HHS Public Access

Author manuscript

J Subst Abuse Treat. Author manuscript; available in PMC 2019 May 06.

Published in final edited form as:

J Subst Abuse Treat. 2017 February ; 73: 27–34. doi:10.1016/j.jsat.2016.11.001.

Racial/ethnic Differences in Initiation of and Engagement with Addictions Treatment among Patients with Alcohol Use Disorders in the Veterans Health Administration

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Abstract

Objective.—Specialty addictions treatment can improve outcomes for patients with alcohol use disorders (AUD). Thus, initiation of and engagement with specialty addictions treatment are considered quality care for patients with AUD. Previous studies have demonstrated racial/ethnic differences in alcohol-related care but whether differences exist in initiation of and engagement with specialty addictions treatment among patients with clinically recognized alcohol use disorders is unknown. We investigated racial/ethnic variation in initiation of and engagement with specialty addictions treatment in a national sample of black, Hispanic, and white patients with

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Contributors

All authors contributed to the article. KMB contributed to interpretation of findings and served as the lead author of the manuscript; AHS provided support for data management and analytic resources, and contributed to study design, interpretation, and drafting of the manuscript; SG contributed to study design, served as the lead analyst, and contributed to manuscript drafting; ADR contributed to study design, data management, analysis, and drafting of the manuscript; RJW and JEG contributed to study design, interpretation of findings, and drafting of the manuscript; and ECW served as the principal investigator of the study, guiding all aspects of study design, analysis, interpretation, and preparation of the manuscript prior to submission. All authors reviewed the manuscript prior to submission.

Competing Interests

All authors report no competing interests.

clinically recognized alcohol use disorders (AUD) from the US Veterans Health Administration (VA).

Methods.—National VA data were extracted for all black, Hispanic, and white patients with a diagnosed AUD during Fiscal Year 2012. Mixed effects regression models estimated the odds of two measures of initiation (an initial visit within 180 days of diagnosis; and initiation defined consistent with Healthcare Effectiveness Data and Information Set (HEDIS) as a documented visit ≤14 days after index visit or inpatient admission), and three established measures of treatment engagement (≥ 3 visits within first month after initiation; ≥2 visits in each of the first 3 months after initiation; and ≥2 visits within 30 days of HEDIS initiation) for black and Hispanic relative to white patients after adjustment for facility- and patient-level characteristics.

Results.—Among 302,406 patients with AUD, 30% (90,879) initiated treatment within 180 days of diagnosis (38% black, 32% Hispanic, and 27% White). Black patients were more likely to initiate treatment than whites for both measures of initiation [odds ratio (OR) for initiation: 1.4, 95% confidence interval (CI) 1.4 – 1.4; OR for HEDIS initiation: 1.1, 95% CI: 1.1 – 1.1]. Hispanic patients were more likely than white patients to initiate treatment within 180 days (OR: 1.2, 95% CI 1.2 – 1.3) but HEDIS initiation did not differ between Hispanic and white patients. Engagement results varied depending on the measure but was more likely for black patients relative to white for all measures (OR for engagement in first month: 1.1, 95% CI: 1.0 – 1.1; OR for engagement in first three months: 1.2, 95% CI: 1.1 – 1.2; OR for HEDIS measure: 1.1, 95% CI: 1.0 – 1.1), and did not differ between Hispanic and white patients.

Conclusions.—After accounting for facility- and patient-level characteristics, black and Hispanic patients with AUD were more likely than whites to initiate specialty addictions treatment, and black patients were more likely than whites to engage. Research is needed to understand underlying mechanisms and whether differences in initiation of and engagement with care influence health outcomes.

Keywords

treatment; alcohol use disorder; race; ethnicity; utilization, veterans

1. INTRODUCTION

Alcohol use disorders (AUD) are common, with 7.2% of the US population meeting diagnostic criteria based on structured interviews (National Institute of Alcohol & Alcoholism, 2015), and associated with substantial morbidity and mortality (Roerecke & Rehm, 2013, 2014; Room, Babor, & Rehm, 2005). The prevalence of AUD varies by race/ethnicity, with white individuals more likely to have AUD than black or Hispanic individuals (Chartier & Caetano, 2010; Grant et al., 2004). However, among people with AUD, the burden of alcohol-related consequences is borne disproportionately by racial/ethnic minorities (Chartier, Hesselbrock, & Hesselbrock, 2013; Mulia, Ye, Greenfield, & Zemore, 2009). Among people with AUD, black and Hispanic individuals are more likely than white individuals to report alcohol-related consequences (e.g., workplace or legal) (Mulia et al., 2009; Schmidt, Greenfield, & Mulia, 2006) and to suffer from alcohol-related medical conditions, such as liver disease (Flores et al., 2008).

Specialty addictions treatment, including substance use disorder inpatient or outpatient treatment, is effective for patients with AUD (Dawson, Grant, Stinson, & Chou, 2006; Weisner, Matzger, & Kaskutas, 2003), but receipt of this care is generally low among individuals with AUD (Cohen, Feinn, Arias, & Kranzler, 2007; McGlynn et al., 2003). In the U.S., only 15% of people with AUD report receiving alcohol treatment (Cohen et al., 2007) and among VA patients in care, approximately 30% of patients with AUD receive treatment (Harris & Bowe, 2008; Harris, Bowe, Finney, & Humphreys, 2009).

Previous studies have identified multiple barriers to receipt of addictions treatment for individuals with AUD (Acevedo et al., 2012; Cohen et al., 2007). Because social conditions and access to resources, including health care, both serve as barriers to addictions treatment and vary across racial/ethnic groups in the US (Link & Phelan, 1995; Williams, 1999), receipt of addictions treatment may also vary across racial/ethnic groups. Because receipt of treatment for AUD may improve quality of life and reduce risk of adverse health outcomes (Dawson et al., 2006; Weisner et al., 2003), understanding whether addictions treatment is received equitably across racial/ethnic groups is important for efforts focused on decreasing racial/ethnic differences in alcohol-related outcomes.

The quality of treatment for AUD is often measured based on two dimensions: initiation of and engagement with addictions treatment (Harris, Humphreys, & Finney, 2007). Several previous studies, including one among patients from the Veterans Health Administration (VA), reported racial/ethnic differences in receipt of specialty care (Glass et al., 2010; Lê Cook & Alegría, 2011; Lo & Cheng, 2011; Weisner, Matzger, Tam, & Schmidt, 2002; Zemore et al., 2014). However, these studies have not examined racial/ethnic differences in dimensions of quality care (both initiation of and engagement in addictions treatment) among patients for whom addictions treatment is definitely indicated—those with clinically recognized AUD.

Additionally, racial/ethnic differences in dimensions of quality care may be confounded by a number of factors. A conceptual model describing pathways leading to racial/ethnic differences in alcohol-related care and outcomes (Williams, Lapham, et al., 2012), which is based on previous models of healthcare utilization (Aday & Andersen, 1974), depicts how race/ethnicity may affect utilization of addictions treatment. Race/ethnicity, along with other predisposing characteristics (i.e., demographic and socio-economic factors such as gender), affect utilization of alcohol-related care by both determining available resources and influencing need for such services. Predisposing characteristics also influence enabling characteristics that determine resources (e.g., insurance status) and need characteristics including disease severity and comorbid conditions (e.g., drug use disorder), both of which influence receipt of alcohol-related care and outcomes as mediated or moderated by multiple levels of community and health-system factors. Therefore, the present study investigates variation in initiation of and engagement with addictions treatment in general medical and specialty settings across three major racial/ethnic groups represented in a large national sample of VA patients with clinically recognized AUD. We estimated patient-level differences in initiation and engagement as defined by quality metrics commonly used by healthcare systems to assess high quality care and adjusted for measured predisposing, enabling, and need characteristics that could confound racial/ethnic differences.

2. MATERIALS AND METHODS

2.1 Data Source and Study Sample

Administrative data from the VA's National Patient Care Database were extracted for all VA patients who received outpatient or inpatient/residential care in VA during Fiscal Year (FY) 2012 (10/1/11 – 9/30/12), were 18 years or older, and had information regarding race/ethnicity documented (n=4,790,035). Patients were included in the analytic sample for this study if they were documented to be black, Hispanic, or white race/ethnicity (n=4,666,403; 97% of all those with documented race/ethnicity) and to have a clinically recognized AUD, defined as documentation of International Classification of Diseases 9th Edition (ICD-9) diagnoses for alcohol abuse and dependence, as well as several alcohol-attributable conditions (e.g., alcoholic cirrhosis) in any clinical encounter during the fiscal year (n=302,406; 6.5%) (diagnoses were not necessarily incident). This definition is consistent with the Healthcare Effectiveness Data and Information Set (HEDIS) denominator specification (National Committee for Quality Assurance, 2011), and includes alcohol-attributable conditions because AUD often goes unrecognized in clinical settings and, when recognized, is likely to be documented in varying ways. Patients with unknown race, and those documented to be Asian/Pacific Islander and American Indian/Alaska Native were excluded from this study because of small sample sizes, consistent with previous work (Williams, Bradley, Gupta, & Harris, 2012; Williams, Lapham, et al., 2012). by This study was reviewed and approved by both the Internal Review Boards at Stanford University and the VA Palo Alto Healthcare System.

2.2 Measures

2.2.1 Main independent variable of interest:

2.2.1.1 *Race/ethnicity* was categorized as non-Hispanic black, Hispanic, and non-Hispanic white, consistent with recommendations from the US Office of Management and Budget (Office of Budget and Management, 1997). Because patients could identify with multiple racial/ethnic groups, race/ethnicity was hierarchically coded, first as Hispanic ethnicity, and then as black and then white, consistent with single-race/ethnicity classification by rarest to most common racial/ethnic groups (Mays, Ponce, Washington, & Cochran, 2003).

2.2.2 Outcome measures:

2.2.2.1 Initiation of and Engagement with Addiction Specialty Treatment.: *Initiation* was defined as any documented visit for specialty addictions treatment on the day of or in 180 days following the first AUD diagnosis in FY12. Specialty addictions treatment visits were identified using inpatient bed sections (sections 27, 29, 72, 74, 84, 86, 90, and 111) and outpatient clinic stops (stop codes 513, 514, 519, 545, 547, 548, 560, 534) for substance use disorder treatment encounters with an accompanying AUD diagnosis (Harris, Reeder, Ellerbe, & Bowe, 2010).

Two measures of engagement with specialty addictions treatment were derived, both measured on the day of or in the 180 days following the first AUD diagnosis in FY12 (Harris, Kivlahan, Bowe, Finney, & Humphreys, 2009). These included: *engagement in the first month*, based on whether a patient had three or more visits to specialty addictions

treatment within 30 days of and including the first visit, and *engagement in the first three months*, defined as two or more specialty addictions treatment visits in each of the first three months of and including the first visit.

2.2.2.2 HEDIS Measures of Initiation and Engagement.: In order to facilitate comparison with other healthcare systems that may use HEDIS measures for monitoring AUD treatment quality, we additionally defined initiation and engagement consistent with the HEDIS measures of initiation and engagement (Garnick, Horgan, & Chalk, 2006). *HEDIS initiation* is defined as an inpatient/residential substance use disorder (SUD) admission or outpatient access visit (defined using diagnosis and procedure codes) within 14 days of an initial substance use disorder visit following a 60-day SUD service-free period. *HEDIS engagement* was defined as meeting criteria for HEDIS initiation and having two or more additional visits within 30 days of HEDIS initiation (Garnick et al., 2006; Garnick et al., 2002). HEDIS measures were not limited to only specialty addictions treatment but included treatment in other settings such as general medical settings.

2.2.3 Covariates: Consistent with the conceptual framework described above (Williams, Lapham, et al., 2012) and, aligned with available data, covariates were selected a priori and included predisposing, enabling, and need characteristics, as well as facility-level characteristics, that could confound or potentially mediate racial/ethnic differences in receipt of addictions treatment.

2.2.3.1 Predisposing Characteristics: These characteristics include gender (male/female) and age as of the start of FY12 grouped into five categories (18–24; 25–34; 35–49; 50–64; and ≥65 years).

2.2.3.2 Enabling Characteristics: Marital status was categorized as married, single, divorced/separated, or widowed. VA Eligibility Status is determined by the nature of a veteran's discharge from military service, length of service, income level, available VA resources, and the existence and severity of service-connect disabilities. For the present study, eligibility was used as a possible indicator of socio-economic status and grouped into the following categories: full VA coverage, service-connected <50%, non-service connected, and non-Veteran or Employee/Volunteer, with full VA coverage representing the most disadvantaged group based on lower socioeconomic status and/or service-connected medical need (Williams, Lapham, et al., 2012; Young, Maynard, & Boyko, 2003),

2.2.3.3 Need Characteristics: A number of need characteristics were derived based on ICD-9 diagnostic codes and measured based on documentation on the day of or in 180 days prior to index AUD diagnosis. These included substance use disorder comorbidity, including drug use disorder, tobacco use disorder, and alcohol-related medical conditions, such as fractures (Harris, Bryson, Sun, Blough, & Bradley, 2009), traumas (Williams, Bryson, et al., 2012), and upper gastrointestinal bleed and pancreatitis (Au, Kivlahan, Bryson, Blough, & Bradley, 2007). In addition, mental health disorders were based on diagnoses for major depression, other mood disorders, and serious mental illness. General medical comorbidity was measured using the Deyo index, a validated adaptation of the Charlson comorbidity index using administrative data (Deyo, Cherkin, & Ciol, 1992).

2.2.3.4 Facility-level Characteristics: Patients were assigned to a facility based on where they received the majority of care in FY12. Three facility-level measures were derived as proxies for structural or environmental factors that may influence racial/ethnic differences in care (Williams, Bradley, et al., 2012). The first was *facility-level rate of AUD diagnosis*, to capture facility-level differences in AUD diagnoses. The second and third measures included *percent Hispanic*, and *percent black* patients, which may be a proxy for many facility-level factors, and facilitates isolation of the individual-level effect of race from any facility-level confounding (Begg & Parides, 2003).

2.3 Analyses

All patient-level characteristics were described and compared across racial/ethnic groups with chi-square tests of independence. For each outcome measure of initiation and engagement, we specified five mixed effects logistic regression models, with race/ethnicity as the main independent variable and a random effect for facility. The five models were run with iteratively added covariates to help both fully control for confounders and to understand possible mechanisms via which racial/ethnic differences in addiction treatment may arise. These included unadjusted (Model 1), adjusted only for facility-level characteristics (Model 2), adjusted additionally for predisposing characteristics (Model 3), adjusted additionally for enabling characteristics (Model 4), and adjusted additionally for need characteristics (Model 5). For all three measures of engagement, models 1–5 were run first among the entire study population (all patients with an AUD) and then among only patients who met applicable criteria for initiation in order to estimate the effect of engagement given initiation of treatment. All analyses were conducted in SAS Version 9.2 (SAS Institute, Cary, NC) and Stata Version 13 (StataCorp., 2011).

3. RESULTS

3.1 Descriptive Analyses

Among 302,406 patients with AUD included in this study, 79,585 (26%) were black, 21,476 (7%) were Hispanic, and 201,345 (67%) were white. Predisposing, enabling, and need characteristics varied across racial/ethnic groups (Table 1). Black patients with AUD had the highest proportion of patients who were female, middle age, or had another substance use disorder and high overall comorbidity. Hispanic patients with AUD had the highest proportion of individuals who were less than 34 years old, married, or who had alcohol-related medical and mental health comorbidities.

The proportions of patients who initiated and engaged with care are presented in Table 2. For measures of specialty addiction treatment initiation and engagement, 30% of those with AUD initiated treatment and 79% of those who initiated treatment engaged with treatment in the first month (Table 2). For HEDIS measures of initiation and engagement, a smaller percentage (17%) initiated care and, of those, 27% met HEDIS engagement criteria for the first month of treatment (Table 2).

Proportions of patients initiating and engaging with care varied across racial/ethnic groups such that, regardless of the measure definition or denominator of interest, the proportion of

patients initiating and engaging with care was generally highest among black patients (Table 2). However, differences in initiation and engagement in treatment between Hispanic or white patients depended on the measure and denominator of interest. There were a higher proportion of Hispanic patients who initiated specialty addictions treatment, but there was no difference in engagement between Hispanic and white patients for patients who had initiated treatment, or for either of the HEDIS measures (Table 2).

3.2 Multivariate Analyses

3.2.1 Racial/Ethnic Differences in Initiation of and Engagement with Specialty Addictions Treatment—

Both black and Hispanic patients had significantly higher odds than white patients of initiating AUD treatment after adjustment for facility, predisposing, enabling, and need characteristics (Table 3). Black patients were more likely than white patients to meet criteria for initiation in all regression models [odds ratio (OR) = 1.8, 95% confidence interval (CI): 1.35 – 1.41], though the magnitude of this association decreased after adjustment for need characteristics (Table 3). Hispanic patients were also more likely than white patients to meet criteria for initiation (OR = 1.21, 95% CI: 1.16 – 1.25), though the magnitude of the association decreased after adjustment for predisposing characteristics (Table 3).

Models assessing engagement with specialty addictions treatment in the full sample produced similar results. Both black and Hispanic patients had higher odds than whites of engagement in the first month of treatment, after adjustment for all covariates (OR for black: 1.36, 95% CI: 1.33 – 1.40; OR for Hispanic: 1.17, 95% CI: 1.12 – 1.21). However, when the sample was limited to patients who met criteria for initiation, no differences between Hispanic and white patients were observed for either measure of specialty addictions treatment engagement (Table 3), and the magnitude of the difference in the odds of engagement between black and white patients was smaller than in the full sample (OR = 1.09, 95% CI: 1.05, 1.14). Results for engagement as measured by at least two visits in each of the first three months were similar to engagement in the first month.

3.2.2 Racial/Ethnic Differences in HEDIS Initiation and Engagement—

After full adjustment, black patients had significantly higher odds of HEDIS initiation than white patients, although initiation for Hispanics did not differ from white patients (OR for black patients = 1.10, 95% CI: 1.07 – 1.12). Among all patients with AUD, black patients were more likely than white patients to meet criteria for HEDIS engagement across all models (OR = 1.14, 95% CI: 1.09 – 1.19). The magnitude of the difference between black and white patients was smaller than that for engagement with specialty addictions treatment and decreased after adjustment for need variables (Table 3). However, among all patients with AUD, Hispanic patients were more likely than white patients to meet criteria for HEDIS engagement in unadjusted models and the models only adjusted for facility-level characteristics. No differences between Hispanic and white patients were observed after adjustment for remaining characteristics (Table 3). Among patients who initiated treatment, black patients had a small but statistically significant increased odds of HEDIS engagement relative to white patients across all models (OR = 1.08, 95% CI: 1.03 – 1.13), but no differences were observed between Hispanic and white patients (Table 3).

4. DISCUSSION

In this study we described and compared rates of initiation of and engagement with addictions treatment in specialty or general medical settings across racial/ethnic groups in a national sample of VA patients with clinically recognized, though not necessarily incident, AUD. Findings suggest that black patients with AUD are consistently more likely than white patients to initiate and engage with treatment across multiple measures of these constructs, including measures targeting specialty clinics and measures of addiction treatment in any setting. Initiation and engagement were more likely among Hispanics than whites in the full sample of patients with AUD, but engagement did not differ between these groups among those who already initiated care. There were also no differences between Hispanic and white patients for any HEDIS measure of initiation or engagement.

Because many racial/ethnic differences in health care do not favor black and Hispanic patients (Saha et al., 2008; Smedley et al., 2003), findings from this study are not consistent with most racial/ethnic differences in receipt of health care for other conditions. However, these findings are consistent with results of several prior studies focusing on racial/ethnic differences in the receipt of alcohol-related care in clinical populations. Specifically, previous research among patients with unhealthy alcohol use identified by alcohol screening has found higher rates of receipt of brief intervention (Arndt, Schultz, Turvey, & Petersen, 2002; Dobscha, Dickinson, Lasarev, & Lee, 2009; Mukamal, 2007; Williams, Lapham, et al., 2012) and initiation of new episodes of specialty addictions treatment (Glass et al., 2010) among black patients relative to white. Interestingly, these findings differ from studies showing racial/ethnic differences in treatment completion, which consistently show that black and Hispanic patients are less likely to complete treatment than white patients (Arndt, Acion, & White, 2013; Bluthenthal, Jacobson, & Robinson, 2007; Guerrero et al., 2013; Saloner & Le Cook, 2013). The present study builds on these previous studies by describing racial/ethnic differences across established measures of initiation and engagement to alcohol-related care that are used to define quality metrics in the VA and in other healthcare systems among patients with documented AUD for whom this care is clearly recommended.

Mechanisms underlying differences in receipt of care between black and Hispanic, relative to white patients with AUD remain unknown. Results from this study, however, point to possible mechanisms to explore in future studies. In the present study, the magnitude of the difference in likelihood of initiation and engagement in treatment between black and white patients was reduced after adjustment for need variables, which included drug use disorder. The largest difference between prevalence of need covariates between black and white patients was the prevalence of drug use disorders, with 43% of black patients with AUD also having a drug use disorder compared to 20% of white patients, indicating that black patients may have a greater need for addictions treatment than white patients. Future studies should differentiate between treatment for alcohol, other drug, or poly-drug use to better understand racial/ethnic differences in treatment.

Mixed findings regarding differences in initiation of and engagement with treatment between Hispanic and white patients with AUD are similarly complex. While this study found that Hispanic patients had higher odds of initiating specialty addictions treatment than

white patients, these differences decreased substantially in magnitude and in some cases were no longer statistically significant after adjustment for predisposing characteristics including gender and age. While most patients in this study were male, Hispanics were more likely than white or black patients to be in the youngest age group (between age 18 and 34 years). Younger VA patients are likely to be Veterans of Operations Enduring or Iraqi Freedom (OEF/OIF), who have a high prevalence of AUD and are often treated in deployment clinics (Hawkins, Lapham, Kivlahan, & Bradley, 2010), which may result in increased assessment of AUD and referral to specialty addictions treatment. Therefore, adjusting for age may also adjust for care setting and associated practices of assessment and referral. This may also help to explain the significant difference between Hispanic and white patients in initiation of specialty addictions treatment, which only measures treatment in specialty addictions clinics, and the lack of difference in HEDIS initiation, which measures addictions treatment in any setting.

There were many other factors not measured in this study that could also contribute to differences between black and white patients in initiation of and engagement with treatment. Contexts where people live are patterned by race/ethnicity and may be related to initiation of and engagement with treatment. One such contextual factor is neighborhood disadvantage. Due to a long history of residential segregation in the United States, neighborhood disadvantage is strongly patterned by race such that black people are much more likely than whites to reside in low-income neighborhoods (White, Haas, & Williams, 2012). Disadvantaged neighborhoods have a higher percentage of liquor stores and more alcohol-related advertising than advantaged neighborhoods (Chartier et al., 2014). Alcohol-related problems are more prevalent for black than white men in disadvantaged communities (Jones-Webb, Snowden, Herd, Short, & Hannan, 1997; Karriker-Jaffe et al., 2012). Therefore, living in disadvantaged neighborhoods may create more need for and willingness to engage in treatment.

Similarly, disadvantaged neighborhoods are likely to have high crime rates and substantial police presence. This may lead to law enforcement agencies disproportionately identifying alcohol-related problems in the black community, leading to a higher proportion of arrests (Zapolski, Pedersen, McCarthy, & Smith, 2014). Because many patients present to addiction treatment due to recent criminal justice system involvement, and/or mandatory referrals (Booth, Curran, Han, & Edlund, 2013), greater law enforcement involvement in referring individuals could result in greater initiation of and engagement with treatment for black patients relative to white patients. Black communities also have strong social norms promoting alcohol abstinence (Zapolski et al., 2014), potentially providing greater social incentives to initiating and engaging with treatment. Whether patients were court-ordered to initiate and engage with treatment is unknown in this data set, limiting the understanding of whether this mediates the racial/ethnic differences in initiation of and engagement with treatment observed in this study.

While additional facility-level effects have been addressed by adjusting for both facility-level and patient-level race/ethnicity, there may be additional provider-level factors that account for some differences identified between black and white patients. Provider-level mechanisms, such as conscious or unconscious bias have been shown to impact health

disparities (Burgess, van Ryn, Dovidio, & Saha, 2007; DeCoux Hampton, 2007) and may lead to increased recognition of AUD and referrals to treatment among black patients relative to white.

Finally, unmeasured patient-level differences may account for differences in initiation of and engagement with treatment between black and white patients. For instance, distance from residence could impact access to treatment, as rural drinkers have greater barriers to treatment than urban drinkers (Booth, Kirchner, Fortney, Ross, & Rost, 2000). Additionally, while related to income, disability, and military service, our measure of socioeconomic status was limited. Moreover, while black individuals are, in general, less likely than white patients to use alcohol, those that do use alcohol are more likely to experience alcohol-related consequences (Mulia et al., 2009). Experiencing consequences is associated with alcohol and drug treatment (Weisner et al., 2002) and could therefore potentially explain the higher rates of initiation and engagement with treatment observed in this study.

4.1 Limitations

In addition to unmeasured potential structural, health system, provider, and patient-level determinants of differences in initiation of and engagement with treatment described above, this study has several additional limitations. First, due to reliance on secondary administrative VA data, we were only able to examine initiation of and engagement with addictions treatment within the VA. Patients may receive care for their AUD outside of the VA, and patterns of outside use may vary across racial/ethnic groups. While patterns specific to addictions treatment have not been examined, previous research has shown that white patients are more likely than black to be dual users of VA and outside care (Gurmankin, Polsky, & Volpp, 2004). In this study only 10% of black patients compared with 20% of white patients were Medicare eligible (age 65 or over); suggesting that white patients may be more likely to have additional insurance, allowing them to be dual users. In 2013, 65.4% of the 62,000 veterans who sought substance abuse treatment at non-VA publically funded treatment facilities were admitted to substance abuse treatment with alcohol as the primary substance of abuse (SAMHSA, 2015), highlighting the large effect that dual use may have on racial/ethnic differences in initiation of and engagement with treatment at the VA. This study also used first documented AUD diagnosis during FY 2012, which were not necessarily incident diagnoses, to identify the study sample. Therefore, it is possible that previous initiation and/or engagement of specialty addictions treatment were not captured and/or that the need for it was less imminent among patients for whom the diagnosis was not incident. Because changes in the prevalence of AUD are occurring over time (Grant et al., 2004; Grant et al., 2015), and potentially differently across racial/ethnic groups, it is possible that observed racial/ethnic differences in treatment initiation and engagement could be confounded by unobserved differences in the timing of AUD diagnosis across racial/ethnic groups. Generalizability of this study may also be limited to patients using VA care or other patient samples with similar characteristics (i.e., samples of older black, Hispanic, and white men). While documentation of race/ethnicity has improved over time in the VA, especially for the racial/ethnic groups included in this study, there may still be some misclassifications because race/ethnicity was determined by clinical documentation and not from direct self-report.

5. CONCLUSIONS

Despite limitations, this large study included every black, Hispanic, or white patient at least 18 years old who sought care in the nationwide VA healthcare system in a single year who had a clinically recognized AUD and is the first to our knowledge to evaluate racial/ethnic variation in receipt of specialty addictions treatment among patients for whom it is considered gold-standard care—those with clinically recognized AUD. Findings suggest that racial/ethnic minorities are more likely than white patients to initiate treatment, and black patients are more likely than white to engage in treatment. While several factors, including contextual, provider, and patient-level characteristics, may explain observed differences, future research is needed to understand mechanisms underlying differences in care and whether differences influence the health and alcohol-related outcomes of patients. Moreover, because treatment utilization rates were low across all race/ethnicities, more research is needed to understand and address barriers to receipt of addictions treatment among patients with AUD across all racial/ethnic groups.

Acknowledgements

The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the Department of Veterans Affairs.

Sources of Support

This study was funded by a Veterans Affairs (VA) Substance Use Disorders Quality Enhancement Research Initiative (SUD QUERI) locally initiated project (QLP 59–031). Ms. Bensley was supported by an AHRQ/NRSA T-32 training grant at the University of Washington and is currently supported by a Research Assistantship with VA Puget Sound Health Services Research & Development. Dr. Williams is supported by a Career Development Award from VA Health Services Research & Development (CDA 12–276). Dr. Harris is supported by a Career Scientist Award from VA Health Services Research & Development (RCS-14–232). Dr. Glass is supported by National Institutes of Health award 1R03AA023639.

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Table 1:

Predisposing, Enabling, and Need Characteristics: Overall and Compared across Racial/Ethnic Groups among Black, Hispanic, and White VA patients with Alcohol Use Disorders in Fiscal Year 2012

	Black (n= 79585)	Hispanic (n= 21476)	White (n= 201345)		Total (n= 302406)
	%	%	%	p-value	%
Predisposing Characteristics					
Gender				<0.001	
Female	5	3	4		4
Age					
18–24	1	4	2	<0.001	2
25–34	6	17	10		10
35–49	20	19	16		17
50–64	63	47	51		54
≥65	10	14	20		17
Enabling Characteristics					
Marital Status				<0.001	
Married	24	37	34		32
Never Married	37	28	23		27
Divorced/Separated	35	33	39		38
Widowed	4	3	4		4
VA Eligibility Status				<0.001	
Full VA Coverage	26	33	26		26
Service-connected < 50%	21	20	20		20
Non-service connected	52	46	54		53
Non-Veteran or Employee/Volunteer	1	1	1		1
Need Characteristics					
Drug Use Disorder	43	24	20	<0.001	26
Tobacco Use Disorder	39	38	27	<0.001	38
Alcohol-related medical conditions					
Outpatient Fractures	2	3	3	<0.001	3
Inpatient Traumas	9	10	9	<0.001	9
Liver Disease	3	5	4	<0.001	4
Upper GI bleed	2	3	2	<0.001	2
Pancreatitis	2	1	1	<0.001	2
Mental Health Conditions					
Major depression	13	15	13	<0.001	13

	Black (n= 79585)	Hispanic (n= 21476)	White (n= 201345)		Total (n= 302406)
	%	%	%	p-value	%
Other mood disorders	36	36	34	<0.001	34
Serious mental illness	33	39	31	<0.001	32
General Comorbidity (Charlson Score using Deyo Index)					
0	63	67	64		64
1	27	25	28	<0.001	28
2+	10	8	8		8

[a]Alcohol related medical conditions were determined using the following ICD-9 codes:
Fractures (800–829, 733.8, 905.0–905.5)
Trauma (830–904, 910–959, 994.1, 994.7, 994.8)
Liver Disease (570, 571.0–571.5, 571.9)
Upper GI Bleed (456.0–456.2, 530.7, 530.82, 531.0, 531.2, 531.4, 531.6, 532.0, 532.2, 532.4, 532.6, 533.0, 533.2, 533.4, 533.6, 534.0, 534.2, 534.4, 534.6, 578.0, 578.1, 578.9)
Pancreatitis (577)

[b]Mental Health Conditions were determined using the following ICD-9 codes:
Major depression (296.2–3)
Other mood disorders (311, 300.4, 309.0, 293.83, 296.9, 309.1, 301.12)
Serious mental illness (295.0–9, 296.0–1, 296.4–6, 296.7, 309.81)

[c]General Comorbidity Deyo Index Conditions were calculated using the following ICD-9 codes:
MI (410–410.9; 412), Congestive Heart Failure (428–428.9), Peripheral vascular disease (443.9 441–441.9 785.4 V43.4 procedure 38.48), Cerebrovascular disease (430–438), Senile and presenile dementias* (290–290.9), Chronic pulmonary disease (490–496; 500–505; 506.4), Rheumatologic disease (710.0; 710.1; 710.4; 714.0–714.2; 714.81; 725), Peptic Ulcer Disease (531–534.9; 531.4–531.7; 532.4–532.7; 533.4–533.7; 534.4–534.7), Mild liver disease including (571.2; 571.5; 571.6; 571.4–571.49), Moderate or severe liver disease (572.2–572.8; 456.0–456.21), Diabetes (250–250.3; 250.7), Diabetes with chronic complicatoins (250.4–250.6), Hemiplegia or paraplegia (344.1; 342–342.9), Renal Disease (582–582.9; 583–583.7; 585; 586; 588–588.9), Malignancies (140–172.9;174–195.8; 200–208.9), Metastatic solid tumor (196–199.1), AIDS and HIV (042–044.9)

Table 2:

Proportions of VA Patients with Alcohol Use Disorder (AUD) during Fiscal Year 2012 who met Varying Criteria for Initiation of and Engagement with Addictions Treatment, Overall and across Racial/Ethnic Groups

	Black (n= 79585)	Hispanic (n= 21476)	White (n= 201345)		Total (n=302,406)
	%	%	%	p-value	%
MEASURES OF INITIATION AND ENGAGEMENT WITH SPECIALTY TREATMENT					
Initiation of Specialty Addictions Treatment					
Any documented visit	38	32	27	<0.001	30
Engagement with Specialty Addictions Treatment (Among all Patients)					
≥ 3 visits within 1st month	31	24	21	<0.001	24
≥2 visits in each of the 1st 3 months (6 total visits in 3 months)	22	16	14	<0.001	16
Engagement With Specialty Addictions Treatment (Among only Patients who Initiated Specialty Treatment)	n=30303	n=6816	n=53760		n=90,879
≥ 3 visits within 1st month	81	76	78	<0.001	79
≥2 visits in each of the 1st 3 months (6 total visits in 3 months)	59	51	52	<0.001	54
HEDIS INITIATION AND ENGAGEMENT WITH SPECIALTY TREATMENT OR AUD CARE IN GENERAL HOSPITAL SETTING					
HEDIS Initiation					
Documented visit ≤14 days after index visit or inpatient admission	21	17	16	<0.001	17
HEDIS Engagement (Among all Patients)					
≥2 visits within 30 days of HEDIS initiation	6	4	4	<0.001	5
HEDIS Engagement (Among those who met criteria for HEDIS initiation)	n=16501	n=3649	n=32516		n=52,666
≥2 visits within 30 days of HEDIS initiation	29	24	26	<0.001	27

Table 3:

Odds of initiation of and engagement with addictions treatment for black and Hispanic, relative to white, VA patients with alcohol use disorders.

	Total N	Black	Hispanic
		OR [95% CI]	OR [95% CI]
INITIATION AND ENGAGEMENT WITH SPECIALTY ADDICTIONS TREATMENT			
Initiation of Specialty Addictions Care *	302,406	79,585	21,476
Unadjusted		**1.80 (1.77, 1.84)**	**1.41 (1.36, 1.46)**
Adjusted for facility-level characteristics		**1.80 (1.77, 1.84)**	**1.41 (1.36, 1.46)**
Adjusted for facility and predisposing		**1.75 (1.71, 1.78)**	**1.25 (1.20, 1.29)**
Adjusted for facility, predisposing, and enabling		**1.70 (1.67, 1.74)**	**1.26 (1.22, 1.31)**
Adjusted for facility, predisposing, enabling, and need		**1.38 (1.35, 1.41)**	**1.21 (1.16, 1.25)**
Engagement with Specialty Addictions Treatment (Among all Patients)	302,406	79,585	21,476
≥ 3 visits within 1st month *			
Unadjusted		**1.85 (1.81, 1.89)**	**1.34 (1.29, 1.39)**
Adjusted for facility-level characteristics		**1.85 (1.82, 1.89)**	**1.34 (1.29, 1.39)**
Adjusted for facility and predisposing		**1.77 (1.73, 1.81)**	**1.21(1.17, 1.26)**
Adjusted for facility, predisposing, and enabling		**1.72 (1.68, 1.75)**	**1.23 (1.18, 1.28)**
Adjusted for facility, predisposing, enabling, and need		**1.36 (1.33, 1.40)**	**1.17 (1.12, 1.21)**
≥2 visits in each of the 1st 3 months (6 total visits in 3 months) *			
Unadjusted		**1.94 (1.89, 1.98)**	**1.28 (1.22, 1.34)**
Adjusted for facility-level characteristics		**1.94 (1.90, 1.99)**	**1.28 (1.23, 1.34)**
Adjusted for facility and predisposing		**1.82 (1.78, 1.86)**	**1.19 (1.14, 1.25)**
Adjusted for facility, predisposing, and enabling		**1.76 (1.72, 1.80)**	**1.20 (1.15, 1.26)**
Adjusted for facility, predisposing, enabling, and need		**1.39 (1.36, 1.43)**	**1.13 (1.08, 1.19)**
Engagement With Specialty Addictions Treatment (Among only Patients who Initiated Specialty Treatment)	90,789	30,303	6,816
≥ 3 visits in 1st month **			
Unadjusted		**1.33 (1.28, 1.38)**	**0.93 (0.87, 0.99)**
Adjusted for facility-level characteristics		**1.33 (1.28, 1.39)**	**0.93 (0.87, 0.99)**
Adjusted for facility and predisposing		**1.25 (1.20, 1.30)**	0.96 (0.90, 1.03)
Adjusted for facility, predisposing, and enabling		**1.23 (1.19, 1.29)**	0.97 (0.91, 1.04)
Adjusted for facility, predisposing, enabling, and need		**1.09 (1.05, 1.14)**	0.95 (0.89, 1.02)
≥2 visits in the 1st 3 months of treatment (6 total visits in 3 months) **			
Unadjusted		**1.38 (1.33, 1.42)**	**0.93 (0.88, 0.99)**
Adjusted for facility-level characteristics		**1.38 (1.34, 1.43)**	**0.94 (0.88, 0.99)**

	Total N	Black	Hispanic
		OR [95% CI]	OR [95% CI]
Adjusted for facility and predisposing		**1.29 (1.25, 1.33)**	0.97 (0.92, 1.03)
Adjusted for facility, predisposing, and enabling		**1.27 (1.22, 1.31)**	0.98 (0.92, 1.04)
Adjusted for facility, predisposing, enabling, and need		**1.16 (1.12, 1.20)**	0.95 (0.90, 1.01)
HEDIS INITIATION AND ENGAGEMENT WITH SPECIALTY TREATMENT OR AUD CARE IN GENERAL HOSPITAL SETTING			
HEDIS Initiation (access in first 14 days after index visit) *	302,406	79,585	21,476
Unadjusted		**1.38 (1.34, 1.41)**	**1.10 (1.06, 1.15)**
Adjusted for facility-level characteristics		**1.38 (1.34, 1.41)**	**1.11 (1.06, 1.16)**
Adjusted for facility and predisposing		**1.34 (1.31, 1.37)**	1.03 (0.99, 1.08)
Adjusted for facility, predisposing, and enabling		**1.30 (1.27, 1.33)**	1.05 (1.00, 1.09)
Adjusted for facility, predisposing, enabling, and need		**1.10 (1.07, 1.12)**	0.98 (0.94, 1.02)
HEDIS Engagement (Among all Patients)*	302,406	79,585	21,476
Unadjusted		**1.46 (1.41, 1.52)**	**1.13 (1.05, 1.22)**
Adjusted for facility-level characteristics		**1.47 (1.41, 1.53)**	**1.14 (1.06, 1.24)**
Adjusted for facility and predisposing		**1.40 (1.35, 1.46)**	1.03 (0.95, 1.12)
Adjusted for facility, predisposing, and enabling		**1.36 (1.31, 1.42)**	1.05 (0.97, 1.14)
Adjusted for facility, predisposing, enabling, and need		**1.14 (1.09, 1.19)**	1.00 (0.92, 1.08)
HEDIS Engagement (Among those who met criteria for HEDIS initiation)**	52,666	16,501	3, 649
Unadjusted		**1.15 (1.10, 1.21)**	1.03 (0.94, 1.13)
Adjusted for facility-level characteristics		**1.16 (1.10, 1.21)**	1.04 (0.95, 1.14)
Adjusted for facility and predisposing		**1.14 (1.09, 1.20)**	1.00 (0.91, 1.09)
Adjusted for facility, predisposing, and enabling		**1.14 (1.09, 1.20)**	1.01 (0.93, 1.11)
Adjusted for facility, predisposing, enabling, and need		**1.08 (1.03, 1.13)**	1.00 (0.92, 1.10)

Relative to white patients

* (n=201345)

** (n=53760)

*** (n=32516)

Bolded results indicate significance at a $p < 0.05$ level