

Racially Related Health Disparities and Alcoholism Treatment Outcomes

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Published studies comparing the outcomes of black and white patients with alcohol dependence have produced mixed results. We hypothesized that among alcoholic outpatients blacks would have worse outcomes than whites. A sample of 38 blacks and 136 whites were assessed prospectively at baseline and 6–12 months using a naturalistic study design. At baseline, blacks had less education, employment, and income than whites, and they were less likely to be married. They also were more likely to have family histories of substance abuse, previous episodes of treatment, cocaine use disorders, antisocial personality disorder, and poor physical health. Between baseline and follow-up, blacks received less treatment for alcohol dependence than whites. Such differences would seem to favor worse outcomes which were not found. Blacks, however, reported more social support for sobriety than whites. They also had better rates of study retention than whites, suggestive of either higher levels of motivation or stronger alliances with the treatment center. Future studies of racial differences should include measures of social support for sobriety, motivation for treatment, and treatment alliance.

Key Words: race, ethnicity, alcohol dependence, treatment, outcome.

PUBLISHED STUDIES COMPARING the outcomes of black and white patients with alcohol dependence have produced mixed results. Some studies reported worse treatment outcomes for blacks than whites (Booth et al., 1992; Cohen and Woerner, 1976; Dale and Dale, 1973; Gorsuch and Butler, 1976; McCaul et al., 2001), whereas others found better outcomes for blacks than whites (Rosenheck and Seibyl, 1998; Sansone, 1980; Stack et al., 2000). The reasons for discrepancies between studies are unclear but likely involve differences in sample composition, methods for defining and measuring outcomes, and program characteristics.

The purpose of this study was to evaluate the effects of race (black and white) on measures of treatment outcome among alcoholic outpatients. We hypothesized that blacks would have worse outcomes than whites.

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METHODS

The sample was derived from 316 outpatients with a DSM-IV chart diagnosis of alcohol dependence who were consecutively admitted to a single Midwestern addiction treatment center. Of the 316 patients, 250 (86.2%) prospectively completed baseline measures, and 174 (70%) completed a follow-up assessment at 6 to 12 months. The study sample of 174 patients included 38 (21.8%) blacks and 136 (78.2%) whites. It is interesting to note that blacks were more likely than whites to complete the follow-up assessment (90.5 vs. 65.4%; $\chi^2 = 10.40$; $df = 1$; $p = 0.001$). The mean (SD) follow-up intervals from baseline to outcome assessments were 216 (45) days for blacks and 221 (54) days for whites ($t = -0.514$; $df = 169$; $p = 0.61$).

Patients were nonrandomly assigned to either one of two intensive outpatient programs or to a regular outpatient program on the basis of treatment needs, patient preferences, and insurance approvals. All programs were abstinence based and combined individual, group, and family therapy—tailored to the needs of the individual—as well as elements of 12-step facilitation, relapse prevention, motivational interviewing, and interactional group therapy. For the purposes of this study, treatment was quantified as (1) the total number of days on which a visit occurred, (2) the total number of treatment hours across all visits, and (3) the duration of treatment, calculated as the number of calendar days between the first and last visit.

The following instruments were self-administered at both baseline and follow-up to assess outcomes. The Short Form-36 measured physical and mental health functioning with its physical and mental component summary scores, respectively (Ware et al., 1994). The Brief Symptom Inventory provided another measure of psychiatric severity with its General Severity Index (Derogatis and Melisaratos, 1983). The University of Arkansas Substance Abuse Outcomes Module (Smith et al., 1996) assessed demographics, family history, and alcohol consumption (quantity and frequency in the past 28 days). It also included a 17-item severity scale for substance dependence (scores range from 0 to 17, with higher scores indicating higher severity) and a scale measuring social support for sobriety (range, 3 to 24, with higher scores indicating more social support). In addition to the baseline and follow-up assessments, patients self-administered the computerized Quick Diagnostic Interview Schedule at 1

Table 1. Baseline Comparisons

Variable	Blacks (n = 38)	Whites (n = 136)	p Value
Age (years)	39.3 (9.0)	38.2 (10.6)	0.560
Gender (% male)	63.2	64.0	0.927
Married (%)	21.1	39.7	0.034*
Employed (%)	44.7	79.4	<0.001*
Yearly income (\$)	19,446 (24,654)	51,206 (59,467)	0.003*
Education (years)	11.8 (1.6)	13.8 (2.5)	<0.001*
No driver's license (%)	42.1	22.8	0.018*
No car for use (%)	52.6	12.5	<0.001*
Family history of substance abuse (%)	71.1	41.2	0.004*
More than two previous treatment episodes (%)	31.6	15.4	0.025*
Support for sobriety (range, 3–24)	11.1 (6.8)	8.2 (5.4)	0.018*
Substance dependence severity (0–17)	8.0 (5.1)	7.5 (4.6)	0.543
Drinking days in the past 28 days	11.3 (10.6)	11.8 (9.4)	0.791
Drinks per drinking day in the past 28 days	7.3 (8.6)	7.4 (7.1)	0.951
Lifetime cocaine use disorder (%)	38.2	10.7	<0.001*
Lifetime marijuana use disorder (%)	29.4	26.8	0.764
Psychiatric severity (T score)	61.9 (15.3)	62.3 (13.9)	0.861
Mental component summary score (population mean, 50)	39.8 (20.0)	41.2 (20.0)	0.707
Physical component summary score (population mean, 50)	41.5 (10.0)	46.2 (8.0)	0.003*
Lifetime major depression (%)	29.4	41.1	0.221
Lifetime manic episode (%)	5.9	3.6	0.624 ^a
Lifetime panic disorder (%)	8.8	12.5	0.763 ^a
Lifetime posttraumatic stress disorder (%)	29.4	17.9	0.144
Lifetime generalized anxiety disorder (%)	32.4	15.5	0.030*
Lifetime social phobia (%)	16.7	18.5	0.816
Antisocial personality disorder (%)	26.5	9.8	0.021*

Continuous variables are expressed as mean (SD). Two-tailed independent samples *t* tests and χ^2 analyses were used for continuous and dichotomous variables, respectively, unless noted by a superscript a, which indicates Fisher's exact test.

* *p* < 0.05.

month after baseline to assess for lifetime psychiatric diagnoses (Bucholz et al., 1996).

RESULTS

Baseline Comparisons

No significant differences between the two racial groups were found for age and gender (Table 1). Blacks were less likely to be married and employed, had lower incomes, and completed fewer years of education than whites. They were also less likely to have a driver's license and car available for their use and more likely to have a family history of substance abuse and prior treatment episodes. Despite their marital status, however, blacks endorsed higher levels of social support than whites. No differences between blacks and whites were found for severity of substance dependence, frequency of drinking in the past 28 days, or average drinks per drinking day in the past 28 days. Blacks were more likely than whites to have a lifetime cocaine use disorder. No differences in psychiatric scores were found at baseline, although blacks were more likely than whites to have had a lifetime diagnosis of generalized anxiety disorder and antisocial personality disorder. Blacks also had poorer physical health scores.

Treatment Received

Whites had significantly more treatment visit days and total treatment hours, corresponding to more treatment charges, than blacks (Table 2). More black than white

Table 2. Treatment Received, by Racial Group

Variable	Blacks (n = 38)	Whites (n = 136)	p Value
Total treatment visit days	14.4 (11.3)	21.0 (17.3)	0.007*
Total treatment hours	38.9 (50.5)	59.7 (70.2)	0.044*
Treatment duration (calendar days)	93.0 (70.5)	110.6 (76.9)	0.209
Total treatment charges (\$)	1993 (2136)	3078 (3060)	0.015*
Discharged by 1 year (%)	86.8	80.7	0.386
Irregular discharge (%)	60.5	52.6	0.386
Intensive outpatient program (%)	36.8	46.3	0.298

Continuous variables are expressed as mean (SD). Two-tailed independent samples *t* tests and χ^2 analyses were used for continuous and dichotomous variables, respectively.

* *p* < 0.05.

patients were discharged by 1 year and were discharged irregularly (such as against staff advice or dropping out), although the differences were not statistically significant.

Follow-Up Outcomes

Change scores from baseline to follow-up were calculated for each outcome variable (Table 3). No significant differences between groups were found, although the magnitude of change favored white patients for six of seven variables.

DISCUSSION

There were multiple disparities between black and white alcoholic outpatients at baseline in these preliminary analyses. Blacks had less education, employment, and income than whites, and they were less likely to be married. They

Table 3. Treatment Outcomes Expressed as Change Scores ($t_1 - t_3$)

Variable	Blacks ($n = 38$)	Whites ($n = 136$)	p Value
Days drank in past 28 days	7.3 (10.8)	8.9 (9.6)	0.376
Drinks per drinking day in past 28 days	5.1 (9.2)	6.0 (7.4)	0.553
Psychiatry severity (GSI) score	4.9 (13.2)	9.4 (12.5)	0.054 ^a
SF-36 mental (MCS) score	-10.6 (21.4)	-13.7 (21.3)	0.440
SF-36 physical (PCS) score	2.5 (9.7)	2.9 (9.6)	0.800
Severity of substance dependence	4.9 (6.0)	4.7 (5.7)	0.847
Dysfunction days in past 28 days	1.3 (7.4)	2.7 (6.7)	0.283

Continuous variables are expressed as mean (SD). Two-tailed independent samples t tests and χ^2 analyses were used for continuous and dichotomous variables, respectively.

GSI, General Severity Index; MCS, mental component summary; PCS, physical component summary; SF-36, Short Form-36.

^a Nonsignificant trend ($p < 0.10$).

were also more likely to have had (1) family histories of substance abuse, (2) previous episodes of treatment, (3) cocaine use disorders, (4) antisocial personality disorder, and (5) poor physical health. Between baseline and follow-up, blacks received less treatment for alcohol dependence than whites. Such differences would seem to favor worse outcomes, yet statistically worse outcomes were not found. The similarity in outcomes may have resulted from the small number of black patients in the sample, the use of a single treatment center, or the method of self-report to measure outcomes. Certainly, future studies should survey larger samples of patients across multiple treatment sites with corroborative measures of outcome.

However, two favorable characteristics of the black subsample may have attenuated outcome differences. First, blacks reported more social support for sobriety than whites. Indeed, social support correlated significantly with improvements in both drinking frequency and quantity in blacks ($r = 0.35$, $p = 0.035$; and $r = 0.34$, $p = 0.039$, respectively) but not whites. Second, blacks had better rates of study retention than whites, suggestive of either higher

levels of motivation or stronger alliances with the treatment center. Future studies of racial differences should include measures of social support for sobriety, motivation for treatment, adherence to treatment-associated protocols, and treatment alliance.

REFERENCES

- Booth BM, Blow FC, Cook CA, Bunn JY, Fortney JC (1992) Age and ethnicity among hospitalized alcoholics: a nationwide study. *Alcohol Clin Exp Res* 16:1029-1034.
- Bucholz KK, Marion SL, Shayka JJ, Marcus SC, Robins LN (1996) A short computer interview for obtaining psychiatric diagnoses. *Psychiatr Serv* 47:293-297.
- Cohen M, Woerner M (1976) Variables related to length of stay in day programs for drug abusers. *Am J Drug Alcohol Abuse* 3:303-313.
- Dale RT, Dale FR (1973) The use of methadone in a representative group of heroin addicts. *Int J Addict* 8:293-308.
- Derogatis LR, Melisaratos N (1983) The Brief Symptom Inventory: an introductory report. *Psychol Med* 13:595-605.
- Gorsuch RL, Butler MC (1976) Initial drug abuse: a review of predisposing social psychological factors. *Psychol Bull* 83:120-137.
- McCaul ME, Svikis DS, Moore RD (2001) Predictors of outpatient treatment retention: patient versus substance use characteristics. *Drug Alcohol Depend* 62:9-17.
- Rosenheck R, Seibyl CL (1998) Participation and outcome in a residential treatment and work therapy program for addictive disorders: the effects of race. *Am J Psychiatry* 155:1029-1034.
- Sansone J (1980) Retention patterns in a therapeutic community for the treatment of drug abuse. *Int J Addict* 15:711-736.
- Smith GR, Ross RL, Rost KM (1996) Psychiatric outcomes module: substance abuse outcomes module (SAOM), in *Outcome Assessment in Clinical Practice* (Sederer LI, Dickey B eds), pp 85-88. Williams & Wilkins, Baltimore.
- Stack K, Cortina J, Samples C, Zapata M, Arcand LF (2000) Race, age, and back pain as factors in completion of residential substance abuse treatment by veterans. *Psychiatr Serv* 51:1157-1161.
- Ware JE, Kosinski M, Keller SD (1994) *SF-36 Physical and Mental Health Summary Scales: A User's Manual*. The Health Institute, New England Medical Center, Boston.