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Predictive Utility of Alcohol Use Disorder Symptoms Across Race/Ethnicity

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ABSTRACT

Research has shown differences in alcohol use and problems across race/ethnicity. This study examines whether there are differential effects of alcohol use disorder (AUD) symptoms on drinking outcomes across race/ethnicity. Data from 1483 patients admitted to a hospital for treatment of an injury were utilized (19% Black, 45% non-Latino White, and 36% Latino). AUD symptoms and race/ethnicity reported at baseline and their interaction were the predictor variables. Drinking patterns and associated problems measured at the 6- and 12-month follow-up were the outcome variables of interest. Linear regression was the analytic method employed. Endorsement of "spending a great deal of time to obtain, use, or recover from effects of drinking," "craving," "failure to fulfill major role obligations," and "alcohol use in physically hazardous situations" at baseline was associated with greater levels of subsequent alcohol use and alcohol-related problems at both 6- and 12-month follow-ups, regardless of race/ethnicity. Endorsement of "important social, occupational, or recreational activities given up because of drinking" was differentially associated with greater alcohol-related problems at both 6- and 12-month follow-ups dependent on race/ethnicity. Follow-up analyses indicated that this symptom was a significant predictor of alcohol problems among Latino and Black participants, but not non-Latino White participants. Brief interventions targeting these AUD symptoms could increase the effectiveness of brief motivational interventions among different racial/ethnic groups.

1. Introduction

Alcohol consumption differs across racial/ethnic groups. While White individuals are more likely to receive a diagnosis of alcohol dependence in their lifetime (Hasin, Stinson, Ogburn, & Grant, 2007), specific racial/ethnic minority groups are more likely to present with alcohol use disorder (AUD) diagnoses. For example, compared to other racial/ethnic groups, Latinos have a higher prevalence of heavy drinking (Chartier & Caetano, 2010), defined as five or more standard drinks per day for men and four or more drinks per day for women (National Institute on Alcohol Abuse and Alcoholism, 2005). When compared to White women, Black women are more likely to report heavy drinking episodes (Blazer & Wo, 2009), and Black and Latina women are at greater risk for abuse and dependence (Grant et al., 2012). When compared with non-Latino White men, Latino and Black men report higher percentage of abstention from alcohol (Galvan & Caetano, 2003); however, among those who do drink, Latino and Black men report higher frequency of heavy drinking and higher number of drinks consumed by month than White men (Galvan & Caetano, 2003). While White persons are more likely to receive a diagnosis of alcohol dependence in their lifetime (Hasin et al., 2007), Latino and Black individuals are more likely to experience recurrent or persistent alcohol dependence (Dawson et al., 2005; Grant et al., 2012). Among individuals with AUD, Latinos experience more severe alcohol problems compared to White and Black persons (Schmidt, Ye, Greenfield, & Bond, 2007). Additionally, Black and Latino individuals are at higher risk of developing alcohol-related health problems and suffer more social/interpersonal problems associated with alcohol consumption when compared to White persons (Chartier & Caetano, 2010; Hilton, 2006; Mulia, Ye, Greenfield, & Zemore, 2009). For example, Latinos have higher rates of driving under the influence (DUI; Galvan & Caetano, 2003) and ever being arrested for DUI (Caetano & Clark, 2000; Caetano & McGrath, 2005). Despite this, racial/ethnic minorities with AUD are less likely to utilize formal alcohol treatment services compared to Whites with AUD (Chartier & Caetano, 2011; Schmidt et al., 2007).

The American College of Surgeons requires Level 1 trauma centers to provide brief intervention to all injured patients identified with alcohol problems (American College of Surgeons, 1993). Brief interventions in medical settings reduce typical drinks per week and maximum drinks per occasion (Bernstein, Boudreaux, & Aseltine, 2010); more importantly, brief interventions also reduce deaths and non-fatal injuries (Dinh-Zarr, Goss, Heitman, Roberts, & DiGuiseppi, 2004). Since potential racial/ethnic differences in benefits of brief interventions were not previously known, we conducted the first randomized clinical trial that was sufficiently powered to determine the differential effect of brief intervention across race/ethnicity among injured patients in a Level 1 urban trauma center (Field, Caetano, Harris, Frankowski, & Roudsari, 2010). We found that Latino patients were more likely to benefit from

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a brief intervention than non-Latino patients, regardless of the severity of alcohol problems. Specifically, Latino patients were more likely to reduce their average amount of alcohol consumed per week compared to White and Black patients at 12 months post-intervention and were more likely to reduce percentage days of heavy drinking than Whites and Blacks at 6 and 12 months post-intervention (Field et al., 2010).

In a follow-up to that study (Field & Caetano, 2010), we found that, regardless of race/ethnicity, patients with alcohol dependence were more likely to benefit from a brief intervention. These patients reduced the average drinks per week at 6 and 12 months post-intervention and reduced the maximum amount of drinks consumed in one day by more than twice the amount reported by non-dependent patients at 6 months post-intervention. Patients with alcohol dependence also reported a decrease in the occurrence of alcohol related problems at 12 months post-intervention. In addition, patients with alcohol dependence at baseline were less likely to meet criteria for this diagnosis at six months post-intervention (Field & Caetano, 2010).

In the original study, the benefits of brief intervention among Latinos were independent of the severity of alcohol problems (Field et al., 2010). Likewise, the benefits of brief motivational interventions among patients with alcohol dependence were independent of race/ethnicity (Field & Caetano, 2010). However, the potential interaction between race/ethnicity and alcohol dependence on drinking outcomes was not fully examined. Under DSM-IV, the diagnostic criteria for abuse and dependence were distinct (American Psychiatric Association, 1994). Under DSM-5, anyone meeting any two of the 11 criteria during the same 12-month period may receive a diagnosis of AUD (American Psychiatric Association, 2013). As such, any single symptom has equal influence on a diagnosis of AUD, making it extremely practical to examine the influence of AUD symptoms individually. Therefore, understanding the interaction between race/ethnicity and symptoms of alcohol dependence may further elucidate our prior findings and increase our understanding of how to improve brief interventions or, if necessary, culturally tailor interventions. Specifically, understanding their interaction may bring to light the differential importance of specific symptoms of AUD on alcohol outcomes for a particular racial/ethnic group. Such findings could potentially inform tailoring or adaptation of brief alcohol interventions. Some previous research has examined the predictive utility of DSM-IV alcohol use disorder symptoms on later alcohol use disorder diagnosis and alcohol use problems, (De Bruijn, Van Den Brink, De Graaf, & Vollebergh, 2005; Schuckit, Smith, & Landi, 2000; Schuckit et al., 2001; Schuckit et al., 2005). However, no published study to our knowledge has examined whether the predictive utility of AUD symptoms differ by race/ethnicity.

Herein, we studied the potential interaction of DSM-5 AUD symptoms on drinking outcomes by race/ethnicity. We examined differences across racial/ethnic groups in symptoms of AUD, drinking patterns, and alcohol problems. In addition, we examined AUD symptoms measured at baseline, race/ethnicity, and their interaction, as predictors of alcohol use patterns and alcohol related problems at 6- and 12-month follow-up. We hypothesized that at least some symptoms of AUD measured at baseline would differentially predict drinking patterns and alcohol related problems at 6- and 12-month follow-up by race/ethnicity at 6- and 12-month follow-ups.

2. Material and methods

2.1. Participants

This study employed data from the baseline, 6-month follow-up, and 12-month follow-up assessments of a randomized clinical trial examining the efficacy of brief motivational intervention (BMI) against treatment as usual (TAU; Field et al., 2010). The sample included male and female injured patients who self-identified as Black, non-Latino White, or Latino. Patients who did not self-identify with any of these racial/ethnic groups were not screened. Injury was defined as an intentional or unintentional event caused by an external factor, even if a medical condition was a factor. Patients were included in this study if they (1) were at least 18 years of age, (2) spoke English or Spanish, (3) had an identifiable residence, (4) were not under arrest or in police custody at the time of admission or during their hospital stay, (5) were judged by the trauma care or research staff to not be actively suicidal or psychotic, (6) were not victims of sexual assault, and (7) had no medical condition that precluded a face-to-face interview. Patients who were intoxicated at the time of their injury or presented with a Glasgow Coma Scale (GCS) ≤ 14 were monitored by research staff for inclusion in the study. Subjects with a GSC ≤ 14 that did not resolve prior to discharge were not eligible for screening or enrollment. To participate in the study individuals had to demonstrate orientation to person, place, and time. The total sample in this study was 1483 patients.

2.2. Procedures

Patients who presented in a level 1 trauma center or the emergency department with an alcohol-related injury were screened for eligibility. They were approached in person by study clinicians while receiving medical care in these settings. Full study procedures have been reported in the original RCT and screening model (Field, Caetano, & Pezzia, 2009; Field et al., 2010). Screening for alcohol problems included (1) clinical indication of acute intoxication, or alcohol use, or positive blood alcohol concentration (BAC); (2) self-reported drinking 6 h prior to injury; (3) at-risk drinking (women: four or more drinks in women per day and 7 or more drinks per week; men: five or more drinks per day and 14 or more drinks per week) per the National Institute on Alcohol Abuse and Alcoholism (2005) guidelines; or (4) positive on one or more items of the instrument "**Cutting** down, **Annoyance** by criticism, **Guilty** feeling, and **Eye**-openers" (CAGE; Ewing, 1984; Kitchens, 1994). A sequential screening, including four steps, was designed to minimize the impact on medical care (Field et al., 2009). For example, if patients screened positive on the first criteria subsequent criteria were not assessed. During the time that the RCT was implemented, 9860 injury admissions were processed; from them, 6390 (65%) patients were eligible; 5742 were screened; and 2368 had a positive screen in one of the four criteria mentioned above and consequently were invited to participate in the study. Once eligible patients screened positive, they were recruited between Thursday and Monday from 9 am to 6 pm, over a 2-year period. A total of 875 patients screened and deemed eligible did not participate in the study because of discharge prior to consent, declined to participate, or had an incomplete survey.

Research staff obtained written informed consent from eligible patients who screened positive and agreed to participate in the study. Research staff collected data via an in-person, 30–40-min interview at baseline, and via telephone interview at the 6- and 12-month follow-up time points. Forty-seven percent of the Latino participants were interviewed in Spanish by bilingual staff. Participants were compensated for their time and effort at $25 for the baseline interview and $50 for each of the two follow-ups. Retention rates were 74.5% in BMI at 6-month follow-up and 62.5% at 12-month follow-up. For detailed study procedures see the original RCT and screening model (Field et al., 2009; Field et al., 2010).

2.3. Measures

2.3.1. Participant characteristics

Participant characteristics collected at baseline included age (18–24, 25–34, 35–44, and 45 +), gender (male/female), employment status (working part-time/working full-time/not working), marital status (single or never married; married or living with partner; separated, divorced or widowed), education (more than high school, high school diploma, some high school), type of injury (unintentional/intentional), and injury severity (moderate or severe). All of these characteristics were included as covariates in the analysis to observe the main effects