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Racial Differences in Adherence and Response to Combined Treatment for Full and Subthreshold PTSD and Alcohol Use Disorders: A Secondary Analysis

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Abstract

We conducted a secondary data analysis to examine whether there were racial differences in adherence and treatment outcomes for participants with co-occurring full and subthreshold PTSD and alcohol/substance use disorders (A/SUD) who were treated with Seeking Safety (a cognitive-behavioral therapy) and sertraline (SS-S) or Seeking Safety and placebo (SS-P) as part of a clinical trial. Bivarate analyses examined the association between race and adherence and generalized estimating equations (GEE) assessed whether race moderated the effect of combination treatment on PTSD and alcohol use outcomes. Except for education, there were no statistically significant racial differences in baseline demographic and psychiatric characteristics. African Americans and Caucasians were equally adherent in number of psychotherapy and medication sessions attended and medication compliance. After controlling for baseline demographics and psychiatric symptoms, however, a race by treatment condition interaction emerged suggesting that African Americans who received the SS-S treatment had significantly *lower* PTSD symptom severity posttreatment and at 6-months follow-up compared to their counterparts who received SS-P. No

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differential effect of treatment condition was found for Caucasians. Moreover, results indicated that a diagnosis of Major Depressive Disorder (MDD) negatively impacted PTSD symptom recovery for African American participants but not for Caucasians. In conclusion, no differences emerged between African Americans and Caucasians in adherence to combination treatments for PTSD and A/SUD. Findings also suggest assessment and treatment of MDD among African Americans may improve treatment outcomes. More research is needed to determine whether the differential response to SS-S among African Americans compared to Caucasians can be replicated.

Keywords

racial differences; PTSD; alcohol use disorders; substance use disorders; sertraline; Seeking Safety

Epidemiological studies estimate that approximately 30–90% of individuals living in the United States have been exposed to one or more traumatic events in their lifetime (N. Breslau, 2009; Kessler et al., 2005), with 7–10% of those individuals subsequently developing posttraumatic stress disorder (PTSD). PTSD is a significant public health concern resulting in significant distress, functional impairment, and millions of dollars lost to health and work-related costs (Marciniak et al., 2005). Studies consistently show that untreated PTSD can lead to the development and maintenance of alcohol use disorders (Ralevski, Olivera-Figueroa, & Petrakis, 2014; Smith & Randall, 2012).

Few studies have examined racial differences in exposure to traumatic events and PTSD. Some studies have found no racial/ethnic differences in PTSD diagnosis or symptom severity after trauma exposures (Adams & Boscarino, 2005; J. Breslau et al., 2006; Ghafoori, Barragan, Tohidian, & Palinkas, 2012). In contrast, other studies have found African American individuals are more likely to be diagnosed with PTSD and have elevated PTSD symptom severity compared with Caucasian individuals (Hatch & Dohrenwend, 2007; Himle, Baser, Taylor, Campbell, & Jackson, 2009; Perilla, Norris, & Lavizzo, 2002). Racial/ethnic disparities in PTSD rates have been attributed to differential exposure to types of traumas that confer greater risk for PTSD or to differential vulnerability to the effects of trauma (Perilla et al., 2002; Turner & Avison, 2003).

Studies indicate a high comorbidity of depression and PTSD, with up to 50% of those with PTSD also meeting criteria for at least one depressive disorder (Buodo, Novara, Ghisi, & Palomba, 2012). Depression may be a consequence of trauma exposure or may serve as a pre-existing diathesis that increases the risk of developing PTSD (Buodo et al., 2012). Although African Americans appear to have equal or lower rates of major depressive disorder (MDD) compared to Caucasians (Blazer, Kessler, McGonagle, & Swartz, 1994; Kessler et al., 1994, 2003), they are more likely to have chronic MDD and are less likely to receive treatment, resulting in depression that is perceived as more disabling (Lesser et al., 2011; Williams et al., 2007).

When examining rates of alcohol/substance use and use disorders (A/SUD), the picture that emerges is complex. Data from the 2012 National Survey on Drug Use and Health revealed that African Americans are more likely than Caucasians to use illicit drugs; and Caucasians are more likely than African Americans to use alcohol (Substance Abuse and Mental Health

Services Administration, 2013). Nevertheless, both African Americans and Caucasians have similar rates of A/SUD when examined as a whole (Chartier & Caetano, 2010). Despite lower rates of alcohol use, racial/ethnic minorities (REM) are more likely to experience negative health and social consequences related to their drinking compared with Caucasians (Chartier & Caetano, 2010; Witbrodt, Mulia, Zemore, & Kerr, 2014).

Research on racial/ethnic differences in behavioral and pharmacologic treatment outcomes for individuals with co-occurring PTSD and A/SUD has also been limited. A comprehensive review of behavioral treatment outcomes studies for PTSD-alone among racial/ethnic minorities found that African Americans and Caucasians had comparable outcomes after receiving cognitive behavioral treatment (CBT) for PTSD (Carter, Mitchell, & Sbrocco, 2012); although African Americans tended to drop out earlier than Caucasians. Racial/ethnic minorities also have higher dropout rates for substance abuse treatment (Guerrero, Marsh, Khachikian, Amaro, & Vega, 2013; Saloner & Cook, 2013) but comparable treatment outcomes (Guerrero et al., 2013). Findings from medication trials suggest African Americans may be less likely to access and use antidepressant medications compared with Caucasians (Han & Liu, 2005; Wu, Erickson, Piette, & Balkrishnan, 2012). Evidence also suggests African Americans may have a differential response to antidepressant medications compared with Caucasians (Lesser et al., 2007). Differential responses have been attributed to genetic characteristics/factors and cultural practices that might influence the metabolism of the medications (Murphy et al., 2013). Other studies, however, found that African Americans had equivalent responses to antidepressants compared to Caucasians (Lesser et al., 2010, 2011) after controlling for comorbid anxiety disorders and social disparities (e.g., education and employment).

There is an emerging body of literature supporting integrated (i.e., treating PTSD and A/SUD concurrently) and combined (i.e., medication plus behavioral) treatments for PTSD and A/SUD (Foa et al., 2013; Najavits & Hien, 2013; Ruglass, Lopez-Castro, Cheref, Papini, & Hien, 2014). Most recently, Hien and colleagues completed a randomized controlled trial testing the combination of sertraline with an integrated cognitive-behavioral treatment [Seeking Safety (SS)] for individuals with co-occurring PTSD and AUD (Hien et al., 2015). Sixty-nine participants were randomized to SS plus sertraline (n = 32) or SS plus placebo (n = 37). Findings revealed that the SS plus sertraline group exhibited a significantly greater reduction in PTSD symptoms than the SS plus placebo group at end-of-treatment, which was sustained at 6- and 12-month follow-up. Both SS treatment groups improved significantly on AUD severity at all posttreatment time points with no significant differences between SS plus sertraline and SS plus placebo.

Given the limited data on the relationship between race and PTSD/AUD treatment outcomes, the Hien et al. (2015) clinical trial data set provided a unique opportunity to conduct a secondary analysis to examine three important exploratory research questions: 1) Are there racial differences in treatment adherence and completion of combined Seeking Safety and sertraline (SS-S) or Seeking Safety and placebo (SS-P)? 2) Does race moderate the effect of combination treatments on PTSD and AUD outcomes? 3) Does race interact with baseline depression to influence treatment outcomes (PTSD and AUD symptoms)?

Identifying whether there are racial differences in treatment adherence, completion, and outcome among this population and any potential contributing factors related to differences may help us better understand racial disparities and improve quality of care among vulnerable populations.

Methods

Participants

This secondary analysis used data from a randomized control trial that tested the combination of sertraline with an integrated cognitive-behavioral treatment (Seeking Safety) for individuals with co-occurring PTSD and AUD. For complete details on procedures, see Hien et al. (2015).

Inclusion criteria were: (1) *Diagnostic and Statistical Manual of Mental Disorders* Fourth Edition (*DSM-IV-TR*) (American Psychiatric Association, 2000) criteria for full PTSD or subthreshold PTSD (Grubaugh et al., 2005) defined as meeting Criteria A (exposure to a traumatic stressor), B (re-experiencing symptoms), E (symptom duration of at least 1 month), and F (significant distress or impairment of functioning), and either C (avoidance and/or numbing symptoms) or D (increased arousal symptoms); (2) *DSM-IV-TR* criteria for current alcohol abuse or dependence. Individuals were also eligible if they reported alcohol misuse defined as either hazardous drinking (for women, more than 7 drinks per week; for men, more than 14 drinks per week) or binge drinking (4 or more drinks over a 2 hour time frame for women and 5 or more drinks over a 2 hour time frame for men.

Exclusion criteria were: (1) advanced stage medical disease; (2) organic mental syndrome; (3) diagnosis of bipolar I or psychotic-spectrum disorders; (4) any disorder which might have made antidepressant treatment hazardous; (5) current pregnancy or lactation; (6) history of seizures (not related to alcohol withdrawal); (7) current use or prescription of psychotropic medications by another physician; (8) history of allergic reaction to sertraline; (9) current active suicidal or homicidal ideation, intent, or behavior; (10) age over 65 or under 18, and; (11) refusal to be audio and videotaped. Individuals with other SUDs or current MDD were not excluded.

After baseline assessment and medical clearance, all eligible participants began a one-week, single-blind placebo lead-in phase, during which they met with a trained clinician for a 30–45 minute motivational enhancement session. Those who completed the lead-in phase were accepted into the study and randomly assigned to one of the two treatment conditions (Seeking Safety plus sertraline (SS-S; n = 32) or Seeking Safety plus placebo (SS-P; n = 37). Participants completed weekly assessments during the 12-week treatment and were re-assessed at 1-week, 6-months, and 12-months post-treatment.

Of the 69 randomized participants, 57 were included in this secondary analysis (41 Non-Hispanic African Americans and 16 Non-Hispanic Caucasians). Latinos (n = 7) and those who self-identified as Multiracial/Other (n = 5) were excluded from the analyses as these numbers were too small to make meaningful comparisons.

Procedures

Treatments. 1. Cognitive Behavioral Therapy—Seeking Safety (Najavits, 2002) is a manualized intervention, based on five central ideas: (1) safety as the priority; (2) integrated treatment of PTSD and AUD disorders; (3) a focus on ideals; (4) four content areas: cognitive, behavioral, interpersonal, and case management; and (5) attention to therapist processes. The 25 core sessions of Seeking Safety were abbreviated to 12 core sessions in consultation with its developer. Treatment sessions were delivered in a 60-minute weekly individual format by eight experienced (PhD or LCSW level) research therapists who underwent rigorous training and supervision in the Seeking Safety protocol**.** *2. Medication.* Matching capsules contained either sertraline or placebo as well as riboflavin to assess medication adherence. Compliance was also monitored by pill count. Participants who received sertraline started on 50 mg daily and were titrated up to 200 mg daily over a 2-week period. Participants continued on full sertraline dose until the end of the trial and were tapered after unblinding. Responders were offered the option to remain on medication.

Measures

Demographics—Data on race/ethnicity, age, education, and income were collected by self-report.

The Structured Clinical Interview for DSM-IV for Axis I Disorders (SCID-I; First, Spitzer, Gibbon, & Williams, 2002) was administered at baseline and follow-up timepoints to assess current A/SUD diagnoses, age of A/SUD onset, and the presence of any other current or past mood disorder (e.g., MDD or dysthymic disorder). High interrater reliability has been demonstrated for the SCID-I (First et al., 2002).

The Time Line Follow Back (TLFB; Sobell & Sobell, 1995) method was used to assess alcohol/substance use consumption 90 days prior to treatment and at each posttreatment follow-up time points. Several variables were computed from the TLFB: average number of drinks per drinking day in the past 7 days (ADD; range for SS-S = 0–10; range for SS-P = 0–17), number of heavy drinking days in the past 7 days (HDD; five or more drinks per day for men and four or more drinks per day for women are considered heavy drinking days; range for SS-S and SS-P = 0–7 days), and self-reported abstinence from alcohol in the prior 7 days (ABS; range for SS-S and SS-P = 0–1).

The Life Events Checklist **(**LEC; Gray, Litz, Hsu, & Lombardo, 2004) assessed exposure to potentially traumatic events (e.g., physical assault, sexual assault, life-threatening illness or injury) that might lead to PTSD.

The Clinician Administered PTSD Scale (CAPS; Weathers, Keane, & Davidson, 2001) assessed frequency and intensity of PTSD symptoms, impairments in social and occupational functioning, overall symptom severity, and PTSD diagnosis. The CAPS was administered at baseline and all post-treatment follow-up time points. The CAPS has demonstrated excellent interrater and test–retest reliability and strong discriminant and convergent validity (Weathers et al., 2001). The total CAPS severity score was used in the analysis (range 0–136). The range for participants in the SS-S group was 37–96 and for participants in the SS-P group was 27–89.

The Modified Post Traumatic Stress Disorder Symptom Scale-Self Report (MPSS-SR; Falsetti, Resnick, Resick, & Kilpatrick, 1993) is a 17-item self-report inventory, which assesses the frequency and severity of PTSD symptoms corresponding to the DSM-IV diagnostic criteria. Participants completed the PSS-SR at baseline, weekly during treatment, and at all post-treatment follow-up points. MPSS-SR total scores can range from 0–119.

Treatment adherence was measured in several ways: *Session attendance* (0–12) was the number of psychotherapy or medication sessions attended by each participant. Psychotherapy and medication sessions were conducted separately, thus two variables were created for these measures. *Treatment completion* was defined as attending at least six or more therapy sessions (50% of 12 possible therapy sessions). *Medication adherence* was evaluated using urine screens analyzed for riboflavin and defined as the proportion of urine screens that were positive for riboflavin (range 0 to 1).

Statistical Analysis

Bivariate analyses were utilized to compare demographics, baseline symptom severity, and treatment adherence (number of psychotherapy sessions attended; number of medication sessions attended; and level of medication compliance) by racial group. Summary statistics are presented as means and standard deviations for continuous variables and percentages for categorical variables (See Table 1).

The main outcome variable for PTSD was CAPS total severity score. The main outcome variables for AUD were average number of drinks per drinking day in the past 7 days (ADD), number of heavy drinking days in the past 7 days (HDD; five or more drinks per day for men and four or more drinks per day for women are considered heavy drinking days), and self-reported abstinence from alcohol in the prior 7 days (ABS).

All analyses were conducted on the intent-to-treat sample. Generalized estimating equations (GEE) were utilized to assess whether race moderated the effect of treatment on PTSD and alcohol use outcomes (Ballinger, 2004). This method is able to handle correlated data arising from repeated measurements, requires no parametric distribution assumption, provides robust inference with respect to misspecification of the within-subject correlation, and considers missing at random (Zeger, Liang, & Albert, 1988; Zeger & Liang, 1986). The correlation between the repeated measurements within subject was modeled using the first-order auto regressive structure. Models were specified according to the distributions of the outcome measures. Identity link functions for normal distributions were used to model CAPS severity scores, negative binomial models were applied to the alcohol consumption measures of HDD and ADD, and past 7 days abstinence rate (ABS) was modeled using logit link for binary distribution.

All models included variables of race, time, treatment, and any demographic or baseline diagnostic covariates for which there was a significant difference between groups. The possible interactions between race, treatment, baseline depression, baseline level of the outcome measures were tested and included in the final model if significant at $p<.1$.

Consistent with prior studies applying similar analytic methods to comparable sample sizes (Schneier et al., 2012), and to reduce the probability of Type-II errors (Selvin, 2004), interactions that were at least trend-level (i.e., alpha < .10) were probed for simple effects at posttreatment and follow-up timepoints. When an interaction did not meet this criterion, outcomes were modeled as main effects with covariates of time and baseline values of the outcome measures included in the model. All simple and main effects were considered significant at the alpha = .05 level (two-tailed). Given the antidepressant effects of sertraline are not presumed to extend into the 12 month follow-up window after discontinuation (Machado-Vieira et al., 2010), results are presented for the posttreatment and 6 months follow-up timepoints only.

RESULTS

Demographic Data and Baseline Diagnoses and Symptom Severity

African American and Caucasian participants were similar in age, percentage employed, and income (Table 1). On average, participants were approximately 47 years old (SD = 8.57), and 82% were women. Caucasian participants had significantly more years of education than African Americans (15.38 (SD = 3.26) versus 12.74 (SD = 1.97), respectively; t = 3.02, p<.01).

There were no significant racial differences in terms of number of different types of trauma exposures, age of onset of traumatic experiences, PTSD diagnosis or PTSD symptom severity. On average, all participants reported exposure to two and half different types of traumatic events. Average age of onset of trauma exposure for all participants was 19 years old. Seventy eight percent of African American and 75% of Caucasians were diagnosed with PTSD. Fifty six percent of African Americans were diagnosed with MDD at baseline compared with 75% of Caucasians, but this was not significantly different.

There were no statistically significant racial differences in frequency and quantity of alcohol use at baseline. On average, all participants consumed approximately 7 drinks per drinking day during the prior 7-days, and reported 3 heavy drinking days in the prior 7 days. Fifteen percent of African Americans reported past 7-day abstinence compared to none of the Caucasians. Overall, 28% met diagnostic criteria for current AUD at baseline and about 43% met diagnostic criteria for current SUDs (either cannabis or cocaine use disorders). No statistically significant racial differences emerged in rates of AUD/SUD diagnosis.

Treatment Adherence

African American and Caucasian participants were equally adherent in terms of number of psychotherapy sessions attended (M = 6.22, SD = 4.11 versus M = 6.06, SD = 5.18, respectively), number of medication sessions attended (M = 6.63, SD = 4.28 versus M = 7.19, SD = 4.86, respectively) and medication compliance as assessed by urine riboflavin detection (M = 0.43, SD = 0.33 versus M = 0.51, SD = 0.39, respectively, See Table 1).

PTSD Symptom Improvement

Pre-treatment mean PTSD total symptom severity scores (as measured by the CAPS) for African Americans who received SS-S was 66.19 (SD = 17.45), for African Americans who received SS-P was 58.48 (SD = 16.89), for Caucasians who received SS-S was 69.60 (SD = 22.74), and for Caucasians who received SS-P was 51.33 (SD = 16.19). Both African American and Caucasian participants had significant reductions in their PTSD total symptom severity scores over time (See Table 2 for posttreatment, 6-month follow-up PTSD symptom severity scores).

The GEE analysis of PTSD total symptom severity scores over time revealed a nonsignificant effect of race ($B = 7.12$, SE = 9.77, ns). However, there was an interaction between race and treatment condition on PTSD total symptom severity at posttreatment that approached significance ($X^2(1) = 2.96$, p = 0.09). Post-hoc analyses revealed that among African Americans, CAPS scores were significantly lower for those who received Seeking Safety and sertraline compared to those who received Seeking Safety and placebo (z = −2.21, p = 0.03). In contrast, among Caucasians, there was no differential effect of treatment condition on PTSD symptom severity at posttreatment (z = 0.57, p = 0.57). There was also an interaction between race and baseline Major Depression Diagnosis on PTSD total symptom severity that approached significance ($X^2(1) = 3.56$, p = 0.06). Among African Americans, those with Current Major Depression at baseline had significantly higher posttreatment CAPS total scores compared with those without Current Major Depression (z = 3.09, p < 0.01). Among Caucasians, there was no differential effect of baseline Major Depression Diagnosis on CAPS total scores at posttreatment (z = −0.60, p = 0.55).

Quantity and Frequency of Drinking

GEE analyses of quantity and frequency of drinking over time yielded no significant race effect (mean numbers of drinks per drinking day ($X^2(1) = 0.12$, p = 0.73), number of heavy drinking days ($X^2(1) = 0.97$, p = 0.33), and 7-day abstinence rate ($X^2(1) = 0.20$, p = 0.65)) nor any race x treatment condition interaction effect (mean numbers of drinks per drinking day ($X^2(1) = 0.30$, p = 0.59), number of heavy drinking days ($X^2(1) = 1.10$, p = 0.30), and 7-day abstinence rate ($X^2(1) = 1.38$, p = 0.24)).

Discussion

We examined racial differences in treatment adherence, completion, and treatment outcomes in a clinical trial that tested the combination of sertraline with an integrated cognitive-behavioral treatment (Seeking Safety) for individuals with co-occurring PTSD and AUD. Except for education level, findings revealed that the African American and Caucasian participants were similar in terms of demographic, trauma-related (e.g., number of different types of trauma exposures, level of severity of PTSD), MDD, alcohol and substance use characteristics/disorders.

There were no significant differences in terms of number of psychotherapy/medication sessions attended and level of adherence to the medication as assessed by riboflavin, suggesting African Americans and Caucasians were equally adherent during the treatment

process. This contrasts with findings that suggest that African Americans are more likely to drop out of treatment and less likely to adhere to medication treatments, particularly antidepressant medications (Ayalon, Areán, & Alvidrez, 2005; Lesser et al., 2011; Neighbors et al., 2007). Adherence to antidepressant medications or psychosocial treatments is often related to particular beliefs, attitudes, and preferences people may hold related to particular treatments (Cooper et al., 2003). Although the present study did not assess beliefs about particular treatments directly, the fact that African American and Caucasian participants were equally adherent suggests similar levels of acceptability of the treatments.

In line with other findings on the more severe impact of depression upon African American individuals, this study demonstrated that a diagnosis of Major Depression had a more detrimental effect for African American individuals than Caucasian individuals on PTSD symptom severity outcomes at follow-up. Despite racial similarities in rates of depression, the association between depression and PTSD differed by race. African American individuals with baseline Major Depression had higher levels of PTSD symptom severity at post-treatment compared to African American individuals without baseline Major Depression. This differential impact of depression was not evident among the Caucasian participants. It is possible that the severity and duration of MDD among African American participants in this study may have negatively impacted their PTSD symptom recovery. This is consistent with an epidemiological study by Williams et al. (2012) who found that while African Americans and Caucasians had similar 12-month estimates of MDD, African Americans were more likely to have untreated, persistent, and disabling MDD.

All participants demonstrated reduction in their PTSD symptoms at posttreatment and follow-up timepoints. After adjusting for age, education, baseline Major Depression, and baseline PTSD symptoms, however, a race by treatment interaction emerged suggesting that African Americans who received the SS plus sertraline had significantly *lower* PTSD symptoms posttreatment and at 6-months follow-up compared to their counterparts who received SS and placebo. In contrast, Caucasian participants did not demonstrate this differential benefit from the Sertraline and thus, there were no differences between outcomes for the Caucasians regardless of whether they received the medication or not. The more favorable response to SS plus sertraline among African American participants is in contrast to previous studies that have shown either poorer or equal response to SSRIs antidepressants among African Americans when compared to Caucasians ((Lesser et al., 2007, 2010, 2011). It is possible that genetic or cultural factors were responsible for the more favorable response (Burroughs, Maxey, & Levy, 2002). For example, racial/ethnic differences have been found in the P450 enzyme and serotonin transporter systems that influence the metabolism and elimination half-life of particular drugs (Chaudhry, Neelam, Duddu, & Husain, 2008; Murphy & McMahon, 2013; Murphy et al., 2013). Moreover, racial/ethnic differences in environmental factors such as diet and/or use of herbal remedies may also influence drug response (Chaudhry et al., 2008). However, the present study was not able measure these variables so these hypotheses are speculative. Alternatively, the small sample size of the Caucasian participants may not have been powered enough to detect the differential impact of the medication. Alcohol use outcomes were not influenced by race nor did race interact with treatment to influence alcohol use outcomes at posttreatment or follow-up.

Several limitations should be noted. As noted earlier, our sample sizes were small and thus may have been underpowered to detect statistically significant differences between African Americans and Caucasians. Moreover, we were unable to separate out factors related to the onset versus course of MDD. And relatedly, we were not able to tease apart the impact of the medication on the MDD versus PTSD symptoms (i.e., which improved first). Future studies with larger samples are needed to tease apart these differential impacts. Finally, the low treatment completion rate across all participants (i.e., only 50% completed 6 or more sessions) should be taken into consideration when interpreting the findings. However, this study's completion rate is similar to other clinical trials' attendance rate (McGovern et al., 2015; Mills et al., 2012) and studies have found Seeking Safety to be efficacious at reducing PTSD and A/SUD symptomatology after attending six or fewer sessions (Najavits & Hien, 2013)

Despite limitations, these findings suggest MDD may serve as a pre-existing diathesis that may negatively impact PTSD recovery, particularly among African Americans. Given the differential impact of MDD on African Americans and Caucasians, increased attention to the assessment and treatment of MDD among African Americans with PTSD and AUD may improve treatment outcomes. Although speculative, there may be a differential medication impact (moderated by factors such as differential metabolism and half-life elimination of the medication as well as dietary influences) for depressed African Americans. The preliminary finding that African Americans benefited more from Seeking Safety and sertraline compared to Seeking Safety and placebo needs to be replicated with a larger sample. This finding warrants investigation of the differential neurobiological and cultural factors that influence the pharmacokinetics of antidepressant response among various racial/ethnic groups.

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Table 1

Demographic, Cliical, and Treatment Characteristics

	Total (*n* = 57)	**African Americans (*n* = 41)**	**Caucasians (*n* = 16)**
		Mean (SD) or %	
Women	82.46%	80.49%	87.50%
Age (years)	43.60 (8.57)	43.88 (7.30)	42.88 (11.45)
Education (years)	13.48 (2.65)	12.74 (1.97)	15.38 (3.26)
Employed	78.95%	78.05%	81.25%
Monthly income from employment	988 (2845)	994 (3239)	971 (1599)
Lifetime traumatic experiences			
Number of different types	2.57 (1.02)	2.50 (1.08)	2.75 (0.86)
Onset age of traumatic experiences	19.04 (18.80)	20.00 (21.35)	16.75 (10.78)
PTSD			
Full PTSD (vs. subthreshold)	77.19%	78.05%	75.00%
Age at PTSD onset	25.88 (14.65)	24.24 (14.70)	30.06 (14.11)
CAPS total severity	61.84 (18.53)	61.49 (17.32)	62.75 (21.93)
MPSS-SR total severity	54.26 (13.58)	55.56 (14.50)	50.94 (10.54)
Current Major depression	61.40%	56.10%	75.00%
Alcohol use severity			
Average drinks per drinking day past 7 days	6.83(5.07)	6.75(5.31)	7.05(4.51)
Heavy drinking days past 7 days	3.04(2.35)	3.02(2.46)	3.07(2.09)
Past 7-day abstinence	10.71%	14.63%	0.00%
Current alcohol use disorder	92.98%	92.68%	93.75%
Onset age of alcohol use disorder	28.49 (11.26)	27.65 (10.41)	30.44 (13.17)
Other Drug use			
Current drug use disorder	42.59%	47.37%	31.25%
Cannabis	10.53%	7.32%	18.75%
Cocaine	33.33%	36.59%	25.00%
Onset age of drug use disorder	22.88(7.31)	24.17 (7.08)	19.00 (7.01)
Treatment Adherence			
Number of *Seeking Safety* sessions attended	6.18 (4.39)	6.22 (4.11)	6.06 (5.18)
Number of medication visits attended	6.79 (4.41)	6.63 (4.28)	7.19 (4.86)
Completion (>=6 sessions)	50.89%	51.22%	50.00%
Medication Compliance	0.43 (0.33)	0.40 (0.30)	0.51 (0.39)

Note. Heavy drinking day = five or more drinks for men; four or more for women. CAPS = Clinician Administered PTSD Scale. Except for education (t=3.02, p<.01), there were no statistically significant differences in demographic, clinical or treatment characteristics between African Americans and Caucasians at p<.05.

Table 2

PTSD Severity Scores at Posttreatment and 6-month Follow-ups by Race and Treatment Condition

	Baseline	**Posttreatment**	**6-month**
	Mean (*SD*, n)		
African Americans			
SS-S	66.19 (17.45, n=16)	26.54 (24.06, n=13)	27.08 (24.89, n=12)
SS-P	58.48 (16.89, n=25)	38.90 (29.58, n=20)	38.47 (28.79, n=19)
Effect size (95% CI)		0.45 (−0.27, 1.14)	0.42 (−0.32, 1.13)
Caucasians			
SS-S	69.60 (22.74, n=10)	50.38 (22.58, n=8)	37.67 (12.29, n=6)
SS-P	51.33 (16.19, n=6)	44.00 (14.14, n=2)	33.50 (16.62, n=4)
Effect size (95% CI)		−0.29 (−1.82, 1.29)	−0.30 (−1.54, 1.00)

Note. SS-S = Seeking Safety and Sertraline; SS-P = Seeking Safety and Placebo.