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Mindfulness-based relapse prevention with racial and ethnic minority women

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Abstract

Racial and ethnic disparities in the treatment of addiction have been acknowledged for several years, yet little is known about which empirically supported treatments for substance use disorders are more or less effective in treating racial and ethnic minority clients. The current study was a secondary analysis of a randomized clinical trial of two evidence-based treatments, mindfulness-based relapse prevention (MBRP) and relapse prevention (RP), as part of a residential addiction treatment program for women referred by the criminal justice system ($n = 70$). At 15-week follow-up, regression analyses found that racial and ethnic minority women in MBRP, compared to non-Hispanic and racial and ethnic minority women in RP, reported significantly fewer drug use days ($d = .31$) and lower addiction severity ($d = .65$), based on the Addiction Severity Index. Although the small sample size is a limitation, the results suggest that MBRP may be more efficacious than traditional treatments for racial and ethnic minority women.

Keywords

Ethnicity; Race; Minority; Substance use disorders; Addiction; Mindfulness-based relapse prevention

1. Introduction

Racial and ethnic minorities experience more negative consequences from substance use than non-Hispanic whites, including higher rates of incarceration and death (Binswanger, Redmond, Steiner, & Hicks, 2012; Centers for Disease Control & Prevention, 2011). These health inequities are exacerbated by lower rates of substance use disorder (SUD) treatment seeking and completion (Chartier & Caetano, 2010; Guerrero et al., 2013) and delays in

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access (Gryczynski, Schwartz, Salkever, Mitchell, & Jaffe, 2011). While substance use rates differ between racial and ethnic groups (Chartier & Caetano, 2010), these groups share experiences of interpersonal and institutional racism that have been linked to higher rates of substance use and poorer health (Jones, 2000; Pascoe & Smart Richman, 2009).

Women with substance use disorders also have higher rates of medical and social consequences of SUDs than men and greater barriers to treatment (Greenfield et al., 2007). Some evidence suggests that women are more likely to drop out of treatment (McCaul, Svikis, & Moore, 2001), and that minority women have even greater dropout risk (Mammo & Weinbaum, 1993; Mertens & Weisner, 2000). Relatively little is known about effectiveness of empirically supported treatments, such as relapse prevention (RP; Carroll & Onken, 2005), with racial and ethnic minority populations, and even less so in minority women (Bernal & Scharró-del-Río, 2001). Our knowledge of empirically supported treatments is built largely on findings from non-Hispanic white male clients, calling into question their applicability for minority groups and women (Hall, 2001; Miranda et al., 2005).

Mindfulness-based therapies have emerged as an effective alternative to behavioral treatments (Ziegerska et al., 2009). These therapies focus on acceptance and awareness of moment-to-moment experience, without judgment. They have demonstrated efficacy in numerous areas, including prevention of substance use relapse (e.g., Mindfulness-Based Relapse Prevention [MBRP]; Bowen, Chawla, & Marlatt, 2010; Bowen et al., 2009; Witkiewitz, Marlatt, & Walker, 2005)

Some evidence suggests that mindfulness-based approaches may be particularly suited for minority clients and women. For example, elements of mindfulness may be important for Alaska Natives recovering from alcohol dependence (Mohatt et al., 2008), and have specific applicability in Asian American populations (Hall, Hong, Zane, & Meyer, 2011). Chen, Comerford, Shinnick, and Ziedonis (2010) found that females in a residential addiction treatment program had significantly greater reductions in anxiety and withdrawal symptoms than males in a qigong training, or females in stress management and relaxation training. Finally, mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1990) has been successfully adapted into SUD treatment for African American and Latina women (Vallejo & Amaro, 2009). These studies suggest that mindfulness-based therapies may be beneficial for racial and ethnic minority women in treatment for SUDs. The current study evaluated outcomes between non-Hispanic white and racial or ethnic minority women in a randomized clinical trial (RCT).

2. Methods

2.1. Participants

This study is a secondary analysis of an RCT of MBRP and RP for SUDs among adult women ($n = 105$) in a nonprofit residential treatment center for criminal offenders (Witkiewitz et al., in press). Participants were convicted on substance-related charges prior to treatment and given a choice between incarceration or treatment. At baseline, past-month substance use included methamphetamines (15%), alcohol (12%), heroin (11%), marijuana

(10%), crack cocaine (9%), and hallucinogens (2%). Over half (52%) reported no past-month substance use at baseline due to being in a controlled environment.

Participants were identified as non-Hispanic white (63.8%), African American (17.4%), Native American (13.0%), Asian (4.3%), and Hispanic (1.4%). We used a binary measure of non-Hispanic white (63.8%) and racial or ethnic minority (36.2%). Data on race or ethnicity were missing for 35 participants (31.8%) because records were not available or the participant refused to answer. Individuals with missing data on race/ethnicity were excluded, leaving a sample of 70 for analyses. Those missing data on race or ethnicity were not statistically different from those with missing data on any study measures.

Participants who completed the follow-up ($n = 54$, 51.4%) were not systematically different on any variables of interest from those who dropped out of treatment or were lost to follow-up ($n = 51$, 48.6%). Among the participants assigned to MBRP, non-Hispanic white participants were less likely to complete the follow-up (52.6% completed) than racial and ethnic minority participants assigned to MBRP (85.7% completed; $\chi^2(1) = 3.97$, $p = 0.046$). Missing data were prevalent for numerous reasons (e.g., no permanent phone or address).

2.2. Procedures

Inclusion criteria included English proficiency, willingness to be randomized, and ability to provide consent. A baseline assessment was administered during the final week of a 4-week stabilization and detoxification phase, before participants began active group treatment. The in-person or telephone follow-up assessment was scheduled approximately 15 weeks after MBRP or RP treatment ended (approximately six months after baseline assessment and after most women were discharged). Following baseline, participants were randomized to MBRP ($n = 55$) or RP ($n = 50$). Non-Hispanic white Master's level clinicians professionally trained in the treatments led the groups. Both groups met twice weekly for fifty-minute sessions over eight weeks.

The MBRP intervention was based on the MBRP manual (Bowen et al., 2010) and was adapted to a rolling group format. Primary objectives of MBRP were to help clients identify reactions to common triggers, recognize and cope skillfully with craving through acceptance, awareness, and non-judgment of experience, integrate mindfulness practices into daily life and high-risk situations, and identify the role of thoughts in the relapse process. Importantly, MBRP emphasized the clients' individual experiences in building coping skills.

The RP intervention was based on prior RP manuals (Daley & Marlatt, 2006; Monti, Kadden, Rohsenow, Cooney, & Abrams, 2002) and adapted to correspond with the amount of material and homework in the MBRP intervention. Primary objectives were to teach participants to identify high-risk situations for relapse and to build cognitive and behavioral coping skills for managing craving and high-risk situations. Participants were also taught general skills for problem-solving, goal-setting, drink refusal self-efficacy, social support, and maintaining a balanced lifestyle.

2.3. Measures

Race and ethnicity data were pulled from treatment records. Study outcomes were days of drug use and addiction severity. Drug use days were assessed using a 30-day timeline follow-back (TLFB; Sobell & Sobell, 1992) at each assessment. Addiction severity was assessed using the Addiction Severity Index (ASI; McLellan, Luborsky, Woody, & O'Brien, 1980) administered at baseline and follow-up. The ASI form (McLellan et al., 1980) was the 18-item self-report version assessing alcohol use, drug use, medical problems, psychiatric symptoms, family and social problems, and legal problems over the past 30 days. Data were analyzed with the total ASI score (including all symptoms) and subscale scores (i.e., medical problems, legal problems).

2.4. Statistical analyses

Statistical models were estimated with Mplus Version 7 (Muthén & Muthén, 2012). Generalized linear models were used to examine associations between race, treatment group, and the two outcomes: total days of drug use and ASI scores at the 15-week follow-up. For total days of drug use, which was a count, we used a negative binomial regression model with a log link function to estimate model parameters. For the ASI scores, we used a linear regression model. All analyses included race/ethnicity, treatment condition, a race/ethnicity-by-treatment interaction term, and baseline levels of outcome variables as covariates. Parameters were estimated using maximum likelihood estimation, which provides the estimated variance-covariance matrix for the available data, and therefore all available data were included in the models (Schafer & Graham, 2002).

3. Results

Descriptive information about the sample, by treatment group, is provided in Table 1. There were no significant differences between non-Hispanic whites and racial or ethnic minorities on any demographic measures.

Across race and ethnicity, individuals assigned to MBRP, as compared to those assigned to RP, had significantly fewer drug use days at follow-up ($B (SE) = -7.99 (2.53), p = 0.002$), after controlling for baseline use. In addition, racial and ethnic minorities had significantly fewer drug use days than non-Hispanic white participants ($B (SE) = 3.59, p = 0.03$), and there was a significant interaction between treatment and race/ethnicity in the prediction of drug use days at follow-up ($B (SE) = 5.70 (2.50), p = 0.02$). The interaction was such that none (0%) of the racial or ethnic minorities in the MBRP group used drugs across the follow-up, while 14.3% of racial or ethnic minorities in the RP group had drug use days. The effect size difference in drug use days for racial or ethnic minorities between treatment groups was small ($d = 0.31$).¹

Individuals assigned to MBRP also had significantly lower ASI scores ($B (SE) = -0.12 (0.04), p = 0.005$) than those assigned to RP, controlling for baseline ASI scores. There was

¹We also examined the association between treatment group, race/ethnicity, and the interaction in prediction of any drug use days. Results indicated a significant interaction effect in the prediction of any use ($\beta = 0.54; B (SE) = 0.44 (0.13), p = 0.001$; Odds Ratio = 1.55 (95% confidence interval: 1.16, 1.94)).

a significant interaction between race/ethnicity and treatment in the prediction of ASI scores ($B (SE) = 0.14 (0.06), p = 0.04$); racial and ethnic minority participants in MBRP had the lowest ASI scores, while racial and ethnic minority participants in RP had the highest ASI scores (Fig. 1), with a medium effect size difference in ASI scores for minorities between treatment groups ($d = 0.65$). An examination of the subscales of the ASI indicated a significant interaction effect for only the medical subscale ($B (SE) = 0.52 (0.14), p < 0.001$); racial and ethnic minorities in MBRP reported an 85% decrease in ASI medical problems from baseline to follow-up, while racial and ethnic minorities in RP reported a 40% increase.

4. Discussion

This study provides initial evidence suggesting that MBRP may have benefit over RP for racial or ethnic minority women in the active treatment phase of a residential SUD treatment program for criminal offenders. Racial or ethnic minority participants randomly assigned to MBRP reported no drug use days and significantly lower addiction severity at a 15-week follow-up, as compared to those assigned to RP.

The addictive severity effect was driven by lower rates of medical problems among racial and ethnic minority participants in MBRP. This effect was notable, considering that racial and ethnic minorities are at higher risk of preventable disease, death, and disability (Centers for Disease Control & Prevention, 2011). The emphasis on stress reduction in MBRP may lead to improvements in coping with medical issues. MBSR, on which MBRP was largely based, has also demonstrated efficacy in reducing medical symptoms in racial and ethnic minorities (Roth & Creaser, 1997).

Results also showed significantly better follow-up rates in racial and ethnic minority versus non-Hispanic white participants assigned to MBRP (85.7% versus 52.6%). This finding is particularly noteworthy given that racial and ethnic minorities are significantly less likely to complete treatment for SUDs (Guerrero et al., 2013), and could suggest greater acceptability of the treatment for minority clients.

The study was not powered to explore factors that might underlie the differences in outcomes between minorities and non-Hispanic whites. However, we have several hypotheses. The highly individualized and experiential focus of MBRP versus the more didactic format of RP encourages clients to use their own experiences to adapt coping skills, whereas RP teaches more universal coping strategies. This may increase the cultural relevance for racial and ethnic minorities (Hall et al., 2011; Mohatt et al., 2008). Additionally, MBRP was designed to engender an accepting, nonjudgmental stance, and self-compassionate approach, which may be particularly useful for racial and ethnic minorities who have experienced societal discrimination (Jones, 2000).

Numerous study limitations exist. Small sample size, high attrition rates, and lack of race and ethnicity data for some participants greatly limited power to detect effects of interest. Treating minority participants as one group versus assessing racial and ethnic subgroups also presents a serious limitation. Further, we were unable to look at outcomes by the intersection of race, ethnicity and gender simultaneously. Amaro et al. (2007) found differences in

substance abuse treatment outcomes among women from different racial and ethnic groups. Similarly, due to low levels of drug use, all drugs of abuse were combined into a single outcome measure, preventing assessment of differential effects of treatment for different substances. Finally, some women remained in a controlled environment (e.g., residential treatment, sober housing) during follow-up, which was not assessed or controlled for in the analyses. Future research with larger samples split by racial and ethnic subgroups should examine the efficacy of MBRP for minority clients and the specific mechanisms of action that may underlie salutary treatment effects in these individuals.

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Highlights

- Results from a trial of relapse prevention (RP) and mindfulness-based RP (MBRP)
- MBRP was more efficacious than RP for racial or ethnic minority female clients.
- At follow-up, minorities in MBRP had no drug use days and lower addiction severity.

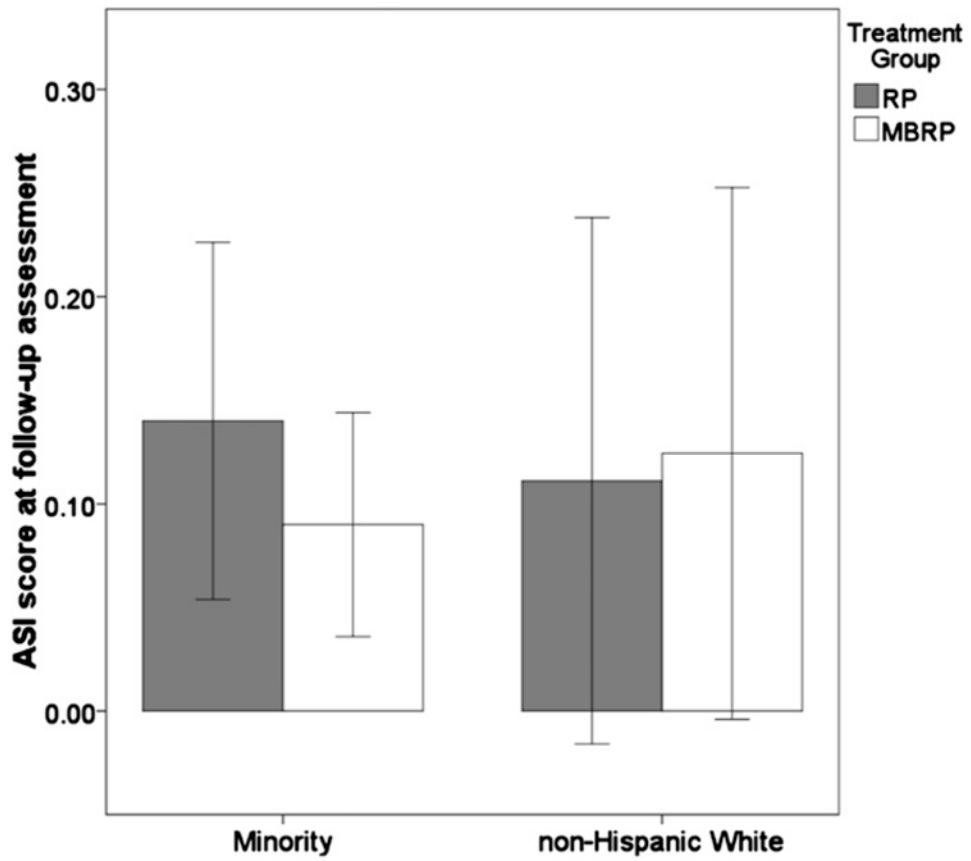


Fig. 1. Addiction Severity Index (ASI) total scores by racial or ethnic minority status and treatment group (relapse prevention (RP, dark gray) and mindfulness-based relapse prevention (MBRP; white).

Table 1

Descriptive Statistics, Mean (Standard Deviation) or N (%) for Study Variables.

Variable	RP	MBRP	Test-statistic	<i>d</i>
Non-Hispanic white	25 (51.0%)	19 (34.5%)	$\chi^2(5) = 4.58$	–
African American	5 (10.2%)	7 (12.7%)		
Native American	5 (10.2%)	4 (7.3%)		
Asian	1 (2.0%)	2 (3.6%)		
Hispanic or Latino/a	0 (0.0%)	1 (1.8%)		
Unknown, not specified	13 (26.5%)	22 (40.0%)		
Never married	21 (42.9%)	23 (41.8%)	$\chi^2(4) = 5.01$	–
Separated/divorced	8 (16.3%)	14 (25.5%)		
Married	3 (6.1%)	1 (1.8%)		
Widowed	2 (4.1%)	1 (1.8%)		
Unknown, not specified	15 (30.6%)	16 (29.1%)		
Unstable housing	34 (89.5%)	31 (83.8%)	$\chi^2(2) = 1.24$	–
Stable housing	4 (10.5%)	5 (13.5%)		
Unknown, not specified	0 (0%)	1 (2.7%)		
12+ years of school	13 (32.5%)	19 (44.2%)	$\chi^2(1) = 1.20$	–
Less than 12 years of school	27 (67.5%)	24 (55.8%)		
Age	32.4 (8.9)	35.8 (9.5)	$t(85) = -1.73$	0.36
Drug use days baseline (range 0–31)	1.9 (4.2)	1.8 (6.3)	$t(69) = 0.11$	0.01
ASI-total score baseline (ASI score range 0–1)	0.20 (0.12)	0.23 (0.13)	$t(52) = -0.80$	0.24
Drug use days follow-up (range 0–8)	0.50 (1.82)	0.04 (0.19)	$t(52) = 1.35$	0.36
ASI-total score follow-up (ASI score range 0–1)	0.13 (0.09)	0.11 (0.10)	$t(25) = 0.57$	0.21

Note. ASI = Addiction Severity Index.