

SPIRITUALITY / RELIGIOUSNESS / ALTRUISM AND SUBSTANCE ABUSE TREATMENT OUTCOMES: A COMPARISON BETWEEN BLACK AND WHITE ADOLESCENTS



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Abstract:

Aims: Spirituality and religiousness are strengths of the African American community. This study explores the relationship of these strengths to AOD treatment outcomes. Previous research on adults demonstrated that purpose in life is more strongly related to better treatment outcomes for blacks than whites. The present study is the first to compare black and white substance dependent adolescents and the role of spirituality and religiousness as moderators of treatment outcomes.

Methods: The sample includes 165 substance dependent youth admitted into residential treatment. Inclusion criteria includes stable contact information, specified age range (14-18), provision of written consent, diagnostic diagnosis of a substance use disorder, and medical detoxification. Participants with a major chronic health problem or evaluated as suicidal or homicidal were excluded. Instruments administered at intake include the Daily Spiritual Experiences (DSE) Questionnaire and the Religious Background and Behavior Questionnaire (RBB). Outcomes included the General AA/NA/CA Tools of Recovery (GAATOR) instrument, the Helping Others in Sobriety instrument (SOS), the Adolescent Obsessive Compulsive Drinking Scale (CRV) and the odds of testing positive for drug use while in treatment (POS).

Results: Black youth had higher scores than white youth at baseline on the DSE and RBB but treatment outcomes were mixed; black youth were almost 5 times more likely to test positive for drug use while in treatment and white youth had significantly higher craving scores than black youth at treatment discharge. Logistic and multiple regressions revealed that DSE and RBB had no relationship to CRV or POS. DSE significantly predicted higher GAATOR scores for blacks and whites equivalently. A difference by race approached significance: higher RBB scores were more strongly associated with higher GAATOR scores for whites than blacks ($p=.07$).

Conclusions: While black youth compared with white youth had higher spirituality and religiousness scores at treatment intake, these variables were predictive of higher GAATOR scores for blacks and whites equivalently. These relationships were not moderated by race as hypothesized, suggesting that the interaction of race with spiritual and religious variables may vary between adolescents and adults or that different factors are important in a sample of alcoholics versus a sample with more varied substance dependent diagnoses.

Introduction:

- Spirituality and religiousness predict favorable drinking outcomes in studies of alcoholic adults (Robinson et al. 2010).
- While there are health and socioeconomic disparities between adult Black and White populations upon entry to chemical dependency (CD) treatment, both groups achieve equivalent treatment outcomes (i.e., example; Lowman & Le Fauve, 2003).
- There is evidence that spirituality (measured as purpose in life) is a specific cultural advantage for African American adult alcoholics in achieving favorable CD treatment outcomes (Krentzman, Farkas, Townsend, 2010).
- Spirituality and religiousness have been found to be protective factors for black adolescents in determining their drinking behavior (Bachman, et al., 1981; Herd, 1985; Stark et al. 1982).

This study explores the impact of religiosity/spirituality on drinking and AA affiliation outcomes by race and gender. The drinking outcomes examined were positive urine screen test results and symptom/obsession cravings; AA affiliation outcomes examined were GAATOR scores and AAH scores

Method:

Subjects & Procedures:

- 165 Black (n=41) and White (n=124) adolescent substance dependent youths who participated in a residential treatment program in Cleveland, Ohio.
- Inclusion criteria: current DSM-IV diagnosis for substance dependency; English-speaking; stable address
- Exclusion criteria: current suicidality or homicidality; severe organic impairment
- University Hospitals Case Medical Center Institutional Review Board (IRB) approved
- Medically cleared / free of withdrawal symptoms prior to admission; last use ≥ 3.5 weeks prior to study

- Continuous baseline scores were first centered before model construction.
- Control variables included gender, parents' education, readiness to change, and addiction severity.

Measures:

Predictors:

- Spirituality: Assessed with the 16-item Daily Spiritual Experiences Questionnaire (DSES; Underwood & Teresi, 2002).
- Religiosity: Assessed with the 14-item Religious Background and Behaviors Questionnaire (RBB; Connors, Tonigan, & Miller, 1996).

Outcomes:

- Craving Severity: Assessed with the 14-item Adolescent Obsessive Compulsive Drinking Scale (Deas, Roberts, Randall, & Anton, 2002).
 - Drug use: Assessed by a dichotomous measure of whether the adolescent tested positive for use of any drug during treatment.
 - 12-Step Program Involvement: Assessed with the 24-item General AA Tools of Recovery Scale. (Tonigan, Miller, & Vick, 2000).
 - Prosocial Behaviors: Assessed with the 12-item Service to Others in Sobriety. (Pagano, et al., 2009).
- Statistical Analysis:**
- Univariate comparisons using t test and chi-square test.
 - Forward, step-wise multiple or logistic regression with main effects entered first followed by interaction terms with race and gender.
 - Statistical analyses were performed using SPSS version 17.0.

Background Variable	Categorical Level	Total (N, %)	White (165 (100.00%))	Black (41 (24.85%))
Age	M (SD)	165 (14.087)	15.219 (1.646)	16.146 (1.216)
Gender	Female	79 (47.88%)	55 (44.35%)	24 (58.54%)
Religion	Atheist	16 (9.70%)	16 (12.90%)	0 (0.00%)*
	Agnostic	12 (7.27%)	12 (9.88%)	0 (0.00%)
	Unsure	19 (11.52%)	18 (14.52%)	1 (2.44%)
	Spiritual	64 (38.79%)	45 (36.29%)	19 (46.54%)
	Religious	54 (32.73%)	33 (26.61%)	21 (51.22%)
Grade in School	7 th -8 th Grade	9 (5.59%)	4 (3.28%)	5 (12.82%)*
	9 th -10 th Grade	89 (55.28%)	61 (50.00%)	28 (71.79%)
	11 th Grade+	63 (39.13%)	57 (46.72%)	6 (15.39%)
Learning Disability	Yes	22 (13.33%)	17 (13.71%)	5 (12.30%)
History of Abuse	Sexual	40 (24.24%)	35 (28.23%)	5 (12.30%)*
	Physical	34 (20.61%)	31 (25.06%)	3 (7.32%)*
Legal History	Number of Arrests	2,655 (2,451)	2,815 (2,694)	2,171 (1,412)
	Number of Felonies	412 (2,999)	444 (3,023)	317 (1,614)
	History of Assault	36 (1,82%)	22 (17.74%)	14 (34.15%)*
	History of Robbery	12 (12.27%)	7 (5.65%)	5 (12.30%)*
Parental Education	8 th Grade or Less	9 (5.45%)	5 (4.03%)	4 (2.42%)
	HS Graduate	61 (36.97%)	42 (33.87%)	19 (46.34%)
Single Parent Household	GED+	85 (52.58%)	77 (62.10%)	18 (43.90%)*
	GED-	80 (48.48%)	53 (42.74%)	27 (65.85%)*
Parental Substance Dependency	Yes	96 (58.18%)	75 (60.48%)	21 (51.22%)

* $p<.05$ ** $p<.01$ *** $p<.001$

Substance Variable	Categorical Level	Total (N, %)	White (165 (100.00%))	Black (41 (24.85%))
Alcohol Dependency	Yes	99 (60%)	86 (69.35%)	13 (31.71%)*
Substance Dependency	Yes	158 (98.75%)	118 (98.33%)	40 (100%)
	Stimulants	41 (25.63%)	41 (34.17%)	0 (0%)*
	Cocaine	45 (28.13%)	45 (37.50%)	0 (0%)*
	Narcotics	50 (31.25%)	50 (41.67%)	0 (0%)*
	Hallucinogens	47 (29.38%)	41 (34.17%)	6 (15%)*
	Inhalants	9 (5.63%)	9 (7.50%)	0 (0%)*
	Marijuana	149 (90.30%)	109 (87.90%)	40 (97.50%)
	Translucifers	33 (20.63%)	33 (27.50%)	0 (0%)*
	Total number of dependence diagnoses (M, SD)	3.90 (1.849)	4.38 (2.099)	2.45 (6.835)**
	DSE Score (M, SD)	55.99 (19.305)	53.30 (19.155)	64.14 (12.46)**
RBB Score (M, SD)	28.56 (7.407)	26.105 (14.002)	36.01 (11.73)**	

* $p<.05$ ** $p<.01$ *** $p<.001$

Table 3a. Logistic Regression predicting probability of testing positive for drug use during treatment

Individual predictors	OR	Lower CI	Upper	p
Gender (female = 1, male = 0)	1.065	.510	2.222	.867
Parents' Education (middle school or less = 1, some h.s. or h.s. diploma = 0)	.688	.315	1.501	.348
Race (black = 1, white = 0)	4.797	1.412	16.289	.012
Readiness for Change	.976	.826	1.153	.774
Number of current substance dependence diagnoses	.894	.745	1.073	.228
DSE at baseline	.979	.949	1.010	.184
RBB at baseline	1.012	.972	1.054	.555
Race * DSE interaction	.956	.833	1.096	.515
Race * RBB interaction	1.008	.900	1.130	.885
Gender * Race * DSE interaction	.991	.824	1.191	.923
Gender * Race * RBB Interaction	1.032	.834	1.277	.772

TABLE 3b. Predictors of Craving Severity at Discharge

	b	$SE\ b$	β	p
Constant	11.993	3.948		
Gender (female = 1, male = 0)	-1.393	1.625	-0.79	.393
Parents' Education (middle school education or less = 1; some h.s. or h.s. diploma = 0)	3.547	1.743	.177	.044
Race (Black = 1, White = 0)	-2.803	2.340	-.132	.233
Readiness for Change	-.437	.360	-.112	.227
Number of dependence diagnoses	.432	.432	.102	.319
Baseline craving severity	.113	.077	.146	.142
Baseline DSE	.033	.068	.069	.630
Baseline RBB	-.062	.091	-.101	.495
race x DSE interaction	.066	.252	.051	.795
Race x RBB interaction	.034	.241	.024	.889
Gender x Race x DSE	-.068	.364	-.042	.853
Gender x Race x RBB	-.049	.437	-.023	.911

TABLE 3c. Predictors of AA Involvement at Discharge

	b	$SE\ b$	β	p
Constant	60.376	4.284		
Gender (female = 1, male = 0)	6.461	1.619	.285	.000
Parent's Education (middle school education or less = 1; some h.s. or h.s. diploma = 0)	-1.114	1.739	-.044	.523
Race (Black = 1, White = 0)	.777	2.372	.028	.744
Readiness for Change	.743	.408	.148	.071
Number of dependence diagnoses	.378	.402	.069	.348
Baseline GAATOR	.197	.085	.236	.023
Baseline DSE	.158	.069	.256	.024
Baseline RBB	.048	.095	.061	.612
race x DSE interaction	-.481	2.60	-.286	.066
Race x RBB interaction	.307	.246	.164	.213
Gender x Race x DSE	.217	.371	.103	.559
Gender x Race x RBB	.056	.443	.020	.899

TABLE 3d. Predictors of AA Helping at Discharge

	b	$SE\ b$	β	p
Constant	28.104	3.338		
Gender (female = 1, male = 0)	1.753	1.390	.106	.210
Parent's Education (middle school education or less = 1; some h.s. or h.s. diploma = 0)	-2.791	1.495	-.150	.064
Race (Black = 1, White = 0)	-3.668	2.026	-.184	.072
Readiness for Change	.567	.312	.154	.071
Number of dependence diagnoses	.605	.344	.151	.081
Baseline AAH	.096	.069	.120	.168
Baseline DSE	.010	.059	.023	.860
Baseline RBB	.077	.078	.132	.330
race x DSE interaction	-.478	2.20	-.249	.828
Race x RBB interaction	.162	.209	.118	.438
Gender x Race x DSE	.057	.317	.037	.858
Gender x Race x RBB	.187	.379	.092	.623

Discussion

- Black youth reported higher religious behaviors and spiritual experiences when admitted into treatment than white youth. The higher religiosity/spirituality among black youth did not translate into more improved drinking outcomes as measured by positive urine screens and craving at treatment discharge. Controlling for baseline demographic and addiction severity characteristics, black youth were more likely to have at least one positive urine screen during treatment than white youth.
- With regards to AA affiliation outcomes, higher spirituality at admission led to higher GAATOR scores at treatment discharge for all patients. There was no relationship between baseline religiosity/spirituality and subsequent AAH among either black or white youth. Participation in AAH does not appear to depend upon pre-treatment religiosity/spirituality reports by youth.
- Exploratory analyses with gender revealed no gender by race interactions.
- With regards to model covariates, females demonstrated higher GAATOR scores. Lower parental education was linked to higher craving at treatment discharge.

Clinical Implications

- Spirituality appears to be a background strength for adolescents entering treatment. Females are more receptive to AA affiliation. To improve drinking outcomes among youth, spirituality and involvement in 12-step programs of recovery can be featured in individualized treatment planning.
- AAH activity relevant for all youth in treatment independent of prior levels of religiosity/spirituality, race, gender, or parental education attainment.

Disclosure:

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