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Ethnic differences in utilization of drug treatment services and outcomes among Proposition 36 offenders in California

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Abstract

This study examined whether ethnic differences exist in access to care, receipt of services, and associated outcomes of 1,057 offenders participating in California's Proposition 36. Data are based on intake and three-month follow-up interviews conducted as part of a multi-site prospective treatment outcome study. Logistic regressions were conducted to examine ethnicity and other predictors of treatment placement and services intensity. Across ethnic groups, services intensity in several domains was inadequately matched to need, and few services besides substance abuse treatment were provided. Blacks and Hispanics received alcohol and employment services that were not commensurate with their greater need. Although Blacks were more likely to be placed in residential programs, their employment status worsened from intake to follow-up. There were few other ethnic differences in outcomes. Assessing and eliminating ethnic-associated differences in health service delivery, even as moderate as our findings revealed, may improve program processes and outcomes.

Keywords

ethnic differences; health services utilization; drug treatment outcomes; Proposition 36

1. Introduction

The criminal justice system represents an opportunity for drug abusers to begin to access services for their substance abuse problems and other needs (Hammett et al., 1998; Phillips, 1992; Rounds-Bryant et al., 2004; Wenzel et al., 2001). Although comparatively few individuals receive drug abuse treatment while incarcerated (Belenko and Peugh, 1999; Lowinson et al., 2005; Volkow, 2006), many high-risk, high-need drug users who may not have otherwise entered community-based treatment are doing so for the very first time via criminal justice arrangements (Young et al., 2004). The criminal justice system serves as an effective referral source to treatment services in the community and can be a mechanism for enhancing treatment retention and compliance (Anglin et al., 1998; Hiller et al., 1998; Marlowe,

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2001; Young, 2002; Young and Belenko, 2002). Legal coercion has been found to enhance treatment retention and compliance (Anglin et al., 1998; Young, 2002; Young and Belenko, 2002), and may reduce recidivism rates (Turley et al., 2004; Young et al., 2004). California recently implemented Proposition 36, a criminal justice mechanism for referring drug-abusing offenders to treatment.

Proposition 36 (or the Substance Abuse and Crime Prevention Act of 2000, SACPA) was enacted into law by California voters in 2001. It allows non-violent drug offenders to receive treatment in lieu of incarceration or probation/parole without treatment. Offenders on parole or probation who violate the drug-related stipulations of their supervision are also eligible. Entry into Proposition 36 treatment is a multi-step process (see Longshore et al., 2004 for details). First, eligibility determination is made based on the offender's current offense and past criminal history, after which eligible offenders are offered treatment in lieu of routine criminal justice processing, and offenders who choose to participate are ordered to complete a treatment assessment and enter treatment. Proposition 36 aims to improve public safety by decreasing drug-related crime and reserving jail and prison space for serious and violent offenders and, more broadly, it is intended to improve public health by reducing drug abuse and dependence with the use of effective treatment strategies (Drug Policy Alliance, 2006). Proposition 36 is important because its impact on the criminal justice system (CJS) and on the substance abuse treatment system will probably have profound and extensive long-term implications for policy and practice at the local, state, and national levels (Hser et al., 2003).

Thus far, evaluation of Proposition 36 has yielded some promising but also troubling results. More than 250,000 people have been referred to treatment under Proposition 36 since its initiation: half entered treatment for the very first time, most had been using drugs for over 10 years, and ethnic minority groups made up 55% of the Proposition 36 population, with Hispanics being the largest group (Longshore et al., 2004). Proposition 36 has substantially reduced incarceration costs in California (Drug Policy Alliance, 2006; Longshore et al., 2006) and outcomes have been favorable for treatment completers (Longshore et al., 2004). However, Proposition 36 appears to have displaced individuals who are not involved with the CJS and are seeking publicly funded treatment for their substance abuse problems, making it more difficult for voluntary clients to receive care (Hser et al., 2007). Additionally, among high-severity clients entering Proposition 36 during the early period of the program's implementation, Blacks were more likely to be placed in outpatient rather than residential treatment, and minority groups (Blacks, Hispanics, and American Indians) exhibited the lowest treatment completion rates (Longshore et al., 2004). These earlier findings suggest a need for in-depth assessments of differences in access to and receipt of services among ethnic groups, which the present article discusses.

A review of the literature on ethnic differences in the utilization of substance abuse treatment services reveals inconsistent results. Some studies indicate that minority groups, compared to Whites, experience better or equal access to and utilization of treatment services (Daley, 2005; Niv and Hser, 2006; Yang et al., 2006), with an over-representation of minorities in some substance abuse treatment programs (De La Rosa et al., 1990; Desmond and Maddux, 1984; Hanson, 1985; Jung, 2000; Kopstein and Roth, 1990; SAMHSA, 2002; Schmidt and Weisner, 1993; Yang et al., 2006). Other evidence indicates ethnic disparities do occur, with minorities experiencing reduced access to drug treatment (Little, 1981; Lundgren et al., 2001; Rhodes et al., 1990; Robles et al., 2003; Rounsaville and Kleber, 1985; Wu et al., 2004; Wu et al., 2003), fewer services (Wells et al., 2001), shorter treatment stays (Agosti et al., 1996; Evans et al., 2006; Longshore et al., 2004; McCaul et al., 2001; Milligan et al., 2004), or no substance abuse treatment services at all (Longshore et al., 1992). Despite mixed findings on ethnic differences in the drug treatment literature, researchers increasingly agree that minority groups experience more persistent and severe drug addiction, greater harmful consequences such as

an increased rate of infectious diseases (e.g., HIV) related to intravenous drug use , and a higher prevalence of morbidity and mortality (Cooper et al., 2005; Demetriades et al., 2004; Friedman et al., 1987; Galea et al., 2003; Harlow, 1990; Kochanek et al., 2004; National Center for Health Statistics, 2004a, b; Prendergast et al., 1998; SAMHSA, 2003; Tardiff et al., 1989).

Because a large number of ethnic minority offenders have been routed to substance abuse treatment under Proposition 36, and early analyses have revealed some ethnic disparities in treatment services intensity and completion rates, a thorough assessment of ethnic differences and associated outcomes is critical. Findings are necessary to support decision making, as the California legislature is currently considering strategies for improving the Proposition 36 program. In this article, we examine whether ethnic differences exist in treatment placement, service intensity, and short-term outcomes in a sample of Proposition 36 clients. Our main research questions examined ethnic variation in (1) the type and intensity of treatment services needed and received, (2) predictors of treatment placement and service intensity, and (3) short-term outcomes. We hypothesized that Black and Hispanic individuals participating in substance abuse treatment arranged by California's Proposition 36 would experience a greater mismatch between need, treatment placement and service intensity, receive fewer services, and display poorer short-term outcomes.

2. Methods

2.1. Study Design

Data analyzed in this study were derived from the project "Treatment System Impact and Outcomes of Proposition 36 (TSI)," which is a NIDA-funded multi-site prospective treatment outcome study designed to assess the impact of Proposition 36 on California's drug treatment delivery system and evaluate the effectiveness of services delivered. Thirty treatment assessment sites in five counties were selected for participation based on geographic location, population size, and diversity of Proposition 36 implementation strategy (see Hser et al., 2003 for additional information). All Proposition 36 clients assessed by the participating sites were invited to participate in the study, and 1,134 clients were recruited during 2004. Assessment staff conducted in-person interviews and informed consent as part of their standard process. UCLA-trained staff conducted a 30-minute follow-up telephone interview three months after intake with those randomly selected for follow-up. Participants were paid $10. The Institutional Review Boards at UCLA and at the California Health and Human Services Agency approved all study procedures.

2.2. Participants

The present study includes 1,057 Proposition 36 clients who enrolled into the TSI study during its first year and who completed both the intake assessment and the three-month follow-up interview. Included were 207 Blacks, 274 Hispanics, and 576 Whites; other ethnic groups were excluded due to small sample size (n=77). Table 1 presents sample characteristics at intake by ethnic group.

2.3. Measures

Independent variables—Problem severity was measured at the baseline assessment with the Addiction Severity Index (ASI). The ASI is a semi-structured instrument that assesses a range of problems including drug and alcohol use, medical and psychiatric health, employment, legal status, and family and social relationships (Brodey et al., 2004; McLellan et al., 1992b; McLellan et al., 1980). Each of these domains yields a composite score ranging from 0 to 1 with higher scores indicating greater problem severity (see McGahan et al., 1986 for additional information on calculating composite scores). The reliability and validity of the ASI have been established in diverse ethnic populations (McLellan et al., 1985).

Covariates—Data on age, gender, employment status, and primary drug use were self-reported. Ethnicity was collected with the question, "Of what racial/ethnic group do you consider yourself?" and respondents could choose multiple categories (1=American Indian or Alaska Native; 2=Asian; 3=Black or African American; 4=Native Hawaiian or Other Pacific Islander; 5=White; 6=Other; 7=Hispanic/Latino). In this study, we included subjects who are White, Hispanic/Latino, or Black/African American.

Dependent variables—Drug treatment placement (outpatient drug-free and residential treatment) was extracted from the California Alcohol and Drug Data System, a database that contains information on participants in alcohol or drug treatment programs maintained by the Department of Alcohol and Drug Programs. Service intensity was calculated by summing the number of times a client received services across respective ASI domains (either in the program or through referrals) during the first three months of treatment. Data was collected with the Treatment Services Review (TSR; McLellan et al., 1992a), an instrument used to record services received by clients during treatment. Information includes the number of professional services received for each of the ASI domains. Both medical (e.g., medication, physician appointment) and psychotherapy services (e.g., group or individual therapy) were documented. Administered at the three-month follow-up, the TSR was expanded to capture parenting/child care, physical or sexual abuse, HIV support, and survival support services (e.g., clothing, food).

2.4. Statistical Analyses

Analyses first compared ethnic differences in various demographic characteristics at intake using chi-square tests for categorical measures and ANOVA/GLM with Duncan grouping for continuous measures. Next, logistic regression was used to examine the likelihood of outpatient drug treatment placement (1=outpatient vs. 0=residential), adjusting for several covariates. In this model, ethnicity was included as a predictor, as well as the interaction of ethnicity and drug severity (high vs. low in ASI drug use severity score). We then examined ethnic differences in services intensity and other outcomes, using chi-square tests and ANOVA/GLM with Duncan grouping. McNemar's test for paired samples was used to test for change in employment status from baseline to follow-up. A second logistic regression analysis examined receipt of services (1=received that service vs. 0=did not receive that service), including ethnicity as a predictor and adjusting for covariates. All data analyses were conducted with Statistical Analysis System 9.0 (SAS Institute, 1990).

3. Results

3.1. Pre-treatment Characteristics

As shown in Table 1, slightly more than half of the sample was White (54.5%), followed by Hispanic (25.9%) and Black (19.6%) and, when comparing the characteristics of the three groups, several similarities emerged. For all groups, only about one-quarter were women, most were not married, and few had more than a high school education. Additionally, most were not employed, however more Hispanics had a full- or part-time job (42.1% vs. 35% for Blacks and 38.1% for Whites) and a greater proportion of Blacks were not in the labor force (43.4% vs. 29.5% for Hispanics and 32.8% for Whites), although these differences were not statistically significant. Half of all three groups had never received prior treatment for their substance use and had a similar level of ASI problem severity related to drugs, family, medical, and mental health. Most received outpatient care.

Several significant ethnic differences were also revealed. Black clients were oldest (40.9 years), had the fewest prior convictions (2.6), mostly used cocaine (44.0%) and were most likely to be treated in a residential setting (24.3%). Hispanics were youngest (33.2 years), used methamphetamine (and alcohol) most often (53.7%), and more were entering treatment for the

first time under Proposition 36 (58.8%). Whites had the most prior convictions (4.7) and two-thirds used methamphetamine (65.8%).

Adjusting for age and gender, ASI measures indicated ethnic variation in problem severity in three of the seven domains assessed. Blacks consistently had more serious alcohol, legal, and employment problems. Blacks and Hispanics had significantly higher alcohol and employment severity. Black and White participants demonstrated a greater need for legal services than Hispanics ($p<.05$).

3.2. Predictors of Treatment Placement and Services Intensity

Factors associated with drug treatment placement were analyzed, including an interaction term of drug severity by ethnicity (see Table 2). Placement in outpatient (vs. residential) treatment was less likely for Blacks (vs. White; OR: 0.59, 95% C.I. 0.30-0.89) and individuals with baseline high severity drug use (vs. low severity; OR: 0.30, 95% C.I. 0.14-0.64), and more likely for offenders whose primary problem was drug use (vs. alcohol use; OR: 2.96, 95% C.I. 1.71-5.11). None of the interaction terms were significant.

Across all ethnic groups, services most frequently received were those addressing drug and alcohol problems (Table 3). Services addressing other types of problems, except psychiatric, were few (approximately five times or less). Blacks received significantly more services for psychiatric and HIV problems (14.2, 2.0; respectively) compared to Hispanics (7.0, 0.8; respectively) and Whites (10.9, 1.0; respectively). Although need for HIV services was not measured at baseline, ethnic differences in the level of HIV service intensity may be appropriate, reflecting the increased prevalence of HIV in particular groups (CDC, 2005).

Ethnicity predicted receipt of treatment service in only two of the seven domains assessed (Table 4). Hispanics (vs. Whites) were significantly less likely to receive medical services despite equally high need for such services at baseline (OR: 0.62, 95% C.I. 0.44-0.89). In addition, although baseline ASI severity scores indicate greatest need for legal help, Blacks (compared to Whites) were significantly less likely to receive legal services (OR: 0.51, 95% C.I. 0.27-0.95). Finally, Hispanics and Blacks were not more likely to receive alcohol and employment services regardless of their greater need at intake. Consistent with the literature, females were more likely than males to receive psychiatric services (OR: 1.76, 95% C.I. 1.22-2.55). Individuals in outpatient treatment were less likely to receive services that address legal, alcohol, and drug problems compared with clients in residential modalities. Finally, service intensity was related to need for problems associated with alcohol use, and medical and mental illness.

3.3 Short-term Outcomes

With one exception, short-term outcome measures revealed remarkable similarities across ethnic groups (Table 5). At three months after intake, 20% or fewer of all individuals reported having been arrested, about one-third had used drugs, more than two-thirds were currently in treatment and attending self-help groups, and approximately one-third had remained in treatment for 90 days or more. However, Blacks were significantly less likely than Hispanics and Whites to be employed full-time (11% vs. 26.3% vs. 23.5%, respectively) and more likely to be either unemployed or not in the labor force (67.5% vs. 54.6% vs. 59.1%, respectively). In addition, Blacks significantly worsened in full-time employment status between baseline and follow-up ($p< .05$).

4. Discussion

Our analysis of ethnic variation among Proposition 36 clients revealed many similarities and some differences in treatment experiences and outcomes. At treatment intake, individuals of all ethnic groups had comparable treatment histories and problem severity related to drug use, family, medical and psychiatric issues. However, Hispanics (compared to Blacks and Whites) were more likely to be younger, slightly more likely to be employed, commonly used alcohol or methamphetamines, and had intermediate levels of alcohol and employment problem severity. Blacks tended to be older, not in the labor force, more commonly used cocaine instead of methamphetamine, and had more severe problems with employment (i.e., unemployment), alcohol, and legal issues.

Contrary to expectations, we found only modest ethnic differences in the intensity of drug treatment services received by Proposition 36 clients. Across ethnic groups, the total numbers of services for drug and alcohol abuse were highest, followed by psychiatric services, while services addressing other types of problems were few. However, psychiatric services were more commonly accessed by Blacks and infrequently received by Hispanics despite an equal need at baseline. HIV services were also more frequently used by Blacks. Additionally, Blacks were less likely to receive legal services despite their greater need in this area and Hispanics were less likely to receive medical services despite an equal need among the three ethnic groups. Minor ethnic differences in services utilization have also been reported by other studies (Morgenstern and Bux, 2003; Schmidt et al., 2007; TOPPS-II Interstate Cooperative Study Group, 2003), including a recent examination of methamphetamine abusers receiving drug treatment in California (Niv and Hser, 2006).

Finally, short-term outcomes among Proposition 36 clients were comparable by ethnicity with one exception. Blacks' employment problem severity at intake was significantly higher than that of other groups and employment status among Blacks actually worsened at follow-up, indicating ample room for improvement in this area. Employment has been previously linked to greater treatment retention (Dole and Joseph, 1987; Maddux and McDonald, 1973; McCaul et al., 2001) and improved neuropsychological functioning among recovering addicts (Braunstein et al., 1983). Employment has also been found to be a key predictor of short-term success among Proposition 36 clients (Hser et al., in press). Future programs targeting drug offenders should consider employment services as a useful component of a treatment program, particularly among Black clients.

The present study has several limitations. Most data are based on self-report and their validity may have been affected by under- or over-reporting, misrepresentation, or recall bias. Nevertheless, the instruments are based on standardized instruments that have been widely used in previous studies among populations of a similar nature. Another limitation is that outcomes were assessed at three months after baseline; this length of time may have been too brief to reveal potential ethnic differences. Longer-term research is needed, especially on outcomes such as drug use and treatment retention, which may diverge significantly with longer follow-ups. Finally, the generalizability of findings may be limited to samples comprised of similar drug offenders.

Despite these study limitations, the findings have several important implications and point to future needed research. In the present study, ethnicity does not appear to be a major barrier to receiving care among Proposition 36 clients. Minority groups received a similar or higher level of services compared with Whites in several domains. While there were some ethnic disparities, most evident were discrepancies in care received relative to needs for all groups. Baseline severity was associated with receiving services in some domains (alcohol, psychiatric, and medical) but not others (employment, drug, legal, and family). Notably, the analysis revealed

that Blacks and Hispanics did not receive more alcohol and employment services despite their greater need.

For all ethnic groups, few services besides alcohol and drug treatment services were provided during treatment. Although it is reasonable to expect drug treatment to focus on substance abuse problems, other issues (e.g., unemployment and mental health disorders) can pose significant obstacles to continued treatment participation or maintenance of benefits. Although Proposition 36 specifically stipulates that services should address vocational training needs, clients received minimal employment-related services. Decreased employment among Blacks at follow-up attests to the need for particular improvements in addressing employment-related problems, especially among this population. The mismatch between services needed and received has been previously observed in other studies (Hser et al., 2002). Treatment programs could increase retention and improve outcomes by offering additional services that are targeted toward individual needs or, if indeed these services are already available, reduce barriers to service utilization. Barriers to service utilization reported in the literature encompass economic and logistical issues such as an inability to pay for services, lack of health insurance, being unable to locate a treatment slot, or having no one to care for children while in treatment (Schmidt et al., 2007), which may not be applicable to Proposition 36 clients. Another factor that could further explain the mismatch is related to individual preferences and circumstances, which may vary among ethnic groups due to differences in culture, attitudes, and beliefs. Ethnic minorities may also have had compromised communications with service providers, which could have influenced the amount and quality of care they received. More in-depth studies are needed to better understand the reasons for such ethnicity and culturally-related variations, and how they impact service utilization and related outcomes.

Proposition 36 required a rapid and large-scale shift in California's criminal justice policy and practice, and initial implementation was marked by insufficient resources and limited capacity to adequately handle "high-need" cases (Hardy, Teruya, Longshore, & Hser, 2005; Klein, Miller, Noble, & Speiglman, 2004). As the Proposition 36 program matures into a more permanent system over the next few years, additional information is needed to determine if ethnic disparities are evident in longer term outcomes, in the under- or over-treatment of clients relative to need, and in access to care. Evidence-based research findings on topics such as these can inform improvements to practices regarding drug-abusing offenders by lessening differences due to ethnicity, culture, or other considerations (e.g., gender) and facilitating the efficient use of treatment resources so as to maximize program benefits.

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Table 1

Demographic characteristics at intake

	Black (N = 207)	Hispanic (N = 274)	White (N = 576)	*p* value [1]
Age, mean (SD) [2]	40.9 (9.6) [a]	33.2 (9.6) [b]	36.9 (9.2) [c]	<.001
Female, n (%)	48 (23.2)	63 (23.0)	207 (35.9)	<.001
Marital status, n (%)				<.01
Married	37 (18.4)	45 (16.9)	78 (13.9)	
Widowed/separated/divorced	63 (31.3)	80 (30.1)	235 (41.9)	
Never married	101 (50.3)	141 (53.0)	248 (44.2)	
Employment, n (%)				0.07
Full time	43 (21.2)	69 (25.7)	131 (23.2)	
Part time	28 (13.8)	44 (16.4)	84 (14.9)	
Unemployed	44 (21.7)	76 (28.4)	164 (29.1)	
Not in labor force	88 (43.3)	79 (29.5)	185 (32.8)	
Education, n (%)				.001
0 – 8 years	7 (3.4)	19 (7.1)	17 (3.0)	
9 – 12 years	143 (70.4)	210 (78.9)	421 (74.8)	
13 + years	53 (26.1)	37 (13.9)	125 (22.2)	
Number of prior convictions, mean (SD) [2]	2.60 (18.5)	2.99 (15.3)	4.74 (13.1)	0.11
Primary drug, n (%)[2]				
Alcohol	20 (9.7) [a]	40 (14.6) [b]	27 (4.7) [c]	<.001
Cocaine	91 (44.0) [a]	13 (4.7) [b]	28 (4.9) [b]	<.001
Marijuana	27 (13.0) [a]	39 (14.2) [a]	69 (12.0) [a]	0.65
Heroin	24 (11.6) [a]	27 (9.9) [a]	57 (9.9) [a]	0.77
Methamphetamine	26 (12.6) [a]	147 (53.7) [b]	379 (65.8) [c]	<.001
Other	19 (9.2) [a]	8 (2.9) [b]	16 (2.8) [b]	<.01
Prior treatment for alcohol/drug abuse, n (%)[2]				0.27
Never	110 (53.1)	161 (58.8)	306 (53.1)	
1 or more times	97 (46.9)	113 (41.2)	270 (46.9)	
Drug treatment by modality, n (%)[2]				.03
Outpatient Care	153 (75.7)	234 (85.4)	475 (82.8)	
Residential Care	49 (24.3)	40 (14.6)	99 (17.2)	
Addiction Severity Index, Mean (SD) [3]				
Alcohol	0.15 (0.22) [a]	0.13 (0.19) [a]	0.09 (0.16) [b]	<.0001
Drug	0.13 (0.12) [a]	0.13 (0.11) [a]	0.14 (0.10) [a]	0.20
Employment	0.79 (0.25) [a]	0.74 (0.28) [b]	0.67 (0.30) [c]	<.0001
Family	0.14 (0.20) [a]	0.16 (0.21) [a]	0.17 (0.20) [a]	0.15
Legal	0.28 (0.18) [a]	0.23 (0.18) [b]	0.26 (0.18) [a]	<.05
Medical	0.26 (0.33) [a]	0.26 (0.32) [a]	0.29 (0.34) [a]	0.34
Psych	0.17 (0.21) [a]	0.17 (0.22) [a]	0.20 (0.22) [a]	0.16

[1] Chi-square testing for ethnic differences, unless otherwise noted.

[2] ANOVA or GLM with Duncan grouping to test for ethnic differences (means/numbers with the same letter are not significantly different)

[3] Proc GLM adjusting for age and gender with Duncan grouping to test for ethnic differences (means with the same letter are not significantly different).

Table 2

Logistic regression predicting drug treatment placement (outpatient vs. residential treatment)

Variables	Outpatient treatment	95% CI
Ethnicity		
White	1.00	
Black	0.59*	0.30, 0.89
Hispanic	1.06	0.72, 1.99
Age		
18 – 24	1.00	
25 – 34	1.06	0.60, 1.88
35 – 44	0.78	0.45, 1.34
45+	0.91	0.51, 1.63
Gender		
Male	1.00	
Female	0.88	0.61, 1.27
Employment Status		
Unemployed/Not in labor force	1.00	
Employed	1.02	0.72, 1.44
Primary drug use		
Alcohol	1.00	
Drug	2.96*	1.71, 5.11
Baseline ASI score		
Low Severity Alcohol	1.00	
High Severity Alcohol	0.81	0.57, 1.15
Low Severity Drugs	1.00	
High Severity Drugs	0.30*	0.14, 0.64
Drug Severity by Ethnicity		
Low Severity X White	1.00	
High Severity X White	0.71	0.29, 1.72
Low Severity X Black	1.60	0.79, 3.24
High Severity X Black	1.26	0.44, 3.61
Low Severity X Hispanic	0.56	0.24, 1.34
High Severity X Hispanic	1.42	0.58, 3.45

* p<.05; **p<.01

Table 3

Treatment services intensity

	Black (N = 207)	Hispanic (N = 274)	White (N = 576)	p-value
Services intensity, mean (SD) [1]				
Drug	80.7 (70.2)	74.3 (70.6)	86.8 (79.7)	0.21
Alcohol	42.8 (65.7)	37.0 (56.4)	36.6 (59.9)	0.14
Psychiatric	14.2 (31.9) [a]	7.0 (23.6) [b]	10.9 (30.2) [ab]	<.0001
Survival	5.7 (27.4)	4.8 (28.0)	8.2 (36.5)	0.21
Medical	3.6 (15.5)	2.2 (8.4)	3.4 (11.9)	0.14
Employment	2.4 (8.5)	2.1 (8.7)	2.1 (7.0)	0.56
Family	3.0 (10.7)	1.6 (8.9)	2.4 (8.0)	0.25
HIV	2.0 (7.1) [a]	0.8 (2.0) [b]	1.0 (2.5) [b]	<.0001
Legal	0.8 (5.7)	1.1 (8.5)	1.1 (6.2)	0.32
Physical abuse	0.4 (2.5)	0.9 (6.5)	0.8 (5.3)	0.51
Parenting	0.3 (1.7)	0.4 (3.7)	0.3 (1.9)	0.62
Total Services	155.3 (143.1)	131.5 (131.1)	153.4 (138.6)	0.31

[1] Proc GLM adjusting for age and gender with Duncan grouping to test for ethnic differences (means with the same letter are not significantly different).

Table 4

Logistic regressions predicting receipt of services

Variables	Employment services	Legal services	Alcohol services	Drug services	Medical services	Psychiatric services	HIV services
Ethnicity							
White	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Black	1.06 (0.71, 1.56)	0.51* (0.27, 0.95)	0.77 (0.54, 1.09)	0.84 (0.59, 1.19)	1.06 (0.74, 1.52)	1.21 (0.76, 1.94)	1.37 (0.98, 1.93)
Hispanic	1.03 (0.72, 1.46)	0.63 (0.37, 1.07)	1.01 (0.74, 1.37)	0.77 (0.56, 1.04)	0.62** (0.44, 0.89)	0.73 (0.46, 1.17)	0.80 (0.59, 1.10)
Age							
18 – 24	1.00	1.00	1.00	1.00	1.00	1.00	1.00
25 – 34	0.82 (0.51, 1.33)	1.59 (0.80, 3.21)	1.00 (0.67, 1.51)	1.06 (0.70, 1.59)	0.82 (0.51, 1.32)	0.95 (0.49, 1.84)	0.81 (0.53, 1.22)
35 – 44	1.11 (0.71, 1.75)	1.21 (0.61, 2.42)	1.20 (0.80, 1.78)	1.28 (0.86, 1.91)	1.30 (0.83, 2.03)	1.36 (0.74, 2.50)	1.21 (0.81, 1.80)
45+	1.00 (0.61, 1.64)	1.02 (0.47, 2.19)	0.94 (0.61, 1.45)	1.09 (0.70, 1.68)	1.61 (0.99, 2.59)	1.76 (0.93, 3.33)	0.75 (0.48, 1.17)
Gender							
Male	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Female	1.12 (0.81, 1.53)	1.07 (0.69, 1.67)	0.85 (0.64, 1.12)	1.34 (1.00, 1.78)	1.34 (0.99, 1.80)	1.76** (1.22, 2.55)	0.92 (0.69, 1.22)
Treatment placement							
Residential	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Outpatient	0.88 (0.60, 1.27)	0.58* (0.35, 0.96)	0.42** (0.29, 0.60)	0.46** (0.32, 0.65)	0.96 (0.67, 1.38)	1.29 (0.79, 2.09)	0.43** (0.31, 0.59)
Baseline ASI score (score varies based on domain measured	1.13 (0.67, 1.90)	1.55 (0.48, 5.01)	4.04** (1.87, 8.71)	0.76 (0.22, 2.64)	4.73** (3.13, 7.15)	1.03** (1.03, 1.05)	1.13[1] (0.76, 1.67)

* p<.05

** p<.01

[1] Medical ASI was used

Table 5

Outcomes at three-month follow-up

	Black (N = 207)	Hispanic (N = 274)	White (N = 576)	*p* value[1]
Arrest past three months, (n,%)				0.17
Yes	43 (21.1)	50 (18.3)	88 (15.5)	
No	161 (78.9)	223 (81.7)	480 (84.5)	
Used any drug in the past 30 days, (n,%)				0.78
Yes	72 (34.8)	100 (36.5)	196 (34.0)	
No	135 (65.2)	174 (63.5)	380 (66.0)	
Currently in treatment, (n,%)				0.25
Yes	158 (78.6)	215 (79.3)	470 (83.0)	
No	43 (21.4)	56 (20.7)	96 (16.0)	
Attended self help groups in the past 30 days, (n,%)				0.25
Yes	141 (86.0)	214 (86.3)	463 (89.7)	
No	23 (14.0)	34 (13.7)	53 (10.3)	
Treatment retention, (n,%)				0.35
< 90 days	145 (70.0)	208 (75.9)	419 (72.7)	
> 90 days	62 (30.0)	66 (24.1)	157 (27.3)	
Number of days, Mean (SD)[2]	69.1 (41.7)	67.6 (39.0)	73.2 (37.2)	0.11
Employment, (n,%)[3]				0.01
Full time	21 (11.0)	69 (26.3)	130 (23.5)	
Part time	41 (21.5)	50 (19.1)	96 (17.4)	
Unemployed	47 (24.6)	65 (24.8)	128 (23.1)	
Not in labor force	82 (42.9)	78 (29.8)	199 (36.0)	

[1] Chi-square testing for ethnic differences, unless otherwise noted.

[2] Proc GLM adjusting for age and gender with Duncan grouping to test for ethnic differences.

[3] McNemar's test for paired samples indicates employment changed significantly from intake to follow-up for Blacks ($p<.05$) and no significant change for Hispanics nor Whites ($p>.05$).