmacotherapy sessions, and were rated by therapists as less involved and compliant, in addition to showing lower mastery of CBT. Once these and other demographic factors were accounted for, race was not a significant predictor of response, remission, or relapse. Implications of these findings suggest African American and Caucasian youth are more similar than different with respect to the manifestations of anxiety and differences in outcomes are likely due to treatment barriers to session attendance and therapist engagement.

Keywords

Anxiety; Children; Treatment; Race

Introduction

Anxiety disorders are one of the most commonly diagnosed disorders among children and are known to impair child functioning in academic, social, and familial domains [2–4]. Anxiety disorders are likely to persist into adulthood and have been associated with numerous long-term negative outcomes (e.g., mood and substance use disorders in adolescence, poorer occupational and academic achievement in adulthood) [5]. Studies examining racial differences in anxiety disorders and treatment are scarce but can be helpful at shedding light on variations in the manifestation of anxiety, engagement in treatment, and treatment response and remission. Additionally, such studies can address ongoing issues

surrounding mental healthcare disparities, as race has been shown to be a factor predictive of mental health care service utilization [6]. A strong push to decrease mental healthcare disparities through several initiatives (e.g., research, community outreach) has been prioritized by the US government and the mental health field, as mental disorders are costly to our nation, leading to heightened morbidity and mortality and poorer quality of life. [7-9] A first step toward reducing these disparities is an examination of variations in the expression of symptoms, treatment process, and response to treatment, as well as mediators/moderators of this response.

To date, research comparing clinically anxious African American and Caucasian children on a variety of clinical variables has yielded mixed results. Several studies show that these racial groups in the United States of America are more similar than different in their presentation of anxiety and response to treatment, while others have identified differences in symptom profile (e.g., number and types of symptoms reported), treatment engagement, and outcomes [10-12]. However, this literature is limited by methodological shortcomings and variations that likely resulted in the discrepant findings, including small sample sizes, differing sample populations (e.g., clinic vs. community participants), restricted age ranges, differences in the types of measures used, and varying statistical approaches.

Furthermore, many of these studies failed to acknowledge the complexity of race and omitted the study of other variables that may influence or better explain racial differences. Despite the multitude of investigators who support the study of race in research, based on racial group membership [13, 14], the examination of race as a group variable in psychology research is strongly contested by a number of researchers. These researchers argue that the construct of race fails to capture the heterogeneity of individuals from a particular racial group (e.g. varying SES and education levels, living arrangements) [15]. With respect to this valid argument, the current study examined variables that could potentially account for differences seen between two racial groups such as socioeconomic status and living arrangements [16], whenever racial differences emerged.

Clinical Characteristics and Related Clinical Factors

Cross-sectional research examining racial variations in clinical presentation of anxiety between Caucasian and African American youth has yielded mixed findings [17-19]. Last and Perrin [20] compared African Americans ($n = 30$) and Caucasians ($n = 139$; ages 5–17 years) recruited from a child and adolescent anxiety clinic and found that African American youth presented with more fears based on child self-ratings on the Fear Survey Schedule for Children-Revised (FSSC-R). A more recent study in a larger, school-based sample ($n = 1,216$ African American, $n = 1,930$ Caucasian) also found African American youth reported a greater number of anxiety symptoms than Caucasian students, but only in the elementary and middle school ages; Caucasian youth reported greater symptom levels in high school [21]. Similarly, in another large school-based sample ($N = 1,065$, 11.8 % African American) [22] African American males in middle-school reported higher anxiety symptoms relative to Caucasians. In contrast, Beidel et al. [17] examined the clinical characteristics of 50 clinically referred children ages 7–13 years with social phobia (SP) (68 % Caucasian, 28 % African American; 56 % female) and found no racial differences, although comparison of

group means revealed a trend ($p < .08$) for African American children to have lower scores than Caucasian children on the Social Phobia Anxiety Inventory for Children (SPAI-C), a child self-report measure. Similarly, Treadwell et al. [12] and Wren et al. [23]. found no significant racial differences in child self-reported anxiety symptoms and types of anxiety disorders using measures including the Anxiety Disorders Interview Schedule for Children (ADIS C/P), FSSC-R, Revised Child Manifest Anxiety Scale (RCMAS), State Trait Anxiety Inventory for Children (STAI-C), and Screen for Child Anxiety and Related Emotional Disorders (SCARED).

Diagnostic differences in presentation have also been reported, with some studies suggesting higher prevalence rates of post-traumatic stress disorder [20], and higher rates of test anxiety and SP among African Americans [24], relative to Caucasian youth. A larger study conducted by Kendall and colleagues [25] examined racial differences among 488 Caucasian and non-Caucasian participants ages 7–17 years in the Child-Adolescent Anxiety Multimodal Study (CAMS) sample (same sample utilized in the current study) and found that Caucasian youth were more likely to meet diagnostic criteria for generalized anxiety disorder (GAD) only, while non-Caucasian youth were more likely to meet diagnostic criteria for both separation anxiety disorder (SAD) and specific phobia in comparison to their counterparts. Unlike the current study, Kendall et al. [25]. (p.363) examined all non-Caucasian participants and not only African Americans; thus, racial differences between Caucasians and African Americans, specifically, remain unclear.

Relative to anxiety severity, impairment associated with anxiety disorders across races has been infrequently examined. Previous work suggests impairment does not appear to vary as a function of race, although sample sizes were quite small [26]. In sum, due to methodological variability across studies (e.g., sample size, use of child versus parent report, ages included in samples, focus on SP versus all anxiety disorders, diagnostic versus symptom level comparisons) questions remain about what role racial differences play in childhood anxiety disorders.

Treatment Process Variables

Variables such as treatment expectations, treatment satisfaction, quality of the therapeutic alliance, treatment compliance, and premature termination have been correlated with treatment response and may also influence treatment seeking behavior, which is lower in African Americans [27-29]. Few studies have looked at differences in these variables based on race in the child anxiety literature. Creed and Kendall [30] examined therapeutic alliance and its impact on treatment outcomes for 56 children, ages 5–17 (93 % Caucasian) receiving manualized cognitive behavioral therapy (CBT) for anxiety and found no significant racial differences in children's rating of therapeutic alliance. In another study investigating attrition rates (defined as prematurely leaving treatment prior to its completion) in the psychotherapeutic treatment of child anxiety ($N = 190$; 80 % Caucasian, 20 % unidentified racial minority) [28], racial status was predictive of attrition; specifically, racial minorities (e.g., African American) were more likely to terminate treatment early. Possible explanations for this difference were differential attitudes and expectations toward therapy, as well as the influence of the interracial therapeutic relationship [28]. Gonzalez et al. [31]

examined rates of attrition in 197 youth (49 % Caucasian, 24 % African American) being treated for clinically significant anxiety in an outpatient clinic and also reported that African Americans were significantly more likely to prematurely leave treatment than Caucasians. Finally, with respect to treatment process, Woods et al. [32] examined patterns of homework completion in 82 adolescent and older outpatients (82.9 % Caucasian, 13.4 % African-American, 2.4 % Asian American, and 1.2 % other) being treated for obsessive compulsive disorder (OCD) and agoraphobia and found no significant racial differences. Whether similar results are true for non-OCD anxiety disorders is unknown.

Treatment Outcomes

Research investigating racial differences in treatment response, remission, and relapse in the area of child anxiety is also limited [33]. Silverman et al. [34] conducted a metaanalysis examining 32 treatment studies in child anxiety, and found too few studies included a sizable proportion of ethnic minorities to examine outcomes by race, highlighting the need for additional work in this area. Extant studies do indicate there are few, if any, racial differences in treatment outcomes [12, 35]. For instance, Treadwell et al. [12] examined outcomes in children being treated for clinical levels of anxiety and found a high treatment response rate across participants, irrespective of race. Similarly, Southam-Gerow et al. [35] found that race was not a predictor of treatment response in a sample of 135 youth ages 7–15 years being treated for anxiety disorders at an anxiety clinic. Ferrell et al. [36] also examined treatment response in a clinical sample of 58 Caucasian and African American children 8–13 years of age (39 Caucasian and 19 African American) treated with behavioral therapy for SP and found no significant differences in treatment response based on race according to independent evaluator (IE) ratings on the SPAI-C and the Children's Global Assessment Scale. They also found that African American children were as likely to remit as Caucasian children based on absence of a SP diagnosis on the SPAIC. However, sample sizes in these previous studies of African American youth ranged from 7 to 20, suggesting low power to detect any racial variations in treatment response.

Racial variation in remission (a more stringent measure of treatment outcomes) and relapse has also been relatively understudied, Ginsburg and colleagues [37] conducted a study examining remission rates also in children who participated in CAMS and found that racial/ethnic minority status was predictive of remission when remission was defined as loss of all pretreatment anxiety diagnoses on the ADIS C/P; minorities were less likely to remit than nonminorities. However, this study did not look at racial subgroups specifically; thus, whether these differences would have existed when comparing Caucasian and African American children only is unclear. Regarding relapse, one study suggested African American youth may exhibit higher relapse rates than Caucasian youth for depression treatment [38]. Unfortunately, relapse rates are not commonly reported in the child anxiety treatment literature; information on the long-term effectiveness of treatment is vital to allow thorough comparisons of treatment options.

The Current Study

The present study extends the current literature by examining racial differences in anxiety using data from the largest randomized controlled trial in child anxiety, the Child/Adolescent Anxiety Multimodal Study (CAMS [1]). Specifically, we examined whether African American versus Caucasian participants varied significantly on (1) baseline clinical characteristics (i.e., number of anxiety symptoms, anxiety severity and impairment, impact of anxiety on functioning, and frequencies of specific anxiety diagnoses); (2) treatment process variables (i.e., quality of therapeutic relationship, number of sessions attended, compliance to treatment, and overall treatment satisfaction, as well as CBT related child involvement, mastery of CBT skills, and homework completion); and (3) treatment outcomes (i.e., treatment response, remission, and relapse).

Based on findings from previous studies examining racial differences in clinical characteristics of anxiety, it was hypothesized that Caucasian and African American children would present with more similarities than differences in their clinical presentation and anxiety related constructs, in their ratings of therapeutic relationship and overall treatment satisfaction, and homework completion. However, it was predicted that treatment remission and relapse but not treatment response would be lower among African Americans compared to Caucasians.

Method

Participants

The sample for the present study was comprised of 403 youth (359 Caucasian and 44 African American). Detailed sample demographics appear in Table 1. These youth were drawn from the 488 children and adolescents (ages 7–17) who met DSM-IV criteria for GAD, SP, and/or SAD recruited for CAMS conducted at multiple sites. In CAMS, race was identified by parents or caregivers on a general information form; response options were: Black, Asian, White, Native Hawaiian/Other Pacific Islander, American Indian, and Other. Only one response could be selected as a means to capture the race most identified with by the parent. The “other” option was available, in which the parent could write in another race or indicate biracial status. Discrepancies noted between parents were clarified and corrected. A separate question queried possible Hispanic origins; most participants who identified themselves as Hispanic, however, classified themselves as “other” when asked about race. The focus of this study was non-Hispanic Caucasian and African American children. The sample excluded 85 participants from the overall CAMS sample who were of other racial minority groups (e.g., Asian, other) not of focus in this study or who reported Hispanic and non-African American origins. Additional information about recruitment and enrollment is provided in Compton et al. [39], Kendall et al. [25], and Walkup et al. [1].

Measures

Demographic and Study Related Information—Demographic (e.g., race, child age, child gender, parent education level, child living arrangement, socioeconomic status) and

study related information was gathered via a general information form completed by parents or caregivers.

Clinical Characteristics—Anxiety Disorders Interview Schedule, Child and Parent Versions (ADIS-C/P [40]). The ADIS C/P was used to assess DSM-IV-TR delineated anxiety disorders. Composite impairment ratings, based on combined parent and child impairment ratings, in addition to clinical judgment based on collective information generated during the evaluation, were assigned by an IE for each assessed disorder based on parent and child interviews that were conducted separately. Clinical severity rating (CSR) of 4 or greater was required to meet criteria for a DSM-IV diagnosis. The ADIS C/P has been shown to have excellent interrater reliability, retest reliability, and concurrent validity [41]. Furthermore, the ADIS C/P has demonstrated sensitivity to treatment effects [37].

Child Anxiety Impact Scales, Child and Parent Forms (CAIS-C/P [26]). The CAIS is a 27-item rating scale that was used to assess children's anxiety-related difficulties and functioning in multiple areas including school, social, and home/family. Parent and child parallel forms were utilized. The CAIS is purported to have good internal consistency, construct validity, and discriminant validity. [26] Cronbach's alpha was adequate for both races in this sample (see Table 2).

Clinical Global Impression Scale-Severity (CGI-S [42]). The CGI-S was utilized to indicate a global rating of anxiety severity, reflecting the lowest level of functioning in the last 7 days; scores ranged from 1 to 7 ("not at all ill" to "extremely ill"). CGI-S scores were assigned by IEs based on assessment data, including parent and child severity ratings, severity of symptoms, the participants' level of functioning overall, and impairment in key settings, including home, school, and/or social. These scores generally corresponded with the highest assigned CSR on the ADIS C/P.

The Pediatric Anxiety Rating Scale (PARS [43]) is a clinician-administered measure that assesses the frequency, severity, and impairment of common childhood anxiety disorders; it has been used as an outcome measure in several treatment trials. The PARS has shown good psychometric properties, including internal consistency, convergent validity, and discriminant validity [44]. See Table 2 for reliability in this sample.

Screen for Child Anxiety Related Emotional Disorders, Parent & Child Forms (SCARED-C/P [45, 46]). The SCARED is a 41-item (C, child-report; P, parent-report) instrument assessing DSM-IV symptoms of panic disorder, SAD, GAD, SP, and school phobia. The SCARED has shown good psychometric properties in clinical settings [46] and when used in primarily African American, as well as Caucasian samples [47]. Total scores for each form were used in this study. See Table 2 for reliability in this sample.

Treatment Process Variables—All of the following measures were created by the investigators for use in CAMS.

CBT Session Summary Sheet: This measure was completed by the CBT clinician following each treatment session. The CBT session summary sheet consisted of 12-items;

most of the items were rated on a 7-point Likert scale or were forced choice yes/no format. Only six items were utilized for this study; these items assessed the following: attendance, therapist perception of the therapeutic relationship with the child, degree of child participation, child mastery of CBT content (understanding of skills taught and information provided), and overall compliance. Average scores (sum across sessions divided by number of sessions attended) were computed for each variable.

Pharmacotherapy Visit Form: This form was completed by the pharmacotherapy (PT) clinician following each session. The measure consisted of 11-items; items varied considerably in format (e.g., Likert scale, forced choice yes/no). For the purpose of this study, only the items assessing PT session attendance and overall compliance were examined. Average score (sum across sessions divided by number of sessions attended) was computed for overall compliance.

Patient Satisfaction Questionnaire: Treatment satisfaction was assessed via eight items. An example question was “How would you rate the quality of care you received?” Answer options for this item were on a 1-4-point scale ranging from “poor” to “excellent.” The measure was administered to the child in private at the conclusion of the final treatment session; answers were placed in a sealed envelope to maintain confidentiality. The total score was utilized.

Child’s Perception of Therapeutic Relationship [48]: This measure is a 10-item, 5-point Likert scale that assessed participants’ perceptions of the quality of the therapeutic relationship. Four items examined how much the child liked the therapist, felt close to the therapist, could talk to the therapist, and wanted to spend time with the therapist. The remaining items examined the quality and closeness of the therapeutic relationship. The measure was administered by an IE.

Treatment Outcomes—Treatment outcomes were assessed by IEs blind to treatment group. IE assessed treatment outcome variables were response, remission, and relapse. Data on treatment response and remission (collected at 12 weeks) and data on relapse (collected at 24 weeks) were used in the current study.

Treatment response was defined as a Clinical Global Impression-Improvement Scale (CGI-I [42]) score of 1 or 2, which reflects substantial degrees of improvement. The CGI-I is a one item seven-point Likert scale (“very much improved” to “very much worse”) used to indicate improvement relative to baseline severity (CGI-S).

Remission was defined in two ways: (1) Loss of all targeted anxiety disorders (i.e., GAD, SP, SAD) as assessed by ADIS C/P composite CSRs and 2) 70 % or greater change in the PARS total score, which is a more conservative criterion than remission (as suggested by Caporino et al. [49]), indicating amelioration of all or most anxiety symptoms.

Relapse was defined as having met criteria for treatment response (a CGI-I score of 1 or 2) at 12 weeks, but no longer meeting treatment responder criteria at the subsequent, 24 week follow-up evaluation.

Procedure

Participants who met DSM-IV-TR diagnostic criteria for a principal diagnosis of SAD, GAD, or SP were eligible. Children who met diagnostic criteria for another DSM-IVTR disorder, with the exception of major depressive disorder, bipolar disorder, pervasive developmental disorder, or schizophrenia, were also allowed to participate as long as the disorder was not principal or co-principal. Children who failed an adequate trial of a psychotropic medication or CBT were also excluded from participation in CAMS. Eligible children were randomized to one of four treatment conditions: combined sertraline and CBT (COMB), sertraline only (SRT), CBT, and placebo. The COMB and SRT only group received either a 25 or 50 mg initial dosage of the medication accompanied with detailed instructions/guidelines. Participants on medication or placebo were assessed by a pharmacotherapist in person or via phone 14 times over a 12-week time span; medication was monitored and adjusted as needed (max dosage of 200 mg) and session forms with compliance ratings were completed at every visit. The COMB and CBT only groups attended 14 60-minute manualized CBT sessions conducted by clinicians trained in the administration of CBT. Sessions followed the format and content of the Coping Cat Manual and Workbook [50, 51]. Session forms with compliance ratings were completed after each session by the CBT therapist or pharmacotherapist.

Assessments were completed for all participants at baseline and 12, 24, and 36 weeks. The assessment protocol consisted of parent, child, and clinician rated questionnaires/forms. IEs were M.A.-level psychologists, social workers, nurse practitioners, Ph.D. psychologists, and child psychiatrists, who were rigorously trained to surpass a high standard of reliability via workshops, conferences, weekly calls, and in person supervision. A more detailed explanation of the methods utilized in CAMS can be found in Compton et al. [37]

Analytic Approach

Missing Data—Of the 488 participants, 48 (10 %) did not complete the posttreatment assessment. Multiple imputation [52, 53], using a sequential regression multivariate imputation algorithm as implemented in the IVEware [54] package for SAS was used to handle missing data. All baseline demographic characteristics, total scores on all parent and child self-report measures at each assessment point, IE measures of clinical outcome at each assessment point, study site, and treatment condition were included in the imputation model. Twenty (20) imputed data sets were generated, and the results of identical analyses on each imputed data set were combined using conventional guidelines [52]. The exception to this was the treatment process variables, which were only collected for youth who completed at least one session; for analyses involving these data, only youth who had session data were included.

Comparisons on Baseline Clinical and Treatment Process Variables—Given the distinctly different sample sizes, tests of homogeneity were examined to assure proper analytic techniques; results revealed that variances were not significantly different for comparison groups on primary outcome and baseline clinical variables, supporting use of standard parametric analyses. However, violations of the homogeneity of variance occurred with several treatment process variables; alternative tests were performed in these rare cases

and are noted as footnotes in Table 3. Independent t tests for continuous variables and Chi squared tests for categorical variables were used to compare African American and Caucasian youth on demographic, study recruitment (i.e., site, randomization), baseline clinical characteristics, and treatment process variables.

Comparisons on Treatment Outcomes—To examine the relationship between race and outcomes, initial analyses examined the effect of race on outcome variables (treatment response and remission at 12 weeks, relapse at 24 weeks) controlling for treatment site, treatment condition, baseline anxiety severity, child age, and child gender using logistic regression (as outcomes are binary variables). If race was a significant predictor, variables identified as significantly different between race on the baseline and treatment process comparisons were then entered into the outcomes models alongside race in a post hoc, model-building fashion, to identify potential explanations for any race effects. Differences on baseline variables were entered first, as they applied to all youth in the sample. Following this, treatment process variables were examined within the subsamples of youth to which they applied (i.e., CBT process variables were examined in the combination and CBT treatment arms, and the PT variables were examined in the combination, sertraline, and placebo arms).

Results

Initial analyses comparing Caucasian and African American samples on demographic and study variables revealed several differences (see Table 1). Significant differences were observed in home living situation, with Caucasian children significantly more likely to live with both biological parents than African American children [$\chi^2(1) = 31.08, p < .001$]. African American youth were also more likely to be of lower socioeconomic status [Hollingshead scores, Caucasian, $M = 49.08$ and African American, $M = 44.20$; $t(401) = -2.73, p = .007$], and differences in African American enrollment across treatment sites were also observed [$\chi^2(5) = 20.03, p = .001$].

Clinical Characteristics

Comparison of baseline clinical characteristics by race revealed no differences; no differences based on race were found when examining the scores of Caucasian and African children on the CGI-S, total scores of the parent and child rating forms of the CAIS, total scores of the MASC, total scores of the SCARED C/P, and CSRs and the presence or absence of specific anxiety disorders on the ADIS C/P. Means, standard deviations, test statistics, and p values are presented in Table 2.

Treatment Process Variables

CBT Variables—Analyses of the CBT treatment process variables (Table 3) revealed that therapist-rated therapeutic relationship (averaged across attended sessions) did not differ between subgroups. In contrast, therapists rated African American youth as less involved in treatment, as mastering less treatment content, and being less compliant in treatment relative to Caucasian youth (all $ps < .05$). African American youth also attended significantly fewer therapy sessions than Caucasian youth ($p = .02$). After controlling for SES and home living

situation, which differed between Caucasians and African Americans, child involvement and compliance in session were no longer significant ($ps > .05$); however, session attendance and client mastery continued to show racial differences ($ps < .05$).

Pharmacological Therapy Variables—Analyses of the PT treatment process variables (Table 3) indicated that average medication compliance ratings were not different between African American and Caucasian youth. However, African American youth attended significantly fewer treatment sessions than Caucasian youth ($p = .005$). This finding held after controlling for SES and home living situation ($ps < .05$).

Child-Reported Process Variables—A 2×4 analysis of variance (race by treatment condition) was used to examine differences in child perception of therapeutic relationship and overall treatment satisfaction by race. Analyses indicated no main effects of race for either outcome variable or any interaction effects between race and treatment condition ($ps > .05$). A main effect of treatment condition was found for child perception of therapeutic relationship such that relationship ratings were higher in combination treatment and CBT compared to sertraline and placebo (Table 3).

Treatment Outcome Variables

Acute Outcomes: Response and Remission—Tables 4 and 5 present results of logistic regressions examining treatment outcome variables. Across all treatment conditions, 66 % of Caucasian youth and 47.3 % of African American youth were considered treatment responders on the CGI-I and 52.9 % of Caucasian youth and 28.8 % of African American youth were in ADIS remission (loss of all three study entry diagnoses). On the PARS, 23.2 % of African Americans and 32.9 % of Caucasians were in remission (70 % symptom reduction or greater).

Controlling for treatment condition, treatment site, baseline anxiety severity (CGI-S), child age, and child gender, race did not predict responder status, although Caucasian youth trended toward being more likely to be rated treatment responders than African American youth [$OR = 2.21$, (95 % CI = .96, 5.09), $p = .06$]. Race significantly predicted ADIS remission status, such that Caucasian youth were more likely to be in remission than African American youth [$OR = 2.50$, (95 % CI = 1.09, 5.71), $p = .03$]. Race did not predict PARS remission at this conservative level of remission definition [$OR = 1.38$ (95 % CI = .55, 3.45), $p = .49$].

Follow-up Outcomes: Relapse—Across all treatment conditions, at 24 weeks of treatment (3 month follow-up), 12.6 % of Caucasian youth and 11.6 % of African American youth were considered to have relapsed on the CGI-I (i.e., were rated as treatment responders at post treatment and were no longer treatment responders at follow up). There was no effect of race on rates of relapse at 24 weeks [$OR = .85$, (95 % CI = 0.22, 3.26), $p = .81$].

Post-hoc Analyses—As noted in the Analytic plan, post hoc analyses examined potential explanations for the race effect on ADIS diagnostic remission rates identified above.

Baseline demographic and treatment process variables that showed race differences in earlier analyses (baseline variables: SES, living situation; treatment process variables: CBT mastery, CBT compliance, CBT involvement, CBT attendance, and PT attendance) were included in the models alongside race to identify potential explanations for the effect of race. When SES and living situation were added to the model, living with two biological parents predicted greater likelihood of remission [$OR = 1.86$, (95 % CI = 1.08, 3.20), $p = .03$] and race was no longer significant [$OR = 1.86$, (95 % CI = .81, 4.28), $p = .15$]; SES did not predict remission.

With respect to treatment process variables, analyses were run only on the subsample of youth to which they applied. Within the subsample of youth who had received CBT or COMB, average higher child involvement, average higher rated mastery of content, and average higher rated compliance in session all predicted greater likelihood of being in remission (see Table 5). Number of CBT sessions attended did not predict remission. Within the PT arms (COMB, SRT, and placebo), higher session attendance increased the odds of youth being in remission. Race was not a significant predictor in any analysis conducted on these subgroups; however, it should be noted the sample size became significantly smaller in these analyses, which may have reduced power to detect race effects.

Discussion

Findings from this study comparing African American and Caucasian youth with anxiety disorders revealed more similarities than differences on baseline clinical characteristics; differences were noted across treatment process variables and some treatment outcomes. With respect to baseline clinical characteristics, the present study found that Caucasian and African American children did not differ significantly in number of anxiety symptoms endorsed or rates of particular anxiety diagnoses. These findings counter those of some studies that found Caucasian and African American children differed significantly in symptoms related to and diagnoses of social and specific phobia [10, 11, 25], but are in alignment with findings from Treadwell et al. [12]. This discrepancy may be explained by the use of different sampling procedures and instruments; the current study enrolled children primarily in medical centers presenting with a wide range of anxiety disorders and examined scores on a variety of anxiety measures (not only SP and the SPAI-C, as in Beidel et al. [10]), included a wide age range (contrary to Last and Perrin [20]), and examined African Americans only instead of non-Caucasian youth collectively (contrary to Kendall et al. [5]). This finding provides evidence that in clinical samples, the manifestation and experience of anxiety is comparable (as measured on the instruments used) and equally impairing and distressing for these particular racial groups.

In regards to treatment process variables, our hypotheses were only partially supported. Child and clinician ratings of therapeutic relationship and child treatment satisfaction post-treatment did not differ as a function of race. However, African American youth attended fewer sessions of both psychotherapy and PT than did Caucasian youth, and African American youth were rated as less involved and compliant *in session* by their therapists, as well as mastering less CBT content. Thus, while overall treatment satisfaction did not differ between African American and Caucasian youth, African American youth appear to be

atrisk for lower treatment engagement (i.e., treatment attendance, involvement, and compliance, and content mastery). While this effect could be partially attributed to family SES and home living environment, African American youth showed lower treatment attendance and mastery of material after controlling for these demographic factors. This is a critical finding, as a multitude of studies have found child therapy engagement variables such as child participation to be predictive of therapy outcomes. [55] One meta-analysis of 49 studies conducted by Karver et al. [56] revealed that among other variables, child participation and willingness to participate in session significantly predicted treatment outcomes in children receiving therapy, yielding small to medium effect sizes. Indeed, in our sample, higher therapist-rated child engagement predicted better treatment outcomes.

The reason for lower attendance among African Americans is multifaceted; results from the current study indicate that demographic factors such as SES and family composition (e.g., two parent vs. single parent home), as well as treatment process variables (e.g., treatment engagement, therapeutic relationship) may play a role. Other studies suggest that attendance may be influenced by parent perception of child improvement, physical barriers, or attitudes toward treatment [57]. Additionally, it is important to note that CBT and PT therapists in the current study were primarily Caucasian. Research suggests that interracial pairings may contribute to perceptions of treatment engagement and therapeutic alliance. For example, Burkard and Knox [58] examined interracial therapeutic pairings and found that the extent to which a therapist believes that racial issues matter in individuals' lives was significantly associated with therapist empathy towards and ratings of African American patients. Thus, a potential explanation for the exhibited differences in treatment process variables may be underlying cultural issues related to interracial therapeutic pairings or other cultural factors not examined in this study [7, 59].

Regarding treatment outcomes, as predicted, treatment response did not differ as a function of race. Similarly, rate of relapse was also equivalent across racial groups. This latter finding contradicts Vitiello et al. [38], in which racial minority status was predictive of relapse; the discrepancy may be explained by the fact that Vitiello and colleagues did not examine African American youth exclusively in comparison to Caucasian youth and utilized a sample of children and adolescents treated for depression, not anxiety. In alignment with Ginsburg et al. [37], which utilized the same CAMS sample, findings of this study indicated that race was more strongly a predictor of remission status—African American children were less likely to remit than their Caucasian counterparts. As previously stated, African Americans in this study were more likely to come from single parent homes and reported lower SES status; perhaps unobserved mechanisms related to these findings such as familial stress may explain discrepancies in remission rates, particularly as living in a single parent home was also associated with lower likelihood of achieving remission. These factors may have also impacted youth ability to fully engage in and attend sessions. It is worth noting that, in our sample, living with two biological parents predicted greater session attendance for CBT and PT sessions ($ps < .01$). Thus, in addition to exploring potential cultural attitudes toward treatment and therapistethnic match, greater attention to practical barriers (transportation, flexible scheduling) inhibiting treatment engagement is warranted.

Of perhaps greater importance was the finding that higher treatment engagement (more common in the Caucasian subsample) also predicted better treatment outcomes. Although we caution readers to keep in mind the complexity of race and that other cultural factors not examined in this study may augment the understanding of this finding, this suggests that while baseline clinical differences (e.g., anxiety severity, impairment) are an unlikely explanation for racial differences in outcomes, lower treatment engagement may place African American youth at-risk for poorer treatment outcomes. Thus, proactive treatment engagement strategies, such as assessment of barriers to treatment [60], setting treatment expectations, therapist reinforcement (e.g., praise, incentive), behavioral contracting, and cultural acknowledgement may be critical strategies to employ with this population [61]. The latter two strategies may be particularly important as youth compliance in session was the most robust predictor of treatment outcomes among the engagement variables and unassessed cultural variables may underlie African American youth's lower treatment engagement.

The present study is not without its limitations. First, although larger than previous studies, the current sample of African Americans is still relatively small, and highlights the larger issue of low minority enrollment in treatment trials. Additionally, this study utilized a volunteer sample presenting primarily at medical centers. Thus, results obtained may not generalize to community samples. Furthermore, the CAMS sample is composed of treatmentseeking anxious youth. Findings may not generalize to the larger population of anxious African American youth, particularly since attendance to an *initial* meeting for mental health treatment may be lower for this population [62]; such youth would not have been captured in this study. The current study was unable to examine age and gender within the context of race due to the small sample size, which may affect findings.

Finally, while we were able to identify several variables (e.g., child living arrangement, SES) that accounted for some of the treatment variations in race, we did not assess other cultural variables that may better account for treatment engagement findings, such as individual values, customs, and perceptions of mental health treatment. Similarly, CAMS participants were required to select only one race with which to identify or to identify as "Other"; thus, we were unable to examine the impact of biracial status on symptom manifestation or treatment response.

Summary

The current study explored potential differences in baseline clinical characteristics, treatment process variables, and treatment outcomes among 359 Caucasian and 44 African American clinically anxious youth in the United States enrolled in CAMS, a multimodal, multisite randomized controlled trial comparing the effectiveness of four treatment conditions: SRT, CBT, COMB, and placebo. Baseline, as well as data collected at 12 and 24 weeks was of focus in this study. Findings revealed no significant racial differences exhibited in baseline clinical characteristics; however, examination of treatment process variables revealed that CBT therapists rated African American participants significantly lower on treatment engagement related variables, including involvement in therapy and mastery of session by session content. In addition, African American youth attended

significantly fewer sessions across treatment arms. With regard to outcome variables, analyses showed that race was only a marginal predictor of outcomes and that in general, once demographic (e.g., living arrangement) and treatment process variables were controlled for, African American and Caucasian youth displayed comparable response, remission, and relapse rates. Collectively, these findings provide evidence that the experience of anxiety (e.g., symptoms, distress, and impairment) is similar across Caucasian and African American samples, supporting the use of extant assessment measures. African Americans in our sample fared similarly to Caucasians in treatment outcomes. Overall, findings are encouraging in that current evidenced-based treatments, namely, CBT and SSRIs, lead to similar improvement rates for anxious African American and Caucasian youth and suggest that race-specific modifications of the treatments themselves may not be warranted. However, African American youth appear to be at increased risk for lower treatment engagement in both psychotherapy and medication treatments, which in turn affected treatment outcomes. Thus, proactive engagement strategies to facilitate attendance to and participation within sessions may be particularly beneficial for this population of anxious youth.

Acknowledgments

This study was supported by National Institute of Mental Health (NIMH) Grants MH64089, MH64107, MH64003, MH63747, MH064092, and MH64088.

References

1. Walkup JT, Albano AM, Piacentini J, et al. Cognitive behavioral therapy, sertraline, or a combination in childhood anxiety. *New Engl J Med*. 2005; 359(26):2753–2766. [PubMed: 18974308]
2. Fukushima-Flores M, Miller L. FRIENDS parent project: effectiveness of parent training in reducing parent anxiety in a universal prevention program for anxiety symptoms in school children. *Behav Change*. 2011; 28(2):57–73.
3. Kessler RC, Avenevoli S, Costello EJ, et al. Prevalence, persistence, and sociodemographic correlates of DSM-IV disorders in the national comorbidity survey replication adolescent supplement. *AMA Arch Gen Psychiatry*. 2012; 69(4):372–380.
4. Simon E, Bogels SM. Screening for anxiety disorders in children. *Eur Child Adolesc Psychiatry*. 2009; 18(10):625–634. [PubMed: 19415415]
5. Kendall PC, Safford S, Flannery-Schroeder E, Webb A. Child anxiety treatment: outcomes in adolescence and impact on substance use and depression at 7.4 year follow-up. *J Consult Clin Psychol*. 2004; 72(2):276–287. [PubMed: 15065961]
6. Cunningham PJ, Freiman MP. Determinants of ambulatory mental health service use for school-age children and adolescents. *Ment Health Serv Res*. 1996; 31(4):409–427.
7. Bussing R, Gary FA. Eliminating mental health disparities by 2020: everyone's actions matter. *J Am Acad Child Adolesc Psychiatry*. 2012; 51(7):663–666. [PubMed: 22721587]
8. US Department of Health and Human Services. HHS action plan to reduce racial and ethnic disparities: a nation free of disparities in health and health care. US Department of Health and Human Services; Washington: 2011.
9. US Department of Health and Human Services. Mental health: culture, race, and ethnicity—a supplement to mental health: a report of the surgeon general. US Substance Abuse and Mental Health Services Administration; Rockville: 2001.
10. Beidel DC, Turner SM, Morris TL. Psychopathology of child social phobia. *J Am Acad Child Adolesc Psychiatry*. 1999; 38(6):643–650. [PubMed: 10361781]

11. Last CG, Hansen C, Franco N. Anxious children in adulthood: A prospective study of adjustment. *J Am Acad Child Adolesc Psychiatry*. 1997; 36(5):645–652. [PubMed: 9136499]
12. Treadwell KRH, Flannery-Schroeder EC, Kendall PC. Ethnicity and gender in relation to adaptive functioning, diagnostic status, and treatment outcome in children from an anxiety clinic. *J Anxiety Disord*. 1995; 9(5):373–384.
13. Neville HA, Carter RT. Race and racism in counseling psychology research, training, and practice: a critical review, current trends, and future directions. *Couns Psychol*. 2005; 33(4):413–418.
14. Newman DA, Hanges PJ, Outtz JL. Racial groups and test fairness, considering history and construct validity. *Am Psychol*. 2007; 62(9):1082–1083. [PubMed: 18085863]
15. Helms JE, Jernigan M, Mascher J. The meaning of race in psychology and how to change it: a methodological perspective. *Am Psychol*. 2005; 60(1):27–36. [PubMed: 15641919]
16. Jackson, PB.; Williams, DR. The intersection of race, gender and SES: Health paradoxes. In: Schulz, AM.; Mullings, L., editors. *Gender, Race, Class, and Health: intersectional Approaches*. Jossey-Bass; San Francisco: 2006. p. 131-162.
17. Beidel DC, Turner SM, Morris TL. Behavioral treatment of childhood social phobia. *J Consult Clin Psychol*. 2000; 68(6):1072–1080. [PubMed: 11142541]
18. Berman SL, Weems CF, Silverman WK, Kurtines WM. Predictors of outcome in exposure-based cognitive and behavioral treatments for phobic and anxiety disorders in children. *Behav Therapy*. 2000; 31(4):713–731. 10.1016/S0005-7894%2800%2980040-4
19. Hedtke KA, Kendall PC, Tiwari S. Safety-seeking and coping behavior during exposure tasks with anxious youth. *J Clin Child Adolesc Psychol*. 2009; 38(1):1–15. [PubMed: 19130353]
20. Last CG, Perrin S. Anxiety disorders in African American and White children. *J Abnorm Child Psychol*. 1993; 21(2):153–164. [PubMed: 8491929]
21. Latzman RD, Naifeh JA, Watson D, Vaidya JG, Heiden LJ, Damon JD, Hight TL, Young J. Racial differences in symptoms of anxiety and depression among three cohorts of students in the southern United States. *Psychiatry*. 2011; 74(4):332–350. [PubMed: 22168294]
22. McLaughlin KA, Hilt LM, Nolen-Hoeksema S. Racial/ethnic differences in internalizing and externalizing symptoms in adolescents. *J Abnorm Child Psychol*. 2007; 35(5):801–816. [PubMed: 17508278]
23. Wren FJ, Berg EA, Heiden LA, et al. Childhood anxiety in a diverse primary care population: parent-child reports, ethnicity and SCARED factor structure. *J Am Acad Child Adolesc Psychiatry*. 2007; 46(3):332–340. [PubMed: 17314719]
24. Beidel D, Tuner M, Trager K. Test anxiety and childhood anxiety disorders in African American and white school children. *J Anxiety Disord*. 1994; 8(2):169–179.
25. Kendall PC, Compton S, Walkup J, et al. Clinical characteristics of anxiety disordered youth. *J Anxiety Disord*. 2010; 24(3):360–365. [PubMed: 20206470]
26. Langley AK, Bergman L, McCracken J, Piacentini JC. Impairment in childhood anxiety disorders: preliminary examination of the child anxiety impact scale-parent version. *J Child Adolesc Psychopharmacol*. 2004; 14(1):105–114. [PubMed: 15142397]
27. Acosta FX. Self-described reasons for premature termination of psychotherapy by Mexican American, Black American, and Anglo-American patients. *Psychol Rep*. 1980; 47(2):435–443. [PubMed: 7454896]
28. Kendall PC, Sugarman A. Attrition in the treatment of childhood anxiety disorders. *J Consult Clin Psychol*. 1997; 65(5):883–888. [PubMed: 9337507]
29. Reis BF, Brown LG. Reducing psychotherapy dropouts: maximizing perspective convergence in the psychotherapy dyad. *Psychotherapy (Chic)*. 1999; 36(2):123–136.
30. Creed TA, Kendall PC. Therapist alliance-building behavior within a cognitive-behavioral treatment for anxiety in youth. *J Consult Clin Psychol*. 2005; 73(3):498–505. [PubMed: 15982147]
31. Gonzalez A, Weersing VA, Warnick EM, Scahill LD, Woolston JL. Predictors of treatment attrition among an outpatient clinic sample of youths with clinically significant anxiety. *Adm Policy Ment Health*. 2011; 38(5):356–367. [PubMed: 20976618]
32. Woods CM, Chambless DL, Steketee G. Homework compliance and behavior therapy outcome for panic with agoraphobia and obsessive compulsive disorder. *Cogn Behav Ther*. 2002; 31(2):88–95.

33. Strada MJ, Donohue B, Lefforge NL. Examination of ethnicity in controlled treatment outcome studies involving adolescent substance abusers: a comprehensive literature review. *Psychol Addict Behav.* 2006; 20(1):11–27. [PubMed: 16536661]
34. Silverman WK, Pina AA, Viswesvaran C. Evidence-based psychosocial treatments for phobic and anxiety disorders in children and adolescents. *J Clin Child Adolesc Psychol.* 2008; 37(1):105–130. [PubMed: 18444055]
35. Southam-Gerow MA, Kendall PC, Weersing VR. Examining outcome variability: correlations of treatment response in a child and adolescent anxiety clinic. *J Clin Child Psychol.* 2001; 30(3):422–436. [PubMed: 11501258]
36. Ferrell CB, Beidel DC, Turner SM. Assessment and treatment of socially phobic children: a cross cultural comparison. *J Clin Child Adolesc Psychol.* 2004; 33(2):260–268. [PubMed: 15136189]
37. Ginsburg GS, Kendall PC, Sakolsky D, et al. Remission after acute treatment in children and adolescents with anxiety disorders: findings from the CAMS. *J Consult Clin Psychol.* 2011; 79(6): 806–813. [PubMed: 22122292]
38. Vitiello B, Emslie G, Clarke G, et al. Long-term outcome of adolescent depression initially resistant to selective serotonin reuptake inhibitor treatment: a follow-up study of the TORDIA sample. *J Clin Psychiatry.* 2011; 72(3):388–396. [PubMed: 21208583]
39. Compton SN, Walkup JT, Albano AM, et al. Child/adolescent anxiety multimodal study (CAMS): rationale, design, and methods. *Child Adolesc Psychiatry Ment Health.* 2010; 4(1):1–15. [PubMed: 20051130]
40. Silverman, WK.; Albano, AM. The anxiety disorders interview schedule for DSM–IV—child and parent versions. Physiological Corporation; San Antonio: 1996.
41. Lyneham HJ, Abbott MJ, Rapee RM. Inter-rater Reliability of the anxiety disorders interview schedule for DSM-IV: child and Parent Ver. *J Am Acad Child Adolesc Psychiatry.* 2007; 46(6): 731–737. [PubMed: 17513985]
42. Guy, W. The ECDEU Assessment Manual for Psychopharmacology-Revised. Rockville, MD: U.S. Department of Health, Education, and Welfare Public Health Service, Alcohol, Drug Abuse, Mental Health Administration, NIMH Psychopharmacology Research Branch, Division of Extramural Research; 1976. The clinical global impression scale; p. 218–222. Vol DHEW Publ No ADM 76-338
43. Research Unit on Pediatric Psychopharmacology (RUPP) Anxiety Study Group. The pediatric anxiety rating scale (PARS): development and psychometric properties. *J Am Acad Child Adolesc Psychiatry.* 2002; 41(9):1061–1069. [PubMed: 12218427]
44. Ginsburg GS, Keeton CP, Drazdowski TK, Riddle MA. The utility of clinicians ratings of anxiety using the pediatric anxiety rating scale (PARS). *Child Youth Care Forum.* 2011; 40(2):93–105.
45. Birmaher B, Khetarpal S, Brent D, Cully M, Brent D, MacKenzie S. The screen for child anxiety related emotional disorders (SCARED): scale construction and psychometric characteristics. *J Am Acad Child Adolesc Psychiatry.* 1997; 36(4):545–553. [PubMed: 9100430]
46. Birmaher B, Brent DA, Chiappetta L, Bridge J, Monga S, Baugher M. Psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED): a replication study. *J Am Acad Child Adolesc Psychiatry.* 1999; 38(10):1230–1236. [PubMed: 10517055]
47. Boyd RC, Ginsburg GS, Lambert SF, Cooley MR, Campbell KD. Screen for child anxiety related emotional disorders (SCARED): psychometric properties in an African-American parochial high school sample. *J Am Acad Child Adolesc Psychiatry.* 2003; 42(10):1188–1196. [PubMed: 14560168]
48. Kendall PC. Treating anxiety disorders in children: results of a randomized controlled trial. *J Consult Clin Psychol.* 1994; 62(1):100–110. [PubMed: 8034812]
49. Caporino NE, Brodman DM, Kendall PC, et al. Defining treatment response and remission in child anxiety: signal detection analysis using the pediatric anxiety rating scale. *J Am Acad Child Adolesc Psychiatry.* 2013; 52(1):57–67. [PubMed: 23265634]
50. Kendall, PC.; Hedtke, K. Coping Cat Workbook. 2. Ardmore, PA: Workbook Publishing; 2006. www.workbookpublishing.com
51. Kendall, PC.; Hedtke, K. Cognitive-behavioral therapy for anxious children: Therapist manual. 3. Ardmore, PA: Workbook Publishing; 2006. www.workbookpublishing.com

52. Little, RJA.; Rubin, DB. Statistical analysis with missing data. 2. John Wiley; New York: 2002.
53. Rubin DB. Multiple imputation after 18? years (with discussion). J Am Stat Assoc. 1996; 91(434): 473–489.
54. Raghunathan, TE.; Solenberger, P.; Van Hoewyk, J. IVEware: imputation and variance estimation software users guide. University of Michigan, Survey Research Center, Institute for Social Research; 2002.
55. Shirk SR, Karver M. Prediction of treatment outcome from relationship variables in child and adolescent therapy: a metaanalytical review. J Consult Clin Psych. 2003; 71(3):452–464.
56. Karver MS, Handelsman JB, Fields S, Bickman L. Metaanalysis of therapeutic relationship variables in youth and family therapy: the evidence for different relationship variables in the child and adolescent treatment outcomes literature. Clin Psychol Rev. 2006; 26(1):50–65. [PubMed: 16271815]
57. dosReis S, Mychailyszyn MP, Evans-Lacko S, Beltran A, Riley AW, Meyers MA. The meaning of ADHD medication and parents' initiation and continuity of treatment for their child. J Child Adolesc Psychopharmacol. 2009; 19(4):377–383. [PubMed: 19702489]
58. Burkard AW, Knox S. Effect of therapist color-blindness on empathy and attributions in cross-cultural counseling. J Couns Psychol. 2004; 51(4):387–397. <http://dx.doi.org/10.1037/0022-0167.51.4.387>.
59. Burgess D, van Ryn M, Dovidio JF, Saha S. Reducing bias among healthcare providers: lessons from social-cognitive psychology. J Gen Intern Med. 2007; 22(6):882–887. [PubMed: 17503111]
60. Becker KD, Lee B, Daleiden EL, Lindsey MA, Brandt NE, Chorpita BF. The common elements of engagement in children's mental health services: Which elements for which outcomes? J Clin Child Adolesc Psychol. 2013 Jul 23. Epub 2014 April 19. 10.1080/15374416.2013.814543
61. Lindsey, MA.; Brandt, NE.; Becker, KD., et al. Identifying the common elements of treatment engagement in child mental health services. Clin Child Fam Psychol Rev. 2013 Dec 31. Epub 2014 April 19. <http://link.springer.com/article/10.1007%2Fs10567-013-0163-x>
62. McKay MM, Bannon WM. Engaging families in child mental health services. Child Adolesc Psychiatr Clin N Am. 2004; 13(4):905–921. [PubMed: 15380788]

Table 1

Demographic information of CAMS subsamples

Variable	Caucasian	African American	Test statistic	<i>p</i>	ES ^a
Gender					
Male	47.6 %	50.0 %	$\chi^2(1) = .09$	.767	.015
Age	<i>M</i> = 10.57 (<i>SD</i> = 2.74)	<i>M</i> = 11.43 (<i>SD</i> = 2.93)	<i>t</i> (401) = 1.96	.051	.30
Socioeconomic status (Hollingshead scores)	<i>M</i> = 49.08 (<i>SD</i> = 11.16)	<i>M</i> = 44.20 (<i>SD</i> = 11.29)	<i>t</i> (401) = -2.73	.007	.43
Treatment condition			$\chi^2(3) = .541$	.910	.04
Combined (<i>n</i> = 116)	90.5 %	9.5 %			
Sertraline Only (<i>n</i> = 112)	89.3 %	10.7 %			
CBT Only (<i>n</i> = 112)	87.5 %	12.5 %			
Placebo (<i>n</i> = 63)	88.9 %	11.1 %			
Child living arrangement			$\chi^2(1) = 31.08$	<.001	.30
Both biological parents	76.3 %	36.4 %			
Participation site			$\chi^2(5) = 20.03$	.001	.22
Site 1 (<i>n</i> = 97)	92.8 %	7.2 %			
Site 2 (<i>n</i> = 93)	92.5 %	7.5 %			
Site 3 (<i>n</i> = 47)	91.5 %	8.5 %			
Site 4 (<i>n</i> = 65)	95.4 %	4.6 %			
Site 5 (<i>n</i> = 32)	78.1 %	21.9 %			
Site 6 (<i>n</i> = 69)	76.8 %	23.2 %			

n = 403, 89.1 % Caucasian and 10.9 % African American^a Cohen's *d* reported for t-tests, Cramer's *V* reported for Chi square analyses

Table 2
Measure properties and comparison of baseline variables in Caucasians and African Americans CAMS participants

Measure	Internal consistencies (Cronbach's alpha)		Caucasians (n = 359)		African Americans (n = 44)		t	p	Cohen's d
	Caucasians	African Americans	Mean	SD	Mean	SD			
CGIS	–	–	5.02	.71	5.18	.76	1.42	.16	.23
CAIS (child)	.87	.90	15.59	12.74	17.84	12.17	1.11	.27	.18
CAIS (parent)	.90	.85	23.53	12.70	27.25	15.08	1.79	.07	.27
ADIS SAD CSR	–	–	3.32	2.43	3.09	2.52	–.59	.56	.09
ADIS SP CSR	–	–	4.50	1.93	4.70	2.13	.67	.50	.10
ADIS GAD CSR	–	–	4.74	1.92	4.75	1.74	.03	.98	.01
PARS	.69	.68	19.21	4.04	19.91	3.75	1.09	.28	.18
SCARED total (child)	.94	.92	22.75	15.65	23.22	12.95	.14	.89	.03
SCARED total (parent)	.89	.91	32.56	12.24	31.80	13.70	–.38	.70	.06

ADIS diagnostic status, %	Total sample (%)	Caucasians (%)	African Americans (%)	χ^2	p	Cramers V
Separation anxiety	54.3	56.5	47.7	1.24	.27	.06
Social phobia	80.1	78.6	86.4	1.46	.23	.06
Generalized anxiety	80.7	81.9	86.4	.54	.46	.04
Any comorbidity	55.3	55.2	52.3	.13	.72	.02
Other internalizing disorder	44.1	43.7	45.5	.05	.83	.01
Externalizing disorder	18.4	17.8	13.6	.48	.49	.03

n = 428. CGIS Clinical Global Impression Scale, CAIS Child Anxiety Impact scale, ADIS Anxiety Disorders Interview Schedule, SCARED Screen for Child Anxiety Related Disorders

Table 3

Comparison of treatment variables in Caucasian and African American samples

	Caucasian M (SD)	African American M (SD)	t value	p value	Cohen's d
CBT process variables (n = 228; Cauc n = 203; AA n = 25)					
Therapist rating of relationship	5.72 (1.06)	5.29 (1.14)	-1.87	.063	.39
Child involvement	5.86 (1.03)	5.38 (1.06)	-2.19	.030	.46
Content mastery	5.40 (1.04)	4.81 (1.10)	-2.66	.008	.55
Overall compliance	5.66 (1.12)	5.09 (1.43)	-2.33	.021	.44
# of Sessions Attended ^a	11.42 (1.59)	9.40 (4.01)	-2.49	.020	.66
Pharmacological variables (n = 291; Cauc n = 261; AA n = 30)					
Medication compliance ^b	6.39 (.94)	6.27 (.94)	-.56	.58	.13
# of sessions attended ^a	13.79 (4.75)	9.70 (6.24)	-3.05	.005	.74
Treatment Condition (Tx)					
	Race (R)		Two-way ANOVA		
	Caucasian M (SE)	African American M (SE)	R	Tx	R × Tx
			F = .001	F = 4.18	F = .12
			(p = .98)	(p = .006)	(p = .95)
Child perception of therapeutic relationship at 12 weeks (n = 403)					
Combined	3.65 (.09)	3.78 (.29)			
SRT Only	3.07 (.10)	3.13 (.28)			
CBT Only	3.45 (.09)	3.53 (.24)			
Placebo	3.13 (.12)	3.16 (.37)			
Treatment condition (Tx)					
	Race (R)		Two-way ANOVA (F values)		
	Caucasian M (SE)	African American M (SE)	R	Tx	R × Tx
			F = .20	F = 1.47	F = 1.12
			(p = .66)	(p = .22)	(p = .34)
Overall treatment satisfaction (n = 403)					
Combined	3.65 (.05)	3.48 (.19)			
SRT Only	3.39 (.05)	3.47 (.18)			
CBT Only	3.38 (.05)	3.31 (.14)			

	Caucasian M (SD)	African American M (SD)	t value	p value	Cohen's d
Placebo	3.13 (.07)	3.46 (.21)			

^a Homogeneity of variance assumption violated, adjusted Levene's test statistics reported

^b Results presented on the 217 youth who had this data

Table 4

Remission and response rates by race

	% In response/remission		Logistic regression results			
	Caucasian	African American	<i>B</i>	<i>SE</i>	<i>OR</i> (95 % CI)	<i>p</i>
CGI-I acute response, %	66.0	47.3	.79	.42	2.21 (.96, 5.09)	.06
ADIS acute remission, %	52.9	28.8	.91	.42	2.50 (1.09, 5.71)	.03
PARS acute remission	32.9	23.2	.32	.47	1.38 (.55, 3.45)	.49
Relapse at 24 weeks, %	12.6	11.6	-.17	.68	.84 (.22, 3.26)	.81

Logistic regression analyses controlled for treatment site, baseline severity, child age, child gender, and treatment condition. Race was dummy coded with African American youth as the reference category

Table 5

Post hoc results conducted to examine potential explanations for race findings

	CGI-I response				ADIS remission					
	<i>B</i>	<i>SE</i>	<i>OR</i>	<i>OR</i> (95 % CI)	<i>p</i>	<i>B</i>	<i>SE</i>	<i>OR</i>	<i>OR</i> (95 % CI)	<i>p</i>
SES	-.003	.01	1.00	(.98, 1.02)	.81	.01	.01	1.01	(.99, 1.03)	.26
Living situation	.13	.28	1.13	(.65, 1.98)	.66	.62	.28	1.86	(1.08, 3.20)	.03
CBT process variables ^a										
Session attendance	.19	.19	1.21	(.82, 1.79)	.32	.21	.15	1.23	(.91, 1.66)	.18
Child involvement ^c	.36	.18	1.44	(1.01, 2.05)	.05	.33	.17	1.40	(1.01, 1.94)	.05
Content mastery ^c	.55	.19	1.74	(1.19, 2.53)	.004	.43	.17	1.54	(1.10, 2.17)	.01
Overall compliance ^a	.64	.18	1.90	(1.33, 2.73)	<.001	.53	.17	1.69	(1.22, 2.36)	.002
PT variables ^b										
Session attendance	.25	.10	1.29	(1.06, 1.56)	.01	.38	.09	1.47	(1.23, 1.75)	<.001
Medication compliance ^c	-.16	.26	0.86	(.51, 1.44)	.55	-.07	.24	.93	(.58, 1.49)	.77

Analyses controlling for treatment site, baseline severity, treatment condition, and race. Race was a significant predictor of ADIS Remission when SES was included in the model, but was not a significant predictor in the remainder of analyses

^a Analysis conducted on youth receiving combination and CBT treatments only

^b Analysis conducted on youth receiving combination, sertraline, and placebo treatments only

^c Analysis controlled for session attendance, in addition to the aforementioned control variables