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Preliminary Findings on the Association Between Clients' Perceived Helpfulness of Substance Abuse Treatment and Outcomes: Does Race Matter?

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Abstract

BACKGROUND—Few studies examine the helpfulness and effectiveness of substance abuse treatment from the clients' perspective.

METHODS—The current secondary analysis examined the perceived helpfulness of substance abuse treatment components and its relationship to treatment outcomes among 387 Black and White adults participating in a multisite randomized clinical trial (RCT) of Motivational Enhancement Therapy. Throughout the 16-week RCT, participants self-reported substance use. Upon completion of treatment, participants completed a self-report measure assessing the perceived helpfulness of treatment components.

RESULTS—Black participants rated 9 out of 12 treatment components (e.g., “learning skills that will help me cope with my problems”) as being more helpful than their White counterparts, even after controlling for age, gender, employment status, primary drug type, and treatment assignment. However, perceived helpfulness ratings were not associated with substance use outcomes among Black or White participants.

CONCLUSIONS—Clients' perceived helpfulness of treatment components is an important factor to consider in improving the delivery of substance abuse treatment, especially for Black adults.

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Contributors

Dr. Montgomery undertook the statistical analysis and wrote the first draft of the manuscript. Blair Sanning made a substantial contribution to the writing of the manuscript. Nicole Litvak made a substantial contribution to the writing of the manuscript. Dr. Peters edited drafts of the manuscript and provided comments on the statistical analysis. All authors have contributed to and have approved the final manuscript.

Conflict of Interest

All authors declare that they have no conflicts of interest.

Keywords

perceived helpfulness; substance abuse treatment; race

1. INTRODUCTION

Although several studies support the link between client attitudes and behavioral outcomes in non-substance-related domains, such as anxiety (Smith et al., 2012), depression (Gershefski et al., 1996) and personality disorders (Johansson et al., 2011), clients' perceptions of substance abuse treatment and their relationships with treatment outcomes have received scant empirical attention. The dearth of literature in this area is striking given that an understanding of client perspectives on treatment has been widely recognized as a critical key to improving health care (Institute of Medicine, 2006; Urbanoski, 2010). In addition to gaining a more robust understanding of clients' attitudes regarding treatment and its relationship to treatment outcomes, there is a need for a better understanding of how the perceptions of substance abuse treatment experiences may differ for certain subgroups of clients, such as Black and White adults. This secondary analysis was designed to address these gaps by not only examining the relationship between the clients' perceived helpfulness of substance abuse treatment components and treatment outcomes, but determining if the relationship varies by race in the United States (US).

1.1 Perceptions of Substance Abuse Treatment

Although research on the link between clients' perception of treatment and treatment outcomes (e.g., substance use and retention) is scarce, some studies have focused on describing clients' perceived helpfulness of substance abuse treatment (e.g., Deering et al., 2011; Gogel et al., 2011; Gordon et al., 2011; Joosten De-Weert, et al., 2011; Lovejoy et al., 1995; Merrick et al., 2012; Palmer et al., 2009; Reisinger et al., 2009; Tuchman and Sarasohn, 2011; Vederhus et al., 2011; Winstock et al., 2011). For example, among clients participating in either an inpatient substance abuse treatment facility or an outpatient opioid maintenance treatment clinic in a Western European country, Nordfjaern et al. (2010) found that patients rated therapeutic alliance and mutual influences among patients (i.e., positive and reinforcing interpersonal relationships with other patients in substance abuse treatment) as helpful components of treatment. The clients also reported that frequent staff turnover negatively influenced their perceptions of treatment. Other studies have also assessed the helpfulness of specific aspects of substance abuse treatment, such as physical activity (Abrantes et al., 2011), cultural responsiveness (Vandeveldt et al., 2003) and medication components (Gryczynski et al., 2013; Kelly et al., 2012). However, these studies did not focus on the relationship between perceived helpfulness of substance abuse treatment and treatment outcomes.

1.2 Relationship between Perceptions of Substance Abuse Treatment and Treatment Outcomes

This relationship was first examined in the National Institute on Drug Abuse Collaborative Cocaine Treatment Study (NIDA CCTS; Siqueland et al., 2004). Findings from the NIDA

CCTS revealed that treatment helpfulness ratings were positively associated with retention and therapeutic alliance, but were not associated with changes in drug use or psychiatric outcomes. Another study (Lee et al., 2007) also examined the relationship between perceived helpfulness of treatment components and outcomes among adults participating in a brief intervention for alcohol. The authors found that higher client ratings of “I have obtained some new understanding” was a significant predictor of reduced total number of alcohol consequences (e.g., hangovers, missed days from school or work) at a 12-month follow up among participants who received the brief alcohol intervention and a booster session. Similarly, Zhiwei et al. (2008) found that a favorable evaluation of treatment near the time of discharge from clients participating in a methadone, outpatient, short-term residential or long-term residential program was positively related to drug use improvement outcomes during a 1 year follow-up. In another study of overall client satisfaction with treatment, Donovan et al. (2002) found that higher levels of client satisfaction with treatment were associated with higher levels of therapy attendance, greater reductions in drinking during therapy and better clinical status at the end of treatment in Project MATCH (i.e., a multisite clinical trial of alcohol treatment). These studies suggest a relationship between clients’ attitudes towards the treatment process and treatment outcomes.

Although these studies examined the relationship between clients’ perceived helpfulness of treatment and substance use outcomes, several gaps still exist in the literature. First, these studies are limited in number, thereby reducing the implications that can be drawn from this body of literature. Second, some studies do not support the relationship between client attitudes and treatment outcomes (e.g., Carlson and Gabriel, 2001; Gerstein and Harwood, 1990; McLellan and Hunkeler, 1998; Simpson, 2004). The inconsistent findings across existing studies highlight a need for more research to fully assess the aforementioned relationship. Third, to the authors’ knowledge, no studies have examined if the association between the clients’ perceived helpfulness of treatment and treatment outcomes varies by patient factors, such as race.

1.3 Racial Differences in Substance Abuse Treatment

Race may be one particular patient factor that may account for differences in the association between clients’ perceived helpfulness of treatment and treatment outcomes in the US. However, the lack of knowledge on racial differences in this area is alarming given the significant number of racial health disparities documented in the substance abuse treatment literature (e.g., Cooper et al., 2010; Cummings et al., 2011; Harris et al., 2012; Magruder et al., 2009; Montgomery et al., 2012; Shillington and Clapp, 2000). For example, Milligan et al. (2004) found that Black participants living in the United States completed significantly fewer days of treatment than their White counterparts. Further, Montgomery et al. (2011) found that Motivational Enhancement Therapy (MET) was not effective in reducing substance use in a predominately Black cocaine-using sample. However, in another study, substance use outcomes were favorable among a predominately White cocaine-using sample participating in MET (Stein et al., 2009). Different responses to treatment such as these suggest that clients’ perceptions of treatment might also vary by race.

1.4 Racial Differences in Perceptions of Treatment

Although no studies have directly examined racial variation in the relationship between perceived helpfulness of substance abuse treatment and treatment outcomes, a limited number of studies conducted on evidence-based substance abuse treatments, such as nicotine replacement therapy (NRT) for smoking cessation, have found racial differences in the perception of treatment. For example, Carpenter et al. (2011) found that Black smokers expressed concern about NRT safety and a strong suspicion of the pharmaceutical industry and government oversight, while White smokers expressed concerns about NRT safety only, and did so to a lesser degree than the Black and Hispanic smokers. The authors suggested that enduring misperceptions about NRT might partially contribute to the underutilization of NRT among racial minorities. Other studies have also noted varying perceptions of NRT among Black adults (Fu et al., 2007; Ryan et al., 2011; Yерger et al., 2008).

1.5 Current Study

The secondary analysis was designed to examine the relationship between perceived helpfulness of treatment components and substance use outcomes overall and specifically between Black and White adults in the US participating in MET and treatment as usual (TAU). This secondary analysis of a National Institute on Drug Abuse (NIDA) sponsored clinical trial was designed to answer two questions: First, do the perceived helpfulness ratings of substance abuse treatment components vary between Black and White adults? Based on existing literature with Black smokers (e.g., Fu et al., 2007; Ryan et al., 2011; Yерger et al., 2008), it was hypothesized that ratings of perceived helpfulness of substance abuse treatment components would vary between Black and White adults. Second, does the relationship between perceived helpfulness of treatment components and treatment outcomes vary between Black and White adults? Although there is no empirical evidence upon which to hypothesize the nature of the relationship between perceived helpfulness of treatment components and treatment outcomes, existing findings on racial differences in perceptions of substance abuse treatment, plus existing findings on racial differences in treatment outcomes, point to the logical next step of examining whether the relationship between perceived helpfulness of treatment and treatment outcomes also varies by race. Such an examination would address a critical need for a stronger understanding of client perceptions of substance abuse treatment and factors that contribute to positive substance abuse treatment outcomes. Moreover, results from such an examination may at least partially explain racial health disparities observed in substance abuse treatment.

2. METHOD

2.1 Participants

Participants included in these analyses were from the National Drug Abuse Treatment Clinical Trials Network (CTN) 0004 trial (N = 461) examining the effectiveness of MET in reducing substance use. Participants who self-identified as being only “Black, African American or Negro” (n = 194) or “White” (n = 193) on the demographic form were included in the present study. Individuals who self-identified as Hispanic American (10.6%) or other race (5.4%) were excluded from the analyses due to the small number of participants. The demographic information and the CONSORT diagram outlining eligibility, enrollment,

randomization, treatment and follow-up rates for the entire CTN 0004 sample (Ball et al., 2007) and for Black participants (Montgomery et al., 2011) are available elsewhere. The demographic information for Black and White participants in the current study is shown in Table 1. Individuals who: (1) were seeking outpatient treatment for any substance use disorder, (2) had used substances within 28 days prior to the study, (3) were 18 years of age or older, (4) were willing to participate in the protocol, and (5) were able to understand and provide written informed consent were eligible to participate in the trial. Individuals too medically or psychiatrically unstable to participate in outpatient treatment and/or individuals only seeking detoxification, methadone maintenance treatment or residential treatment were excluded.

2.1.1 Participating CTPs—The five participating community treatment programs (CTPs) provided outpatient treatment in a non-methadone maintenance setting. CTPs that (1) enrolled adequate numbers of new patients to meet the recruitment targets for the parent study (i.e., 100 participants per CTP, with approximately 50 participants per treatment group) and (2) had at least six clinicians willing to participate in the protocol were eligible to participate. CTPs from Connecticut, Pennsylvania, and California participated in this trial. Further details are provided elsewhere (Ball et al., 2007).

2.1.2 Participating clinicians—Clinicians who were (1) currently employed at the participating CTPs, (2) willing to utilize a manualized version of MET, (3) willing to accept an assignment to either MET or standard treatment, and (4) approved by the CTPs' administrative/supervisory staff as appropriate for the study were eligible to participate in CTN 0004. Clinicians with prior MI/MET training were ineligible. Further information on clinician eligibility criteria and training plans can be found in the CTN 0004 protocol (Carroll et al., 2001).

2.2 Measures

2.2.1 Substance Use Calendar (SUC)—The two outcome measures (i.e., total number of days of primary substance use during the 16 study weeks and total number of days of other substance use during the 16 study weeks) were assessed using the SUC. The SUC is a self-report substance use (marijuana, cocaine, alcohol, methamphetamine, benzodiazepines, opioids and other illicit substances) measure that asks participants to retrospectively report use on each day of the assessment period. Participants reported their primary and other substance use on a weekly basis during the 16 study weeks. The SUC is adapted from the Form-90 and Timeline Followback (TLFB), two widely used measures of substance use in calendar form (i.e., day to day). The Form-90 (Miller and DelBoca, 1994) and TLFB (Ehrman and Robbins, 1994; Fals-Stewart et al., 2000; Sobell and Sobell, 1992) have both demonstrated good reliability and validity in assessing substance use.

2.2.2. Posttreatment Attitudes and Expectation Questionnaires—The Posttreatment Attitudes and Expectations Questionnaire is a 36-item self-report questionnaire administered at the final treatment session of the 16-week treatment period to assess participant satisfaction with treatment. Participants were asked to rate their satisfaction with the treatment they received, their degree of change during treatment and

their perception of helpful or harmful aspects of the treatment they received. This form has been used successfully in Project MATCH and the Center for Substance Abuse Treatment multisite marijuana treatment trial (Donovan et al., 2002). The 12 items assessing perceived helpfulness of treatment components were: (1) “talking about things that happened to me when I was growing up”, (2) “learning skills that will help me cope with my problems”, (3) “learning how to deal with my family conflicts”, (4) “learning about the effects of drugs/ alcohol on my body and mind”, (5) “teaching my family about how to help me stop using”, (6) “going to Alcoholics Anonymous [AA], Cocaine Anonymous [CA], and/or Narcotics Anonymous [NA]”, (7) “monitoring of my drug use through urine testing”, (8) “learning skills on how to deal with situations that tempt me to use drugs/alcohol”, (9) “being able to call sober friends when I need help”, (10) “treatment for emotional problems like depression or anxiety”, (11) “just being in treatment”, and (12) “helping me get along better with the people who are important to me and improving my social life.” The lead-in statement for each of the 12 items was: “Now we would like to know what things you feel were most helpful to you in your treatment. Please indicate how helpful you believe each of the following was for you.” Each item was measured on a 7-point Likert-scale ranging from 0-6 (0 = did not happen in my treatment, 1 = slightly helpful, 2 = somewhat helpful, 3 = moderately helpful, 4 = helpful, 5 = very helpful, 6 = extremely helpful). Between 2 -21% of responses were coded as 0 on each of the 12 items.

2.2.3 Demographic and Substance Use Characteristics—At baseline, participants self-reported gender, marital status, age, employment status, race/ethnicity, treatment assignment, primary drug type, and whether or not they were mandated to treatment.

2.3 Procedures

The research team identified and referred potentially eligible individuals seeking outpatient substance abuse treatment at each of the participating five CTPs to a research assistant. Research assistants obtained written consent and collected baseline information from eligible and interested participants. Participants were then randomly assigned via urn randomization to receive TAU or MET. The variables used in the original study for urn randomization included gender, race, primary substance, referral type (mandated or voluntary) and employment status (Stout et al., 1994). After randomization, participants began either three MET sessions in the active phase and TAU in the follow up phase (i.e., 12 weeks following the active phase) or three TAU sessions in the active phase and additional TAU sessions in the follow up phase. Research assistants met weekly with participants during the four week active phase and 12 week follow up phase to collect information on substance use and treatment utilization.

2.3.1 Treatment as Usual (TAU)—Participants attended three sessions (45-55 minutes each) during the four week active phase as an adjunct to TAU. Clinicians “collected information on substance use and psychosocial functioning, explained treatment program requirements, discussed the participant's treatment goals, provided early case management and substance abuse counseling, encouraged attendance at 12-step meetings, promoted abstinence, and emphasized follow through with treatment at the clinic” (Ball et al., 2007, p. 559). All clinicians met monthly with a supervisor to review individual patient treatment

progress. Clinicians also submitted audiotaped sessions that were later rated by their supervisor and an independent tape rater for adherence and competence. Further details are available in Ball et al. (2007) and the CTN 0004 protocol (Carroll et al., 2001).

2.3.2 Motivational Enhancement Therapy (MET)—Participants in the MET condition attended three sessions (45-55 minutes each) during the four week active phase as an adjunct to TAU. Clinicians used a MET manual (Farentinos et al., 2000) developed for the CTN 0004 study. The manual describes “three carefully planned sessions, with the first session focused on reviewing an individualized Personal Feedback Report (i.e., summarizes objective and personal information on participant's substance use), and the other two focused on discussing plans for changing substance use” (Carroll et al., 2001, p. 12). The clinician's goal was to enhance the client's own motivation and commitment to change.

Further details on the demographics, training, supervision and certification of therapists in MET and TAU are provided elsewhere (Ball et al., 2007; Carroll et al., 2001). Independent ratings on adherence and competence rating scales indicated discriminability between MET and TAU in the expected directions, as described in the parent study (Ball et al., 2007).

2.4 Data Analysis Methods

Preliminary analyses included chi-square tests and *t*-tests to determine if baseline characteristics of Black and White adults in the study varied across racial groups. Cronbach alpha reliability coefficients were calculated on the 12 perceived helpfulness items for both Black and White participants, and a Feldt test was conducted to compare the two alpha reliabilities between Black and White individuals. Variables' skewness and kurtosis were examined. Two variables on the Posttreatment Attitudes and Expectations Questionnaire, “learning skills on how to deal with situations that tempt me to use drugs/alcohol” and “just being in treatment”, were positively skewed; thus, logarithmic transformations were performed on the two variables and used in subsequent statistical analyses.

To evaluate whether the perceived helpfulness ratings of substance abuse treatment components varies between Black and White adults, a multivariate analysis of variance (MANOVA) was first conducted, with race entered as a factor and the 12 posttreatment perceived helpfulness items entered simultaneously as dependent variables. To further understand the effect of race, over and above potentially confounding influences, on perceived helpfulness ratings of substance abuse treatment components, a multivariate analysis of covariance (MANCOVA) was then conducted, with race entered as a factor, the 12 posttreatment perceived helpfulness items entered simultaneously as dependent variables, and covariates of age, gender, employment status, primary drug and treatment group. Partial eta squared (η_p^2) was calculated to determine the proportion of the variance in the posttreatment items that is accounted for by race in the MANOVA and MANCOVA analyses.

To investigate whether the relationship between perceived helpfulness of treatment components and treatment outcomes varies by race, three steps were taken. First, partial correlation coefficients (controlling for age and employment status) assessed the relationship between the 12 post-treatment perceived helpfulness items and the substance use (i.e.,

number of days of primary substance use during the 16 study weeks) outcomes among all (i.e., both Black and White) participants. Second, separate partial correlation coefficients were conducted separately for Black and White adults. Third, Fisher's *r*-to-*z* transformations were performed to test for potential differences between correlations among Black and White adults.

To control for multiple comparisons, but allow for meaningful patterns to emerge from the data, significance level was set at .01 in each of the analyses. All analyses were performed via the Statistical Package for the Social Sciences (SPSS) Version 20.

3. RESULTS

3.1 Sample Characteristics

Demographic and substance use characteristics are shown in Table 1. No significant differences in demographic or substance use characteristics emerged between Black and White adults. Participants remained in treatment for an average of 78.53 ($SD = 37.11$) days out of 112 total days. The coefficient alpha for the Posttreatment Attitudes and Expectations Questionnaire was .891 for White participants and .890 for Black participants; a Feldt test did not reveal a significant difference between the two groups on these values (Wald = 0.99, $p = 0.48$).

3.2 Racial Variation in Perceived Helpfulness of Treatment Components

Results from the MANOVA and MANCOVA are shown in Table 2. MANOVA analyses revealed a significant main effect for race (Wilks' $\lambda = .862$, $F(12, 270) = 3.59$, $p < .01$, $\eta_p^2 = 0.14$) in the model. As shown in Table 2, race accounted for 3-10% of the variance in each of the items. Black participants reported significantly higher helpfulness ratings than their White counterparts on 9 of the 12 posttreatment items (i.e., "talking about things that happened to me when I was growing up", "learning skills that will help me cope with my problems", "learning how to deal with family conflicts", "learning more about the effects of drug/alcohol on my body/mind", "teaching my family about how to help me stop using", monitoring of my drug use through urine testing", "learning skills on how to deal with situations that tempt me to use drugs/alcohol", "just being in treatment" and "helping me get along better with the people who are important to me and improving my social life").

After controlling for age, gender, employment status, primary drug type and treatment group in MANCOVA analyses, analyses revealed a significant main effect for race (Wilks' $\lambda = .866$, $F(12, 265) = 3.43$, $p < .01$, $\eta_p^2 = 0.13$) in the model. As shown in Table 2, race accounted for 3-9% of the variance in each of the items. Black individuals reported significantly higher helpfulness ratings than White participants on the same 9 treatment components listed in the MANOVA results above. MANCOVA analyses also revealed a significant main effect for age (Wilks' $\lambda = .814$, $F(12, 261) = 4.97$, $p < .01$, $\eta_p^2 = 0.19$) and employment status (Wilks' $\lambda = .902$, $F(12, 261) = 2.36$, $p < .01$, $\eta_p^2 = 0.10$), but no significant main effects for gender, primary drug, or treatment group. Age and employment status were controlled for in subsequent analyses.

3.3 Racial Variation in the Relationship of Perceived Helpfulness of Treatment Components and Treatment Outcomes

Partial correlation coefficients (controlling for age and employment status) did not reveal any significant relationships between perceived helpfulness items and substance use outcomes for the overall sample. Therefore, no significant associations were found in the partial correlation coefficient analyses conducted separately for Black and White participants, as shown in Table 3. The Fisher's *r*-to-*z* transformations were also non-significant.

4. DISCUSSION

Client perspectives on the effectiveness of substance abuse treatment and its relationship to treatment outcomes are often overlooked in the literature. This secondary analysis was designed to address this gap by examining, first, the relationship between clients' perceived helpfulness of treatment components and treatment outcomes and, second, racial variation in this relationship among individuals living in the United States. Findings revealed racial variation in the perceived helpfulness of most treatment components, even after controlling for other demographic factors (e.g., age). However, perceived helpfulness ratings were not associated with substance use outcomes among Black or White participants.

Black adults endorsed higher perceived helpfulness ratings than their White counterparts on all treatment components, with the exception of equally helpful ratings among both racial groups on “treatment for emotional problems like depression or anxiety”, “going to AA, NA and/or CA” and “being able to call sober friends when I need help.” Overall, findings suggest that Black adults perceive treatments that focus on teaching new coping skills and information about the intersection between drug use and interpersonal relationships as more helpful than their White counterparts. The findings corroborate previous findings, which suggest that racial/ethnic minorities tend to find services from any mental health service providers and generalist providers as more helpful than non-racial/ethnic minorities (Jackson et al., 2007; Redmond et al., 2009). Further, many of the components (e.g., learning new information and skills) that Black adults rated as most helpful in this study have been found to be effective among other samples of Black adults in substance abuse treatment. For example, Ahluwalia et al. (2006) found that Black light smokers receiving 2 mg nicotine gum plus health education (i.e., directive information and advice-oriented counseling on smoking cessation) reported higher seven-day quit rates than those receiving 2 mg nicotine gum plus motivational interviewing.

Even after controlling for age, gender, primary drug type, employment status and treatment group, race still explained 13% of the overall variance in the posttreatment item ratings as compared to 14% in the model that did not control for other baseline characteristics. This finding suggests that race is an important demographic characteristic to consider in substance abuse treatment preferences. Several studies have demonstrated the importance of considering racial differences in mental health treatment preferences (Cooper et al., 2003; Mulaney et al., 2011). For example, Jimenez et al., 2012 found that Black adults were more likely than their non-Latino White counterparts to report that they would seek spiritual advice to help them with a mental health problem. Although several studies support the

relationship between race/ethnicity and attitudes towards mental health treatment, a smaller number of studies examine the link between race/ethnicity and attitudes towards substance abuse treatment. Findings from the current study highlight the need for future research that examines substance abuse treatment experiences, especially among Black participants, to perhaps explain racial/ethnic health disparities observed in treatment outcomes (Cook and Alegria, 2011; Guerrero et al., 2013).

Although Black participants rated most of the treatment components as more helpful than their White counterparts, the ratings were not associated with decreased primary or other drug use during treatment among Black or White participants. This finding was unexpected given extant literature demonstrating a relationship between high perceived helpfulness ratings and positive substance abuse treatment outcomes (Lee et al., 2007; Zhiwei et al., 2008). There are some plausible explanations for this unexpected finding. First, it is possible that participants did not receive a high frequency of the component that was rated as helpful. Second, even if participants did receive a particular treatment component, participants may not have learned how to effectively implement the treatment component in their lives. The lack of sufficient exposure to helpful treatment components and/or the lack of understanding about how to enact treatment components outside of treatment might partially explain why the perceived helpfulness of the component did not translate into decreased substance use. Future studies should examine both the frequency and skill in which the treatment components are delivered, as these factors might contribute to changes in outcome (Miller et al., 2006; Waltz et al., 1993).

Third, patient factors besides race might also influence, or might interact with race to influence, the relationship between perceived helpfulness of treatment and outcomes. Age and employment status may be two such examples of patient factors, as they accounted for 19% and 10% of the variance in posttreatment item ratings, respectively, in the current study and have been found to influence treatment attitudes in the mental health treatment literature (Gonzalez et al., 2011). Other factors, such as therapeutic alliance (Bachelor, 2013), should also be examined when assessing the relationship between perceived helpfulness of treatment and substance use outcomes. Fourth, the authors of the parent study (Ball et al., 2007) found site differences in substance use outcomes. For example, four sites showed decreased substance use during the first four weeks of the study, while one site showed less change. It is plausible that perceived helpfulness ratings may have varied across the five treatment sites in this study and may have influenced substance use outcomes differently.

This study has several strengths. First, this is among one of the few studies to examine clients' perceived helpfulness of substance abuse treatment and its relationship to treatment outcomes. Second, this is the first study to examine racial variation in the aforementioned relationship. Third, this study used data from a high-quality multi-site RCT of diverse substance users. Fourth, this study aligns with two National Institutes of Health (NIH) initiatives, including the NIH Guidelines on the Inclusion of Women and Minorities (NIH, 2001) and the Strategic Plan on Health Disparities Research of the National Institute on Drug Abuse (NIDA; NIDA, 2004), which require both the inclusion of racial/ethnic minorities in clinical trials and valid analyses to detect intervention effects among racial/ethnic minorities.

Although this study has several strengths, a few limitations are noteworthy. First, the effect sizes for the statistically significant differences between Blacks and Whites on the perceived helpfulness items were small to medium, which may have been partly due to the small sample size. In addition, the current study was a secondary analysis of existing data that was not specifically designed to answer the research questions raised in this study. Future research should include studies that are sufficiently powered to examine racial differences in the relationship between perceived helpfulness of treatment and treatment outcomes.

Second, the single-item measure of perceived treatment helpfulness might not have captured the multi-dimensional nature of attitudes towards treatment. For example, an individual might have identified self-help groups as being extremely helpful, but may have attended few groups due to transportation issues. A potential consequence is that he/she may have displayed poor treatment outcomes because he/she did not attend groups often enough to receive substantial benefit. In this case, the single Likert-scale item does not assess how often the individual was able to engage in or benefit from the treatment components. Future studies should use a multidimensional measure of attitudes rather than a single-item measure of treatment attitudes to capture the complexity of this construct. Other limitations of the parent study design are noted elsewhere (Ball et al., 2007). Despite these limitations, the current findings have valuable clinical and research implications for Black and White adults in substance abuse treatment.

Implications/Future Research

First, findings from this study suggest that the perceived helpfulness of substance abuse treatment components varies by race. Blacks adults rated most of the treatment components as more helpful than their White counterparts. This finding corroborates existing research (e.g., Alegria et al., 2007) and suggests that clinicians and researchers should consider the influence of race when discussing or analyzing clients' perceived helpfulness of treatment. The higher perceived helpfulness ratings among Black adults reported here counters existing research highlighting Blacks' negative perception of behavioral treatments (e.g., Thompson et al., 2004, 2009). As shown in this study, other variables (e.g., age and employment status) might influence how Black individuals perceive treatment. Future research should continue to examine the influence of demographic or other patient factors on perceived helpfulness treatment ratings among Black adults to elucidate the factors that are related to favorable treatment components among this population. Further, future studies should assess if perceived helpfulness impacts more proximal outcomes, such as enhanced motivation to change (DiClemente et al., 2004) or increased self-efficacy (Kadden and Litt, 2011), which have been shown to influence substance use outcomes.

Second, although treatment outcomes were not related to perceived helpfulness among Black or White adults in this study, findings still revealed higher ratings of specific treatment components among Black adults. Future studies should focus on the important components endorsed by Black adults (e.g., learning how to deal with family conflicts) and determine if they translate into decreased substance use in other subgroups of the Black population. Future research should also examine how baseline characteristics, such as severity of drug use (Montgomery et al., under review; Petry et al., 2012) and prior

engagement in treatment (Cacciola et al., 2009), might influence the potential benefits that Black adults report receiving from treatment. This type of research might help to at least partially explain and address racial health disparities observed in substance abuse treatment.

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Table 1

Demographic Characteristics of Black and White Participants in Clinical Trials Network 0004 Study

Characteristics (%)	Black (N = 194)	White (N = 193)	Total (N = 387)
Men	75.3	66.3	70.8
Women	24.7	33.7	29.2
Marital Status (married)	16.0	13.5	14.7
Employed	41.2	48.7	45.0
Mandated to Treatment (yes)	27.3	26.4	26.9
Treatment Assignment			
MET	43.8	50.8	47.3
TAU	56.2	49.2	52.7
Primary Drug			
Cocaine	25.8	17.1	21.4
Alcohol	26.3	33.7	30.0
Marijuana	18.0	11.4	14.7
2 or More	24.2	24.2	13.2
Other	5.6	13.6	20.7
Age (years, M[SD])	37.52 (9.93)	33.41 (10.08)	35.47 (10.20)

*Please note that there no significant differences between Black and White individuals on any of the demographic variables displayed in the table above.

Posttreatment Ratings of Perceived Helpfulness of Substance Abuse Treatment Components for Black and White Adults

Table 2

Item	African American (N = 142)		Whites (N = 141)		Total (N = 283)			MANOVA Results			MANCOVA Results		
	M	SD	M	SD	M	SD	F	df	p	η_p^2	F	df	p
1	3.16	2.14	2.39	2.02	2.79	2.11	9.78	1	<.01	0.03	7.81	1	<.01
2	4.38	1.48	3.60	1.89	4.00	1.73	15.86	1	<.01	0.05	14.39	1	<.01
3	3.06	2.11	2.20	2.13	2.64	2.16	12.56	1	<.01	0.04	10.99	1	<.01
4	4.25	1.78	3.23	2.01	3.75	1.96	20.38	1	<.01	0.07	15.11	1	<.01
5	2.38	2.25	1.59	2.00	1.99	2.17	10.35	1	<.01	0.04	10.95	1	<.01
6	3.72	2.45	3.12	2.42	3.42	2.45	5.50	1	0.02	0.02	1.43	1	0.23
7	4.41	1.50	3.38	1.69	3.91	1.67	30.01	1	<.01	0.10	25.97	1	<.01
8	4.61	1.51	3.83	1.78	4.23	1.69	16.33	1	<.01	0.06	15.41	1	<.01
9	3.48	2.44	2.85	2.32	3.17	2.40	5.49	1	0.02	0.02	2.68	1	0.10
10	2.09	2.32	1.88	2.19	1.99	2.26	1.01	1	0.32	0.00	0.18	1	0.67
11	4.88	1.31	4.31	1.58	4.60	1.47	12.01	1	<.01	0.04	8.15	1	<.01
12	3.93	1.94	3.20	2.05	3.58	2.03	9.56	1	<.01	0.03	5.40	1	<.01

Note. 1. Item Descriptions: 1 = "talking about things that happened to me when I was growing up"; 2 = "learning skills that will help me cope with my problems"; 3 = "learning how to deal with my family conflicts"; 4 = "learning about the effects of drugs/alcohol on my body and mind"; 5 = "teaching my family about how to help me stop using"; 6 = "going to Alcoholics Anonymous [AA], Cocaine Anonymous [CA], and/or Narcotics Anonymous [NA]"; 7 = "monitoring of my drug use through urine testing"; 8 = "learning skills on how to deal with situations that tempt me to use drugs/alcohol"; 9 = "being able to call sober friends when I need help"; 10 = "treatment for emotional problems like depression or anxiety"; 11 = "just being in treatment"; 12 = "helping me get along better with the people who are important to me and improving my social life."

2. Likert scale for items: 0 = did not happen in my treatment, 1 = slightly helpful, 2 = somewhat helpful, 3 = moderately helpful, 4 = helpful, 5 = very helpful, 6 = extremely helpful.

3. MANCOVA results reported in this table control for age, gender, employment status, primary drug type and treatment assignment.

Table 3

Partial Correlations Between Perceived Helpfulness of Treatment and Substance Use and Retention Outcomes by Race

Item	Days of Primary Drug Use			Days of Other Drug Use		
	African American	White	z	African American	White	z
1	-0.14	0.02	-1.34	-0.04	-0.08	0.33
2	0.07	-0.09	1.33	0.06	-0.08	1.17
3	-0.02	-0.04	0.17	-0.04	-0.06	0.17
4	-0.06	0.04	-0.83	0.05	-0.05	0.83
5	0.04	-0.01	0.42	0.08	-0.01	0.75
6	-0.10	-0.09	0.67	-0.01	0.02	-0.25
7	-0.04	0.01	-0.42	0.01	0.02	-0.08
8	-0.06	-0.05	-0.08	-0.03	-0.09	0.50
9	-0.01	-0.14	1.09	0.09	-0.15	2.01
10	0.03	-0.03	0.50	0.02	0.01	0.08
11	-0.01	-0.10	0.75	-0.02	0.06	-0.67
12	-0.01	-0.05	0.33	0.06	-0.13	1.59

Note. 1. $p < .01$

2.Item Descriptions: 1 = “talking about things that happened to me when I was growing up”; 2 = “learning skills that will help me cope with my problems”; 3 = “learning how to deal with my family conflicts”; 4 = “learning about the effects of drugs/alcohol on my body and mind”; 5 = “teaching my family about how to help me stop using”; 6 = “going to Alcoholics Anonymous [AA], Cocaine Anonymous [CA], and/or Narcotics Anonymous [NA]”; 7 = “monitoring of my drug use through urine testing”; 8 = “learning skills on how to deal with situations that tempt me to use drugs/alcohol”; 9 = “being able to call sober friends when I need help”; 10 = “treatment for emotional problems like depression or anxiety”; 11= “just being in treatment”; 12 = “helping me get along better with the people who are important to me and improving my social life.”

3.Partial correlation coefficient analyses controlled for age and employment status.