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Racial/Ethnic Match and Treatment Outcomes for Women with PTSD and Substance Use Disorders Receiving Community-Based Treatment

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Abstract This study examined the relationship between racial/ethnic match and treatment outcomes for 224 women who participated in a clinical trial of group treatments for posttraumatic stress disorder (PTSD) and substance use disorders. Generalized estimating equations were used to examine the effect of client–therapist racial/ethnic match on outcomes. Results revealed racial/ethnic match was not significantly associated with session attendance. There was a significant three-way interaction between client race/ethnicity, baseline level of PTSD symptoms, and racial/ethnic match on PTSD outcomes. White clients, with severe PTSD symptoms at baseline, who attended treatment groups where they were matched with their therapist, had greater reductions in PTSD symptoms at follow-up than their counterparts who were racially/ethnically mismatched with their group therapist. Racial/ethnic match did not confer additional benefits for Black clients in terms of PTSD outcomes. Racial/ethnic match interacted with baseline substance use to differentially influence substance use outcomes at follow-up for all women. Clinical implications are discussed.

Keywords Racial/ethnic match · PTSD · Substance use disorders · Women · Treatment outcomes

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Introduction

Treatment interventions for co-occurring posttraumatic stress disorder (PTSD) and substance use disorders (SUDs) have shown promising results (Hien et al. 2004, 2009; Najavits 2002) and provide alternatives to traditional relapse prevention strategies for women in substance abuse treatment. However, given high drop-out rates and difficulties with retention among this population, questions remain as to the specific conditions under which these women can best be engaged and benefit from treatment. While the evidence on racial/ethnic differences in prevalence rates of PTSD and SUDs is mixed (Pacek et al. 2012; Pole et al. 2008; Roberts et al. 2010), research findings indicate there are racial/ethnic disparities in the adverse consequences of these conditions and in access to mental health care (Pacek et al. 2012). For example, racial/ethnic minority clients are more likely to evidence negative social and health consequences related to their PTSD and SUD, have less access to evidence-based care, and are more likely to underutilize and drop out of care compared with their White counterparts (Pole et al. 2008; Wells et al. 2001). Thus, racial/ethnic minorities may experience a

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greater disability burden from their co-occurring conditions due to lack of adequate treatment. Researchers and clinicians in the field have called for the use of more culturally competent strategies in order to reduce disparities in treatment outcomes (e.g., Campbell and Alexander 2002; Ford 2008; Sue et al. 2009). A frequently recommended culturally competent treatment strategy is racial/ethnic matching of therapists and clients. The common assumption is that the racial/ethnic similarity between client and therapist will facilitate communication, understanding, trust, and perceptions of credibility; all of which are assumed to enhance treatment outcomes (Cabral and Smith 2011; Sue et al. 2009).

Racial/Ethnic Match, Retention, and Treatment Outcomes

A number of studies have been conducted over the past three decades examining the consequences of racial/ethnic matching. Results of large-scale archival studies that utilize patients' inpatient and outpatient mental health records indicate that racial/ethnic mismatching is frequently associated with higher drop-out rates and fewer numbers of sessions attended (e.g., Flaskerud and Liu 1991; Jerrell 1998; Sue et al. 1991). Results of effectiveness studies that examine treatment process and outcome have been mixed. Several studies found that within racially/ethnically matched dyads, patients had higher alliance ratings, reported greater understanding and acceptance of the treatment approach, and displayed more positive post-treatment outcomes compared to racially/ethnically mismatched dyads (Ricker et al. 1999; Thompson and Alexandar 2006; Wintersteen et al. 2005). In contrast, other studies fail to find evidence that ethnic matching leads to better treatment outcomes or greater satisfaction with therapy (Erdur et al. 2003; Jones 1982).

Four meta-analyses of racial/ethnic match studies have been conducted to synthesize disparate findings (Cabral and Smith 2011; Coleman et al. 1995; Maramba and Hall 2002; Shin et al. 2005). Maramba and Hall found that racial/ethnic match was related to lower dropout rates and an increase in number of sessions attended. Yet, given the small effect size of the findings, the authors concluded that racial/ethnic match may not be a clinically significant predictor of retention. Shin et al. found no significant overall effect of client-therapist racial/ethnic matching on outcomes for either African American or Caucasian American patients, which led them to argue that racial/ethnic match may have limited utility. These latter analyses, however, were limited by their small sample sizes and global outcome measures. In a more recent and larger meta-analysis of 81 studies, Cabral and Smith (2011) found that while racial/ethnic matching was unrelated to treatment outcomes, racial/ethnic minorities had strong preferences for and more positive perceptions of racially/ethnically similar therapists.

Karlsson (2005), in a critical review of the ethnic match literature, argued that the mixed findings across studies are due to methodological and conceptual limitations such as small sample sizes, differences in study populations and definitions of race and ethnicity, and lack of randomized control trials that balance out confounding factors between treatment and control groups. Karlsson advocated for large scale clinical trials of psychotherapy that take into account the aforementioned issues.

Racial/Ethnic Match and Group Treatment

Notably, the majority of research conducted on racial/ethnic match and treatment outcomes has focused on individual treatment modalities without examining group treatments. For certain conditions, such as alcohol and drug dependence, delivery of treatment in groups has far surpassed the use of individual-based treatments in community practice (Center for Substance Abuse Treatment (CSAT) 2005). The provision of treatment in a group format provides a cost-effective way of delivering treatment to those most in need. Moreover, the group context provides opportunities for increased connection and support from others who have gone through similar experiences, normalization of post-trauma symptoms, strengthening coping skills, and an increase in hope, self-esteem, and self-acceptance (CSAT (2005); Foy et al. 2001; Yalom and Leszcz 2005). Thus, understanding factors that influence group treatment outcomes among vulnerable populations is essential.

The aim of the present study was to extend the racial/ethnic match findings by examining the effects of racial/ethnic match in group treatments for women with co-occurring PTSD and SUD who participated in a large, multi-site, randomized clinical trial. The following questions were examined: (1) Does racial/ethnic match with group therapists lead to greater session attendance? (2) Does racial/ethnic match with group therapists lead to better treatment outcomes? (3) Does attending groups where a large proportion of the group members are matched with the group therapist lead to better treatment outcomes?

Methods

This secondary analysis included a subsample of 224 women who participated in a multi-site, randomized, controlled clinical trial of group treatments for women with co-occurring PTSD and SUDs (The Women and Trauma Study). The treatment trial was conducted through the

National Institute on Drug Abuse's Clinical Trials Network and implemented in seven community-based substance abuse treatment programs in geographically diverse locations across the continental United States.

Women were eligible to participate in the trial if they met the following inclusion criteria: (1) at least one traumatic event in their lifetime and current DSM-IV (APA 2000) criteria for full or sub-threshold PTSD (sub-threshold PTSD was 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 numbing symptoms] or D [symptoms of increased arousal]); (2) 18–65 years of age; (3) used alcohol or an illicit substance within the 6 months prior to screening and met current diagnosis of drug or alcohol abuse or dependence; and (4) capable of providing informed consent. Participants were excluded if they had (1) impaired cognition as indicated by a Mini-Mental Status Exam (Folstein et al. 1975) score of <21; (2) significant risk of suicidal/homicidal intent or behavior (*Psychiatric Research Interview for Substance and Mental Disorders [PRISM];* Hasin et al. 1998); (3) history of schizophrenia-spectrum diagnosis or active (past 2 months) psychosis; (4) involvement in litigation related to PTSD; or (5) non English-speaking.

Eligible women ($N = 353$) were randomized to one of two group interventions: Seeking Safety (SS; Najavits 2002) or Women's Health Education (WHE; Miller et al. 1998). Both groups also received standard substance abuse treatment from their treatment programs. Recruitment occurred over a 21-month period in 2004-2005. Treatment consisted of two group sessions per week over approximately 6 weeks. Participants were assessed weekly during treatment, and at 1-week, 3-, 6-, and 12-months posttreatment. All participants were English speakers; persons receiving treatment in Spanish were not included in this study. (For a full description of the study design and procedures, see Hien et al. 2009). Of the 353 randomized participants, 224 participants were selected for inclusion in these secondary analyses. Forty-nine participants who identified as multiracial were excluded from the analyses because we were not able to match them based on race/ethnicity. Twenty-three Latina patients (11 were matched and 12 were not matched) were excluded due to insufficient numbers to adequately power statistical analyses. Finally, 57 participants (38 Whites and 19 African Americans) who did not attend any treatment sessions were excluded from the analyses.

Interventions, Training, and Fidelity

Both groups had an open, rolling enrollment format and lasted approximately 75–90 min. Thus, the 12 group sessions were on a continuous loop (e.g., participants might enter at session 5 and finish with session 4). Groups operated as long as there were three women randomized into a given treatment at one time and at least two in attendance at any given session.

The SS (Najavits 2002) treatment was abbreviated from 25 to 12 core sessions to better fit within a feasible time frame for community-based outpatient treatment programs. Seeking Safety is a structured, cognitive-behavioral treatment with both trauma and substance use components integrated into each session. All sessions have the same structure: (1) check in, including reports of "unsafe" behaviors and use of coping skills; (2) session quotation, a brief point of inspiration to affectively engage participants and link to the session topic; (3) topic discussion and structured skill practice, relating session material to the participants' lives; and (4) check out, including a commitment to specific between-session skill practice.

The WHE control condition (Miller et al. 1998) was a psychoeducational, manualized treatment focused on health related topics (e.g., female body systems, pregnancy and childbirth, HIV/AIDS and other sexually transmitted infections, diabetes, and hypertension). The WHE was designed to provide equivalent therapeutic attention and an issue-oriented focus, but without theory-driven techniques used in SS, nor any explicit focus on psychoeducation specific to substance abuse or trauma. WHE sessions also followed a structured format: (1) introduction of topic; (2) review of group rules and between-session assignment; (3) topic presentation, (4) video, story-telling and/or text readings; (5) topic exercises in a variety of formats to facilitate group discussion and application of session materials; and (6) between-session goal-settings.

Two therapists and two supervisors from each site were selected based on willingness to be randomized and submission of an audiotaped relapse prevention session exemplifying their ability to deliver a manualized, cognitive behavioral style of therapy. All therapists ($N = 15$) and supervisors attended a comparable centralized three-day workshop on their respective interventions. Supervisors received another half day of training focused on how to carry out study supervision. Counselors and supervisors were certified in their respective interventions at their treatment programs upon successful completion of a training group of at least four sessions viewed and rated by an expert trainer from the lead.

During study implementation, all intervention sessions were videotaped and a proportion of tapes rated by supervisors. Therapists met weekly with supervisors for study supervision. In order to ensure competency on an ongoing basis, supervisors had weekly conference calls with lead training experts. The expert trainers co-rated a randomly selected quarter of the therapist session tapes

reviewed by the supervisor to monitor ratings reliability on adherence measures for each treatment (adherence was determined by at least 70 % agreement across items).

Measures

Sociodemographic characteristics were obtained by participants' self-report. Years of education were collapsed into a 3-level categorical variable (less than a high school degree, high school degree or equivalent, and more than high school education). Participants responded to a forced choice question about their race/ethnicity. Race and ethnicity were combined into a single composite variable reflecting the major racial/ethnic categories into which the sample fell. The resulting racial/ethnic groupings were Non-Hispanic Black/African American, Non-Hispanic White, Latina/Hispanic-American, and Multiracial.[1] None of the participants self-identified as Asian American, American Indian, or Native Hawaiian/Pacific Islander.

We acknowledge the limitations of grouping individuals based solely on their racial/ethnic identifications. Ethnicity can be viewed as a multidimensional concept that encompasses race, culture, ethnic identity, minority status, and acculturation among other factors (Phinney 1996). However, the concept of the "modal personality" (i.e., characteristics held by most people in a group) is often used in support of such broad groupings (Inkeles and Levenson 1969; Zane et al. 2003). While there might be within-group heterogeneity, using the average characteristics of a particular group or generalizations about group members allows one to make meaningful comparisons across groups (Inkeles & Levinson; Zane et al. 2003).

Addiction Severity Index (*ASI-Lite*, revised version of the 1997 ASI Fifth Edition; McLellan et al. 1992). Alcohol and substance use data were collected using the ASI-Lite, a standardized, multidimensional, semi-structured interview. The maximum number of days of use in the previous 30 days across any alcohol or illicit drug (heroin, methadone, opiates, barbiturates, sedatives, cocaine/amphetamines, marijuana) was calculated and organized into three categories: abstinence (no use); light use (used 1–12 days) and heavy use [used 13 or more days (i.e., more than 3 days per week)]. This is in line with ASI convention of coding more than 3 days of use per week as heavy use.

Clinician Administered PTSD Scale (*CAPS*) (Blake et al. 1995) is a structured interview, which measures frequency and intensity of signs and symptoms of PTSD in the past 30 days and is used as a measure of DSM-IV PTSD diagnosis and treatment outcome. The scale has three symptom cluster subscales: re-experiencing, avoidance/numbing, and hyperarousal. PTSD symptom cluster severity scores were calculated by summing the frequency and intensity scores obtained from each subscale items; a total PTSD severity score is obtained by summing the subscale scores. The range of possible scores on the CAPS is from 0 to 136.

Individual Racial/Ethnic Match Client-Group Therapist racial/ethnic match was dichotomized as matched or not matched. Clients were considered matched if they attended groups conducted by therapists from the same racial/ethnic background [e.g., Black client–Black therapist (Match) or White client–White therapist (Match)]. Clients were considered not matched if they attended groups conducted by therapists from different racial/ethnic backgrounds [e.g., Black Client–Latina therapist (No Match) or White client–Black therapist (No Match)]. Forty-nine participants, who self-identified as multiracial, were omitted from the analyses because we were unable to categorize them as matched or not matched based on race/ethnicity. Likewise, 57 participants (38 Whites and 19 African Americans) who did not attend any treatment sessions were excluded from the analyses; Finally, Latina patients (11 were matched and 12 were not matched) were excluded due to insufficient numbers to adequately power statistical analyses.

Group Racial/Ethnic Match An additional variable was created in order to account for the influence of racial/ethnic composition of the treatment group members and their match with the group therapist. Group racial/ethnic match represented, on average, over the course of the 6-week treatment period, the proportion of group members who were racially/ethnically matched with the group therapist. The range of values was from 0 (no group members were racially/ethnically matched with the group therapist) to 1 (all group members were racially/ethnically matched with the group therapist).

Session attendance was the absolute number of sessions the participant attended (range 0–12).

Statistical Analysis

Demographic information and severity of symptoms at baseline were compared by race/ethnicity with the *t* test for continuous variables and the Chi square test for categorical variables.

The generalized linear model (GLM) for longitudinal data was applied to test the relationship between client race/ethnicity, individual (client-therapist) racial/ethnic match, group racial/ethnic match, session attendance, and treatment outcomes. Treatment outcomes were a continuous measure of CAPS severity total score and an ordinal measure of the maximum number of days used across 10

[1] For ease of presentation, all future references to these categories will be as follows: Non-Hispanic Black/African American = Black; Non-Hispanic White = White; Latina/Hispanic -American = Latina; Multiracial = Multiracial.

substances in the previous 30 days (i.e., zero, 1–12, 13–30). All outcomes measures were obtained at baseline and follow-up time-points (1-week, 3-, 6-, and 12-months posttreatment). Each of the two outcomes were modeled as a function of client race/ethnicity, individual racial/ethnic match, group racial/ethnic match, treatment condition, time of assessment, baseline levels of the outcome measures, and pre-selected baseline covariates including age, education level, marital status, and session attendance. Two-way and three-way interactions between client race/ethnicity, individual racial/ethnic match, group racial/ethnic match, treatment condition, and baseline scores on the outcome measures were also tested and included in the final model if significant at a 95 % confidence level ($p \leq .05$), with backward elimination procedures. Treatment program sites were treated as a fixed effect in the model. Generalized estimating equations (GEE; Diggle et al. 1994) were used to estimate and test the models. The GEE methodology is able to handle within-subject correlation arising from repeated measurements and provides robust inference with respect to misspecification of the within-subject correlation. PROC GLIMMIX in SAS (SAS 9.3) was used to conduct all analyses.

Results

Participant Demographics and Pre-treatment Symptom Characteristics

Participant and treatment characteristics ($N = 224$) are displayed in Table 1. The mean age of the participants was 39 years ($SD = 9.19$). Forty-four percent of the participants were divorced and approximately 43 % had more than a high school diploma. The categories of substance use at baseline were as follows: 41.52 % used 0 days, 31.25 % used 1–12 days, and 27.23 % used 13 or more days). The average baseline CAPS total score among all participants was 62.74 ($SD = 20.13$), consistent with a severe level of PTSD symptoms (Weathers et al. 2001). There were significant racial/ethnic differences in participants' age, marital status, education, and rate of pre-treatment illicit drug use and psychotropic medication prescription. White clients were significantly younger than Black clients ($t = 2.13$, $p = 0.04$). Black clients were more likely to be single than White clients ($\chi^2(2) = 20.26$, $p < 0.0001$). White clients were significantly more likely to have more than a high school education compared to Black clients ($\chi^2(2) = 26.40$, $p < 0.0001$). A larger percentage of Black clients used stimulants/cocaine in the 30 days prior to baseline assessment compared to Whites [52.48 % versus 26.83 %, respectively; $\chi^2(1) = 15.42$, $p < 0.001$]. There were no significant racial/ethnic differences in baseline PTSD severity scores ($p = 0.69$). A larger percentage of White clients were prescribed psychotropic medication at baseline compared with Black clients [$\chi^2(2) = 10.84$, $p = 0.001$]. Variables with significant racial/ethnic differences were controlled in the final statistical model.

Therapists Characteristics

All therapists were women. Forty-seven percent were racial/ethnic minorities [$N = 7$; Blacks ($n = 4$) and Latina ($n = 3$)] and 53 % were White ($N = 8$). The average age of the White therapists was 36.5 years ($SD = 9.24$) and the average age of the racial/ethnic minority therapists was 43 years ($SD = 7.60$). Most of the therapists had a Bachelor's or a Master's degree, with 14 % of Black and Latina therapists holding less than a Bachelor's degree. All therapists had on average five years of substance abuse treatment experience. Almost half of the White therapists reported being in recovery themselves compared with 14 % of Black and Latina therapists. Approximately 63 % of the racial/ethnic minority therapists and 38 % of the White therapists had prior trauma treatment training. The average number of hours of trauma treatment training was 8 ($SD = 8.06$) for racial/ethnic minority therapists and 6 ($SD = 9.07$) for White therapists. No significant demographic or training differences were found between the White and racial/ethnic minority therapists.

Relationship Between Racial/Ethnic Match and Session Attendance

The average number of sessions attended was approximately 7.5 ($SD = 3.66$), with no significant differences between Black and White participants ($t = 1.40$, $p = 0.16$). There were no significant associations between individual racial/ethnic match or group racial/ethnic match on session attendance ($p > 0.05$).

Relationship Between Racial/Ethnic Match and PTSD Outcomes at Follow-Up

Table 2 displays the coefficients for the covariates in the final model. The findings revealed there was a significant three-way interaction effect among baseline CAPS total scores, client race/ethnicity, and individual racial/ethnic match on CAPS total scores at follow-up [F (1, 417) = 5.94, $p = 0.02$]. Post-hoc pairwise comparisons revealed that White clients with high baseline CAPS total score, who had an individual racial/ethnic match with their group therapist, demonstrated significantly lower CAPS total score at follow-up, compared with their counterparts who did not have an individual racial/ethnic match with their group therapist ($b = -0.37$, SE = 0.17, $t = 2.23$,

Table 1 Baseline demographic, symptom, and treatment characteristics by race/ethnicity (N = 224)

Variables	M (SD) or %			χ^2 or t test
	Total (N = 224)	African American (N = 101)	White (N = 123)	
Age (years)	39.40 (9.19)	40.80 (7.89)	38.26 (10.03)	$t = 2.13$, $p = 0.04$
Marital status				$\chi^2(2) = 20.26$, $p < 0.0001$
Married	18.75	9.90	26.02	
Single	37.50	52.48	25.20	
Divorce	43.75	37.62	48.78	
Education				$\chi^2(2) = 26.40$, $p < 0.0001$
<High school	26.34	42.57	13.01	
High school	30.80	27.72	33.33	
>High school	42.86	29.70	53.55	
Substance use past 30 days				
Alcohol	44.64	48.51	41.40	$\chi^2(1) = 1.12$, $p = 0.29$
Stimulants/cocaine	38.39	52.48	26.83	$\chi^2(1) = 15.42$, $p < 0.001$
Opiates/heroin	19.20	13.86	23.58	$\chi^2(1) = 3.38$, $p = 0.07$
Marijuana	23.66	21.78	25.20	$\chi^2(1) = 0.36$, $p = 0.55$
Number of days using substances past 30 day				
Zero	41.52	39.60	43.09	$\chi^2(2) = 5.67$, $p = 0.06$
1–12 days	31.25	25.74	35.77	
13–30 days	27.23	34.65	21.14	
CAPS Severity Score	62.55 (20.52)	63.15 (17.97)	62.06 (22.46)	$t = 0.40$, $p = 0.69$
Currently prescribed psychotropic medication[a]	47.77	35.64	57.72	$\chi^2(2) = 10.84$, $p = 0.001$
Treatment condition (SS vs. WHE)	49.11	47.52	50.41	$\chi^2(1) = 0.18$, $p = 0.67$
Individual racial/ethnic match	43.30	36.63	48.78	$\chi^2(1) = 3.33$, $p = 0.07$
Group racial/ethnic match	0.41 (0.35)	0.35 (0.31)	0.46 (0.38)	$t = 2.14$, $p = 0.04$
Sessions attended	7.50 (3.66)	7.12 (3.83)	7.80 (3.50)	$t = 1.40$, $p = 0.16$

CAPS Clinical Administered PTSD Scale; Sessions attended ranged from 0 to 12

[a] Psychotropic medication was defined as medication prescribed for an emotional, psychological, or psychiatric purpose to include depression, anxiety, psychosis, mood stabilization, or sleep disturbance

$p = 0.03$). In contrast, for Black clients with high baseline CAPS scores, a different interaction pattern was observed. Black clients, who had high baseline CAPS total scores, and who had an individual racial/ethnic match with their group therapist, exhibited a higher CAPS total scores at follow-up compared with their counterparts who did not have an individual racial/ethnic match, but this effect was not significant ($b = 0.31$, SE $= 0.22$, $t = 1.38$, $p = 0.17$). To graphically illustrate the three-way interaction, we selected four subgroups of participants (Black and White clients with a baseline CAPS total score of 40, Black and White clients with a baseline caps CAPS total score of 80) representing the 16th and 80th percentiles of the CAPS scores. Figure 1 shows predicted CAPS scores for each subgroup at follow-up by the two individual racial/ethnic match subgroups (Matched versus Not-Matched). For example, as can be seen in the figure, a White participant with a baseline CAPS total score of 80, who had an individual racial/ethnic match with her group therapist, would have a predicted CAPS total score at follow-up that is 5 points lower than her counterpart who did not have an individual racial/ethnic match with her group therapist.

Table 2 The effects of racial/ethnic match on PTSD and substance use during follow-up (N = 224)

Covariates[a]	Total CAPS scores		Substance use	
	b	SE	*b*	SE
Race/ethnicity (vs. Black clients)				
White clients	−21.51	11.41	−0.22	0.38
Individual racial/ethnic match (vs. no match)				
Racial/ethnic match	−22.62	15.93	1.48*	0.70
Group racial/ethnic match	4.41	8.60	−0.11	0.99
Baseline CAPS scores	0.39**	0.13		
Baseline substance use 30 days (vs. 0 days)				
1–12 days			2.11***	0.53
≥13 days			2.58***	0.52
Session attendance	−0.38	0.40	−0.14**	0.05
SS treatment (vs. WHE)	−3.14	2.98	−0.24	0.33
Follow-up timepoints (vs. 1-week)				
3 months	−6.09***	1.56	0.36	0.28
6 months	−8.95***	1.57	0.79**	0.27
12 months	−13.47***	1.56	1.15***	0.27
Race/ethnicity (White vs. Black clients) × individual racial/ethnic match	47.62*	18.90		
Race/ethnicity (White vs. Black clients) × Baseline CAPS	0.32	0.18		
Baseline CAPS × individual racial/ethnic match	0.31	0.22		
Baseline CAPS × race/ethnicity × individual racial/ethnic match	−0.68*	0.28		
Baseline substance use × individual racial/ethnic match				
1–12 days × match vs. no match			−2.75***	0.81
≥13 days × match vs. no match			−1.95*	0.83

CAPS Clinical Administered PTSD Scale, *SS* seeking safety, *WHE* women's health education

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

[a] Models controlled for age, education, marital status, currently prescribed psychotropic medication at baseline, and site

Relationship Between Racial/Ethnic Match and Substance Use Outcomes at Follow-Up

There were no significant main effects of treatment condition, client race/ethnicity, or group racial/ethnic match on substance use outcomes at follow-up ($p > 0.05$). However, substance use outcomes at follow-up were significantly associated with number of sessions attended (F (1, 418) = 8.37, $p < 0.01$), indicating that people who attended a greater number of sessions had lower predicted substance use at follow-up ($AOR = 0.87$; 95 % CI 0.79–0.96, $p < 0.01$). For one unit of increase in the number of session attended, there was a 13 % decrease in the odds of being in the heavy substance use group.

Moreover, there was a significant two-way interaction effect between baseline level of substance use and individual racial/ethnic match on substance use outcomes at follow-up (F (2, 418) = 6.07, $p < 0.01$). Follow-up pairwise comparisons revealed that women who were light substance users (1–12 days of use at baseline) and racial/ethnically matched with their group therapist were less likely to use substances heavily at follow-up compared to their counterparts who were racially/ethnically mismatched with their group therapist, but this finding only approached significance ($AOR = 0.28$, 95 % CI 0.07–1.16, $p = 0.07$). In contrast, among women with zero days of substance use at baseline, those who were racially/ethnically matched with their group therapist were significantly more likely to be in a higher substance use category at follow-up compared with their counterparts who were racially/ethnically mismatched with their group therapist (AOR = 4.39, 95 % CI 0.24–17.23, $p = 0.03$). Finally, among women who were heavy substance users, there was no significant difference in substance use at follow-up between those who were racially/ethnically matched and racially/ethnically mismatched ($p = 0.51$).

See Table 3 for unadjusted means and standard deviations for continuous measures of all outcomes (session attendance, CAPS scores, and days of substance use) by race/ethnicity and individual racial/ethnic match at baseline and follow-up timepoints.

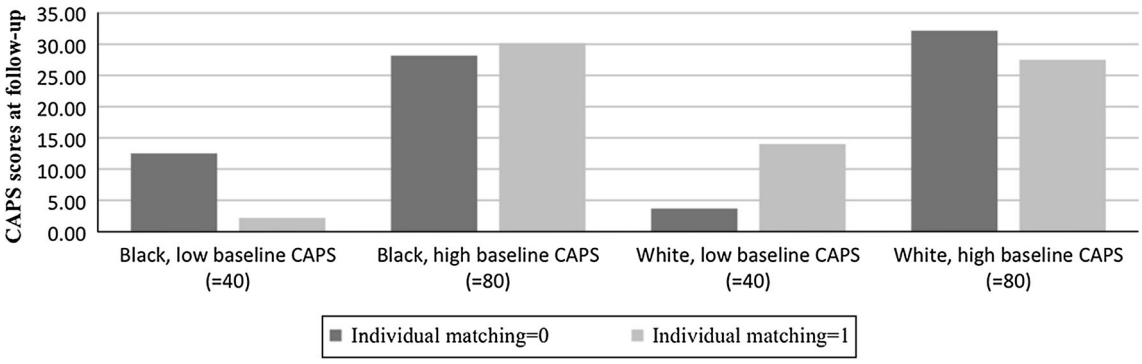

Fig. 1 The effect of individual racial/ethnic matching on Total CAPS scores at 12 month follow-up by race/ethnicity and baseline CAPS score

Discussion

This study examined the effects of client and therapist racial/ethnic match on session attendance and treatment outcomes among women with comorbid PTSD and SUD receiving either Seeking Safety (SS) or Women's Health Education (WHE) groups, in addition to their standard community-based substance abuse treatment. This study addressed several gaps in the racial/ethnic match literature by examining the impact of racial/ethnic match among women receiving group treatment in a randomized clinical trial and by utilizing more comprehensive treatment outcome measures. Both Black and White women exhibited significant reductions in their PTSD symptoms and substance use from pre- to posttreatment. There were no statistically significant differences in session attendance between Black and White participants. And neither racial/ethnic match at the individual nor group level was related to session attendance. Despite the potential for mistrust that can occur because of a trauma history and/or racial/ethnic differences, it appeared that patients were able to engage in their treatment and benefit from it regardless of whether they were the same race/ethnicity as their therapist. The lack of a significant association between racial/ethnic match and session attendance is consistent with previous research with outpatient substance abuse populations (Fiorentine and Hillhouse 1999; Sterling et al. 1998) and university college students (Erdur et al. 2003). It is also consistent with meta-analytic findings from Maramba and Hall (2002) and Shin et al. (2005) suggesting racial/ethnic match may not be a clinically significant predictor of treatment retention. The fact that session attendance is unrelated to racial/ethnic matching suggests that other variables may have been more relevant, such as perceptions of therapist credibility or competence (Erdur et al. 2003; Sue and Zane 1987).

In contrast to the findings on session attendance, there was some evidence that racial/ethnic match was related to more positive treatment outcomes under certain conditions. When PTSD symptoms were high at the beginning of treatment, White patients who had an individual racial/ethnic match with their group therapist exhibited greater improvements in their PTSD symptoms post-treatment compared to White patients with severe PTSD symptoms who did not have an individual racial/ethnic match with their group therapist. It is possible that when PTSD symptom severity is high, the individual racial/ethnic match increased the White patients' level of trust, expectation of relief from symptoms, and perceived therapist credibility and competency; all of which may have enhanced their treatment outcomes. In contrast, for Black women with severe PTSD symptoms at baseline, an individual racial/ethnic match with their group therapist did not confer additional benefits to them when compared to their counterpart who did not have an individual racial/ethnic match with their group therapist. It is possible that, for Black women who participated in this study, the individual racial/ethnic match with their group therapist was less important or irrelevant to the benefits they achieved from the groups. Historically, as a minority group in the U.S., Blacks have had to frequently experience and negotiate racial/ethnic differences in society; thus their competence in negotiating the mismatch between themselves and their therapist in a group treatment context may not have been a unique experience and, consequently, had less impact on their PTSD outcomes.

For substance use outcomes, both Black and White patients who were light substance users at baseline benefited from the individual racial/ethnic match with their group therapist, which resulted in lower odds of heavy substance use posttreatment compared to their racially/ethnically mismatched counterparts. Although this finding only approached significance, it is consistent with Ricker et al. (1999) who found a significant association between racial/ethnic matching and positive treatment outcomes among college students.

Table 3 Unadjusted means and standard deviations for continuous measures of outcome by race/ethnicity and individual racial/ethnic match at baseline and follow-up (N = 224)

	Mean (SD) or %		t/χ^2	Mean (SD) or %		t/χ^2
	White No match (n = 63)	White Match (n = 60)		Black No match (n = 64)	Black Match (n = 37)	
Session attendance	7.71 (5.93)	7.90 (3.75)	$t = 0.29$, $p = 0.77$	7.75 (3.74)	6.03 (3.80)	$t = 2.22$, $p = 0.03$
CAPS						
Baseline	64.2 (20.3)	61.1 (24.4)	$t = 0.48$, $p = 0.64$	63.6 (17.4)	62.3 (17.4)	$t = 0.35$, $p = 0.73$
1 week after treatment	35.3 (27.0)	26.1 (17.7)	$t = 1.86$, $p = 0.07$	33.2 (24.5)	34.1 (25.0)	$t = -0.15$, $p = 0.84$
3 months	35.4 (26.8)	18.4 (16.4)	$t = 3.40$, $p < 0.01$	24.8 (22.4)	30.3 (21.2)	$t = -1.05$, $p = 0.30$
6 months	33.4 (29.5)	20.1 (24.1)	$t = 2.11$, $p = 0.04$	21.4 (23.4)	27.8 (24.5)	$t = -1.13$, $p = 0.26$
12 months	25.7 (18.4)	12.8 (21.0)	$t = 2.47$, $p = 0.02$	21.6 (23.4)	24.1 (25.8)	$t = -0.43$, $p = 0.67$
Days of substance use						
Baseline			$\chi^2(2) = 17.94$ $p < 0.001$			$\chi^2(2) = 7.93$ $p < 0.05$
Zero days	28.6	58.3		50.0	21.6	
1–12 days	36.5	35.0		21.9	32.4	
13–30 days	34.9	6.7		28.1	45.0	
1 week after treatment			$\chi^2(2) = 10.72$ $p = <0.01$			$\chi^2(2) = 5.32$ $p = 0.07$
Zero days	56.4	88.1		66.7	40.7	
1–12 days	38.5	11.9		21.6	44.4	
13–30 days	5.1	0.0		11.7	14.8	
3 months follow-up			$\chi^2(2) = 9.63$ $p < 0.01$			$\chi^2(2) = 5.78$ $p = 0.06$
Zero days	52.6	85.0		65.1	36.7	
1–12 days	29.0	10.0		20.9	40.0	
13–30 days	18.4	5.0		14.0	23.3	
6 months follow-up			$\chi^2(2) = 2.11$ $p = 0.35$			$\chi^2(2) = 2.71$ $p = 0.26$
Zero days	46.5	57.6		52.2	40.0	
1–12 days	32.6	33.3		28.2	46.7	
13–30 days	20.9	9.1		19.6	13.3	
12 months follow-up			$\chi^2(2) = 4.00$ $p = 0.14$			$\chi^2(2) = 5.87$ $p = 0.06$
Zero days	44.7	65.7		33.3	51.6	
1–12 days	25.5	20.0		28.9	35.5	
13–30 days	29.8	14.3		37.8	12.9	

Racial/ethnic matching may facilitate communication and understanding, enhance trust and rapport, and increase patients' ability to participate in and benefit from treatment. A counterintuitive finding was that among women who were abstinent at baseline (i.e., had zero days of use in the 30 days prior to baseline), an individual racial/ethnic match with their group therapist was associated with higher odds of substance use at follow-up compared with their counterparts who were not racially/ethnically matched.

Overall, these findings revealed the complexity of racial/ethnic matching between client and therapist and its impact, particularly within a group treatment context. While racial/ethnic matching may provide, in some circumstances, a context that facilitates understanding, enhances trust, and strengthens the alliance; under other conditions, racial/ethnic matching may not confer additional benefits or may be negatively associated with post-treatment outcomes (as in the case of the participants who were not using substances at baseline). The assumption is that a racial/ethnic match equals similarity and thus a psychological benefit. However, client-therapist dyads that are racially/ethnically matched may be quite dissimilar in

other ways that may impact treatment outcomes. For example, racially/ethnically matched clients and therapists may be from different socioeconomic backgrounds, have different religious beliefs, or hold different assumptions/attitudes about the treatment process, which may reduce the presumed positive impact of racial/ethnic match on treatment outcomes (see Cabral and Smith 2011 and Zane et al. 2005 for further discussion on these points). Nevertheless, these findings highlight the need for further examinations into individual and subgroup differences in the benefits of racial/ethnic matching.

Limitations

Several limitations should be noted. The women in this study were polysubstance users. Thus the generalizability of our findings is limited to female polysubstance users in group therapy for PTSD and SUD, which may differ significantly for women with single substance misuse in individual therapy. Given this was a secondary analysis, additional measures were not available for fine-grained analyses of variables such as racial identity development. Patients in different stages of racial/ethnic identity development may place more or less importance on the race/ethnicity of their therapist (Helms and Carter 1991). Examination of within group variables such as racial/ethnic identity may allow for a more nuanced exploration of the relationship between race/ethnicity and psychotherapy process and outcome (Karlsson 2005). Notably, at study entrance, a subgroup of participants were prescribed psychotropic medications and all participants continued to receive standard services from their treatment program. Thus it is possible that the patients' relationship with their usual-care therapists and their use of medications may have also played a role in predicting clinical outcomes. Further, it is unknown whether the group therapist may also have been an individual therapist for some of the participants.

Despite methodological limitations, our study represents the first multi-site, randomized, controlled clinical trial that examined the influence of race/ethnic match on session attendance and treatment outcomes and provides preliminary information on the role of race/ethnicity in PTSD and SUD group treatment process and outcome.

Implications

Due to demographic differences between therapists and patients, issues with scheduling and other pragmatic concerns, programs that treat women with trauma and addictions are typically unable to match patients and therapists on the basis of race or ethnicity. The results of this study indicate, however, that the common racial/ethnic mismatch between patients and therapists does not have to be a significant barrier to treatment engagement and session attendance. Moreover, it suggests that other types of treatment modifications or strategies are necessary to further enhance treatment retention.

On the other hand, for White patients with high levels of pre-treatment PTSD symptom severity, and overall for women with low rates of substance use, our findings suggest that racial/ethnic match at the individual level may influence treatment outcomes and confer additional benefits. Under such circumstances, therapist initiated discussions related to the role of race/ethnicity in the group therapy process, may help to mitigate any negative consequences of racial/ethnic differences. These discussions can occur during the intake session with patients or during pre-group attendance orientation sessions. Studies indicate that patients in cross-racial dyads tend to perceive these discussions positively and report greater satisfaction with therapists who show an understanding of issues related to race (Chang and Berk 2009; Chang and Yoon 2011; Knox et al. 2003). Moreover, these discussions may enhance perceptions of therapist credibility, particularly during the early phase of treatment, when concerns related to racial/ethnic differences may prompt a client to terminate treatment (Knox et al. 2003).

Overall, our findings call for future studies to examine how patients and therapists experience racial/ethnic differences in the therapeutic relationship in general, and in PTSD/SUD group treatment context in particular. Moreover, there is continued need for advancement in our understanding of what makes therapists "culturally competent" and how cultural considerations may be integrated into empirically supported group treatments.

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