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Substance Use Correlates of Depression among African American Male Inmates

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Abstract

Substance use correlates of depressive symptoms among incarcerated adult male African American substance users were examined in the current study. Frequency of drug use was assessed with 12 items specific to an individual's substance use. The Patient Depression Questionnaire (PHQ-9) was used to assess symptoms of depression. Approximately 90% of the sample displayed symptoms of depression ranging from minimal to severe. Regression models revealed that three substance use variables demonstrated a significant predictor of depression, including alcohol (β = . 16, p= .03), hallucinogens (β = − .17, p =.021), and ecstasy (β = − .14, p= .05). The study findings indicate a need to consider the role of specific substances with regard to symptoms of depression. The results are discussed in the context of transition planning for jail inmates.

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Keywords

Jail detainees; African American; males; substance use; depression

There are more than 2.3 million people incarcerated in jails and prisons in the United States (U.S.).[1] African Americans are disproportionately represented in the criminal justice system. In 2013, African Americans represented 13.1% of the general population, yet 36% of the national jail population.[2,3] One in three Black males are likely to be imprisoned during their lifetime as compared to one in six Hispanics and one in seventeen Whites.[4,5]

There are various reasons for the disproportionate representation of African Americans in the criminal justice system, including poverty and disparate sentencing. Changes in policies, specifically "the war on drugs"★ has resulted in mass incarceration targeting individuals with drug offenses.[5] Unfortunately, racial and socioeconomic disparities exist among the incarcerated, as low-income predominantly non-White communities are targeted by the policies enacted.[6,7] Two-thirds of all persons in prison for drug offenses are people of color.[5]

In addition to socioeconomic and racial disparities, health disparities also exist among inmates. Inmates have a higher burden of chronic diseases, as well as mental illness than the general population.[6–8] Although large numbers of individuals remain undiagnosed, some estimates suggest 14.8% of federal inmates, 25.5% of state inmates, and 25% of county jail inmates had at least one mental illness diagnosis.[9] Others have suggested ranges of mental illness occurrence among incarcerated populations to be between 6% and 53.7%.[10] According to the Bureau of Justice Statistics,[11] 64% of jail inmates had a mental health problem. Of those with mental health problems, 26% had multiple arrests, 76% had substance dependence or abuse, and 63% had used drugs in the month prior to their most recent arrest. Among jail inmates, African Americans do not experience a greater burden of mental illness than Whites, yet they do experience differences in treatment in the community prior to arrest.[12] African American jail inmates were found to be less likely to report receiving mental health treatment prior to arrest compared with White inmates.[12] However, when provided with access to treatment while incarcerated, there were no differences in utilization of treatment between African American and White jail inmates.[12] It would stand to reason that race-related differences in treatment persist once an inmate is released from jail and returns to their community because the same barriers to access to treatment are present or may even be exacerbated due to the stigma of incarceration.

Incarcerated individuals eventually return to the community. Approximately eight million people are released from jails and prisons every year in the U.S.[13] Although past research has primarily focused on the over 500,000 annually released from prisons, attention has recently expanded to the roughly seven million people being released from jails.[13] Jails

★The term *war on drugs* has been used in the U.S. since the early 1970s when it was taken as short-hand for the Nixon Administration's campaign for policies making or keeping most recreational drugs illegal as well as conducting military operations and providing military support to slow or halt the drug trade internationally (briefly, policies of eradication, interdiction, and incarceration). In recent years, it has fallen into some disuse due to critiques of its (in)effectiveness and implicit characterization of drug addiction as a crime rather than a disease, as well as questions raised about the relative harmfulness of various banned substances. —Eds.

represent a unique challenge because the incarceration period is shorter and people often cycle in and out of jail. Individuals diagnosed with a mental illness are frequently singled out for special attention in reentry discussions, in part because it is believed that they are at greater risk of recidivism than those without mental illness.[14–16] Previous studies have documented connections among mental illness, substance use, and recidivism.[11,17,18] Inmates with a history of substance abuse are at greater risk for mental illness compared with those who do not have a history of substance abuse.[19] Specifically, those with a history of substance abuse had more suicide attempts, and higher scores for psychoticism and neuroticism, as measured by the Eysenck Inventory.[19] Depressive symptoms are also correlated with a co-occurring substance abuse disorder among inmates.[20] Incarcerated individuals who have been shown to exhibit dual diagnosis of a major psychiatric disorder and a substance abuse disorder have a much higher risk of parole revocation.[21] For those with mental illness, recidivism rates are significantly higher during the first year of parole than for those without psychiatric disorder,[16] and rates were as high as 34% in a sample of parolees attending outpatient psychiatric clinics.[22] Wilson and colleagues[23] examined recidivism patterns over a four-year period for individuals admitted to a large U.S. urban jail system and found individuals readmitted to the jail with a mental illness diagnosis alone had the lowest number of readmissions to jail in the four years after release, with 50% having at least one readmission after their initial release. In contrast, individuals diagnosed with mental illness and substance abuse had the highest number of readmissions to jail, with 68% having at least one readmission during the four years after release.

Consequently, for substance abusers who start the addiction recovery process in prison, re-entering society can offer additional distinct challenges compared with the general population,[24] particularly if they have a history of mental health issues.

Two-thirds of individuals in the general population with depressive symptoms remain undiagnosed.[25] Depression is the leading cause of disability for individuals ages 15–44 years in the U.S.[26] In those over age 18, estimates range from 6.7% to 7.9% of the total U.S. population having a major depressive disorder in a given year, translating into over 14 million adults who are living with major depression in the U.S.[3,11,27] Due to the multiple risk factors previously noted, an incarcerated population may exhibit more symptoms of depression than the general population. In contrast, estimates from jail inmates range from 25% to 30% of these individuals meeting the criteria for major depressive disorder.[11,28,29] However, there remains limited research investigating possible co-morbid depression and substance abuse among incarcerated populations. Limited information is available as to whether specific substances, if any, affect the rate of depression among incarcerated populations. The studies cited previously are limited with regard to the consideration of specific substances used by inmates that may be associated depression symptoms. The current study sought to examine substance use correlates of depressive symptoms in a sample of African American male jail inmates. While African American males are overrepresented among incarcerated populations, studies examining drug use and mental health have not specifically addressed African Americans. The findings from the current study may have implications in effectively planning for adult African American male jail inmates transitioning back into the community by identifying specific substances that are correlates for depressive symptoms.

Methods

Participants were recruited from an urban Southern jail as part of a larger study examining sexual risk-taking behaviors and re-entry. Eligible jail inmates were adult African-American males, sexually active, with a self-reported history of substance abuse, and who would be released in 90 days or less. The length of stay in the jail ranged from 24 hours to two years, with an average stay of two weeks. Research staff worked with jail personnel to identify eligible inmates from among those currently housed at the facility. Participants were first approached by the research staff and provided with a spoken description of the study. Interested inmates were assessed for study eligibility, and if they met the eligibility criteria, they were consented and administered a baseline survey. Due to the length of stay in the facility, some participants provided consent and were surveyed after their release from the facility. These were participants who were usually incarcerated for 48 hours or less. A total of 320 participants were screened and approached for study recruitment. Of those, 203 (63.4%) were enrolled in the study (completing both the consent and baseline questionnaire). A total of 87 (27.2%) participants refused to participate or did not complete the enrollment process. During the consent process, participants were informed that participation in the study would have no bearing on their incarceration.

Participants were provided a $15.00 gift card as an incentive for completing the baseline survey. The incentive was distributed after release from the facility, by a peer educator. All surveys were administered face-to-face in a private location either within the jail or in the community by a member of the research team. The survey took approximately one hour to complete. The study was approved by the institution's Institutional Review Board (IRB).

Outcome measures

Socio-demographic and control variables—The baseline questionnaire included items to assess socio-demographic and other background characteristics of participants. Age, marital status, as well as educational, residential, and incarceration history were assessed and included in analyses for this study.

Frequency of drug use—Frequency of drug use in the three months prior to incarceration was assessed with a research lab-developed, 12-item instrument, specific to an individual drug. These items were used to identify and to yield a quantitative index score of the degree of drug usage. The response scale ranged from 1 = "daily" to 5 = "once a month." Respondents who indicated "never" using each specified drug were coded as a "0."

Depression—The PHQ-9 Patient Depression Questionnaire[30] was used to assess an inmate's symptoms of depression. Total scale scores could range from 0–27, with scores categorized as follows: minimal depression = 1–4; mild depression = 5–9; moderate depression = 10–14; moderately severe depression = 15–19; severe depression = 20–27.

Data analysis

The data were analyzed using Statistical Predictive Analytic Software 18 (PASW, formerly known as SPSS). Descriptive statistics were used to characterize the socio-demographic

attributes of the study sample. Bivariate correlations were conducted among all study variables. The variables that were significant at the bivariate level were retained for multivariate analyses. Relationships between individual age and substance use variables were examined using multiple linear regression models. All models specified self-reported substance use regarding a specific indicator of depressive symptomology from the scaled items as an outcome with substance use (e.g., alcohol, cocaine, crack) as predictor variables. All measures were entered independently into the estimated equations.

Results

Results are provided for 203 study respondents. Inmates ranged from 21 to 66 years of age with the overall mean age of participants in the sample being 43.4 years (*SD* = 9.96 years). Approximately 38% had graduated high school or obtained their GED followed by 34.1% self-identified as having not completed high school. The majority were single (76.7%) and 70.4% reported an average annual income less than $10,000 prior to their recent incarceration. Almost one-third (31.7%) of participants reported they lived in a shelter, rooming house or hotel; 26.9% reported living in their family's home or apartment; and 9.9% were homeless prior to incarceration. Additional information on the demographic profile of the sample is presented in Table 1.

Lifetime alcohol and marijuana use was reported by the vast majority of respondents. Of those who responded, 99.5% (n = 199) had used alcohol in their lifetime and 98.0% (n = 196) had used marijuana in their lifetime. The mean age of first alcohol use was 14.57 years (SD = 4.41) and for marijuana was 15.0 years (SD = 3.21). Approximately 12% (n = 23) reported injection drug use without a doctor's prescription. The frequency of substance use in the three months prior to the current incarceration was highest for alcohol, marijuana, crack cocaine and powdered cocaine. Alcohol use, once a week or more, was reported by 79.4% (n = 158) of respondents. Marijuana use, once a week or more, was reported by 43.7% (n = 86). Crack cocaine and powdered cocaine use, once a week or more, was reported by 43.2% (n = 86) and 17.8% (n = 35) of the respondents, respectively.

The range of depression scale scores for the participants were between 0 and 24 with a mean score of 7.58 (SD = 6.04). This score indicates mild depression. As detailed in Table 2 and determined by the PHQ-9, approximately 11% (n = 21) indicated not experiencing any symptoms indicative of depression.

Preliminary bivariate analysis indicated that age was significantly correlated with marijuana ($r = .38$, $p < .001$) and crack ($r = -.23$, $p < .001$) use. Additionally, education was found to be significantly correlated with tranquilizer use ($r = .14$, $p = .05$). Therefore, age and education were included as covariates in their respective regression models. In an effort to isolate age as a predictor of depression scale scores, it was regressed on each outcome variable independently. Results indicated that age was not a significant predictor of depression scaled items. Upon completion of this preliminary analysis, findings from the regression models demonstrated that alcohol ($\beta = .16$, $p = .030$), hallucinogens ($\beta = -.17$, $p = .021$), and ecstasy ($\beta = -.14$, $p = .054$) were significant predictors of depression and accounted for 7.1% of the variance in the model. These results are presented in Table 3.

Discussion

Estimates suggest that as many as 700,000 of the adults entering jails each year have active symptoms of serious mental illness, and that three quarters of these individuals meet criteria for a co-occurring addictive disorder.[31] The purpose of the current study was to determine the extent to which specific use of substances correlated with depression in a sample of African American male substance using inmates. Our findings note depressive symptoms, ranging from minimal to severe; among 89.5% of study participants who self-reported drug use. Self-reported alcohol, hallucinogen, and ecstasy use were significant correlates of depression among this sample.

The rates of symptoms of depression endorsed by our sample and significance noted for alcohol are not unusual. Although there is a gap in the literature specific to inmate populations, a review of the literature suggests a causal link between alcohol use disorders and major depression.[32] Further, ecstasy users have been found to score higher on the self-reported Beck Depression Inventory.[33,34] An unexpected finding was that cocaine was not significant. It has been documented previously that cocaine is associated with the occurrence of depression.[35–40] We also expected to find that heroin use would be a significant correlate of depression, particularly since studies in the past have demonstrated such a correlation with other populations[41,42] and recently among inmates.[43,44]

Our findings support the contention offered by Steadman and colleagues[45] and Baillargeon, et al.[14] pertaining to the rates of depression and other serious mental illness present in incarcerated populations. The combined rate reported for moderate, moderately severe, and severe depression symptoms was 32.4%. Comparatively, previous studies have reported rates of depression or other psychiatric disorders ranging from 21.4% to 53.7%.[28,46,47]

Although our sample overwhelmingly endorsed depressive symptoms, it is difficult to determine the actual impact that specific substance use had on depressive symptoms in this inmate population. Future studies may consider the exploration of other depressive symptoms and their associations to specific substance abuse variables. Future studies may also expand the scope to symptoms of other mental illnesses, such as anxiety.

A limitation of this study concerns the possibility of biased reporting. Inmates may falsely report perceptions and beliefs, based on the general nature of self-report survey instruments. The main focus of the parent study was not mental health; thus, a more comprehensive assessment instrument was not used and depression was not confirmed with a clinical interview. Another limitation is that information about previous treatment for either mental health or substance use was not collected. Given the high level of recidivism in the sample, information about participants prior treatment in the community and in the correctional facility would be useful in determining if a gap exists in their treatment between jail and the community. It is also important to note that participants in this study were incarcerated for relatively short periods of time, reflecting the revolving door nature of jails for many inmates.

Given all of this, and the nature of the association between depression and substance use, more studies among inmates should be conducted in an attempt to add to our knowledge

about the relationship between depression, recidivism, and substance use treatment. Notwithstanding, it is anticipated that our findings may aid researchers and mental health providers within the criminal justice system with addressing mental health and substance use issues, particularly as addressing them relates to preparing inmates for transition into the community. It is important that those working within the criminal justice system develop partnerships with community organizations to address substance use and mental health issues to reduce recidivism. Correctional personnel may have limited interaction with many jail inmates due to the length of incarcerations. Additionally, due to the length of incarceration, mental health treatment may not be available for jail inmates. Having information on mental health and specific substance use can aid in identifying appropriate community services for inmates upon their release, either by the correctional staff or community organizations providing services to jail inmates.

Conclusions

Despite the limitations, findings in this study provide further evidence of the importance of both the assessment of mental health problems and the understanding of how specific substance use behaviors correlate to mental health problems among jail inmates who will eventually be released into the community. This information can be used to assist in establishing appropriate treatment services for incarcerated populations, particularly those returning to the community. High level of depressive symptoms, as indicated in this study sample, may be common in incarcerated populations in general. Hence, mental health implications are critical and understanding the etiology of substance use and depression could be important to the diagnosis and treatment of depression among incarcerated populations in concert with substance abuse treatment.

Even with this small sample, our study findings lend support to the assertion of a need for a multifaceted system for prevention and treatment with respect to depression and its association with substance use, particularly for African American inmate populations in the United States. Moreover, the jail environment may increase the need for mental health treatment, especially since the majority of inmates will only be incarcerated for short periods of time. In order to serve those returning to the community better and to reduce recidivism, the criminal justice system must prioritize the assessment and treatment of mental disorders and substance use as part of transition planning.

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Table 1

SOCIODEMOGRAPHIC CHARACTERISTICS (%) OF STUDY PARTICIPANTS (N = 203)

	N	%
Education		
8th grade or less	12	5.9
Some high school didn't finish	57	28.2
Graduated HS/GED	77	38.1
Vocational, Trade or Tech. School	16	7.9
Started College, didn't finish	31	15.3
Graduated College	8	4.0
Started post graduate work	1	0.5
Marital Status		
Married	10	5.0
Single	155	76.7
Divorced	22	10.9
Separated	12	5.9
Widowed	3	1.5
Income		
Under $10,000	133	70.4
$10,000–$19,999	28	14.8
$20,000–$29,999	13	6.9
$30,000–$39,999	6	3.0
$40,000–$49,999	4	2.1
+ $50 000	5	2.6
Veteran Status		
Yes	30	17.0
No	146	83.0
First Time Being Jailed		
Yes	7	3.5
No	194	96.5
Residency Prior Incarceration		
Own Home/Apartment	38	19.3
Family's Home/Apartment	53	26.9
Others Home/Apartment	22	11.2
Rooming House/Single Room Hotel	12	6.1
Shelter	52	25.6
Homeless	20	9.9

Table 2

SUMMARY PHQ-9 SCALE CATEGORIES

Category	N	%
None (0)	21	10.7
Minimal (1–4)	49	25.0
Mild (5–9)	63	32.1
Moderate (10–14)	35	17.8
Moderately Severe (15–19)	23	9.1
Severe (20–27)	11	5.5

Table 3

PARTICIPANT'S SUBSTANCE USE FOR THE DEPENDENT VARIABLE OF DEPRESSION SCALE SCORES

Factor	Beta	T	p
Three Months Before You Were Incarcerated …			
How often used alcohol	.612	2.184	.030
How often used marijuana	−.090	−.424	.672
How often used sedatives/ barbiturates	−.224	−412	.681
How often used tranquilizers	−.806	−975	.331
How often used PCP	−1.598	−1.055	.293
How often used hallucinogens	−3.319	−.167	.021
How often used crack	−.042	−.199	.843
How often used powder cocaine	−.534	−1.871	.063
How often used inhalants	−1.509	−1.597	.112
How often used amphetamines	−.733	−.657	.512
How often used ecstasy	1.147	−1.94	.054
How often used heroin	−.862	−1.533	.127