

# A Comparison of Substance Abuse Among Female Offender Subtypes

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The relationship between substance abuse and female criminal offending has been understudied. To aid in clarification of this relation, substance use histories of female offender subtypes were compared. Participants were 152 female prison inmates subgrouped on the basis of offense category: violent ( $n = 79$ ), property ( $n = 39$ ), and drug ( $n = 34$ ). As hypothesized, substance use histories differed across offender subgroups. Violent offenders were most clearly distinguished from other offender subgroups. The data provide evidence linking alcohol, combined cocaine and alcohol, and marijuana misuse with serious violent offending among women and show that violent offenders, compared with other offender subgroups, perceive less association between alcohol consumption and alcohol-related negative consequences.

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Studies report high rates of preincarceration substance abuse by female inmates.<sup>1–4</sup> This body of literature suggests an association between substance abuse and female criminal offending; however, that relationship requires clarification. The need for clarification is reinforced by recent research<sup>5</sup> indicating that female prison inmates and female substance abusers in treatment reported similar substance use histories.

Examining the link between substance use histories and offense type may aid in understanding the association between substance abuse and crime. An existing body of literature suggests that offense type and substance abuse may be related. Both alcohol and cocaine abuse have been linked to aggression and perpetration of violent offenses.<sup>6–13</sup> Further, Salloom and colleagues<sup>14</sup> reported that alcohol and cocaine abusers had a higher likelihood of homicidal behavior than alcohol-only or cocaine-only abusers.

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Although less well studied, marijuana use has been linked to violence.<sup>15–17</sup> Narcotic abuse has been linked to drug-related and property crimes.<sup>18,19</sup> Cordilia<sup>20</sup> also linked alcohol abuse to property crimes.

A major limitation of these studies is that the majority have focused primarily on male subjects. Hence, little is known about substance abuse patterns and offense type among female offenders. Evidence suggesting that female and male crime trends and patterns differ supports the need to clarify these relationships in female samples. For example, nationwide, the number of female inmates is increasing at a faster rate than the number of male inmates.<sup>21</sup> Further, although males represent a greater proportion of all convictions, differences in proportions of convictions for felony violent crimes and property crimes exist between men and women. In 1996, male convicts committed a greater proportion of violent crimes than property crimes (92% versus 77%), whereas female convicts committed a smaller proportion of violent crimes than property crimes (8% versus 23%).<sup>22</sup>

In addition to different patterns of offending, evidence suggests that male and female inmates differ in preincarceration substance abuse. Nunes-Dinis and Weisner<sup>4</sup> categorized more male than female inmates as heavy or problem drinkers, whereas they found no gender differences in drug use. In a study by Peters and colleagues,<sup>23</sup> more women inmates than men reported cocaine as the major problem

substance (74% of women versus 49% of men), whereas men were more likely to report alcohol or a combination of alcohol and other drugs as the major problem substance.

Examining the complexity of substance abuse-offense relationships may help to identify clinically relevant subgroups of female offenders. Thus, the purpose of the present study was to clarify the relationship between patterns of substance abuse and types of serious criminal offending committed by women. A sample of incarcerated female felons was grouped by offense type (i.e., violent, property, or drug offenses) and their preincarceration substance use histories compared. We hypothesized that offense subtypes would have different substance use histories. Based on the literature, we expected that most women incarcerated for violent crimes would report histories of alcohol or cocaine misuse or combined alcohol and cocaine misuse. No hypotheses were made regarding the specific substance use histories of property or drug offenders, although, obviously, we expected that drug offenders would report histories of drug abuse.

## Methods

### Participants

Inmate volunteers were 152 women recruited from Mabel Bassett Correctional Center (Oklahoma City, OK), between July 1994 and December 1995. This 333-bed state prison for women houses convicted felons in minimum, medium, and maximum security settings. On December 31, 1994, the mean age of the general population at this facility was  $34.1 \pm 8.7$  (SD) years and the mean education was  $10.7 \pm 1.9$  years. In the general population, 38.5 percent of the inmates were African American, 6.5 percent were American Indian, 53.5 percent were European American, 1.2 percent were Hispanic, and .3 percent were other. Percentages of general population inmates in each offense category were: 50.3 percent violent offenders, 12.6 percent property offenders, 19.1 percent drug offenders, and 17.9 percent other offenses (e.g., escape, weapons).

Inmates were recruited by use of sign-up sheets, direct recruitment on the prison grounds, and group presentations about the project. Participation was voluntary, and all participants provided written informed consent. In accordance with state regulations, inmates were not compensated for their partic-

ipation; however, light refreshments were served after the sessions. No incentives were offered for participation in the study. This project was approved by the University of Oklahoma Health Sciences Center Institutional Review Board.

### Materials and Procedure

The study was conducted in small groups in a prison conference room. First, trained research assistants explained the nature of the research and the procedures to protect confidentiality and obtained informed consent. Participants then completed a battery of pencil-and-paper questionnaires. The battery included demographic information, the Beck Depression Inventory (BDI)<sup>24</sup>, the Spielberger State Anxiety Inventory (AI),<sup>25</sup> the Shipley Institute of Living Vocabulary and Abstraction Scales (SILS-V, SILS-A),<sup>26</sup> and substance use histories.

### Offense Category

Participants were subgrouped on the basis of the primary offense for their current incarceration, as determined from Oklahoma Bureau of Investigation records. Offense categories were violent (e.g., murder, manslaughter, child abuse, assault, robbery), property (e.g., burglary, larceny, motor vehicle theft, arson, fraud, stolen property), or drug (e.g., possession, trafficking).

### Demographic Information

Demographic information included age, race, education, and usual occupation prior to incarceration. Occupations were coded based on the Occupational Rating Scale.<sup>27</sup> A measure of socioeconomic status (SES) was computed based on the Occupational Rating Scale and years of education.

Comparisons were made to determine whether offense category differed as a function of racial group. Forty-three percent of participating inmates reported their racial group as African American (AA), 7 percent as American Indian (AI), 40 percent as European American (EA), 3 percent as Hispanic (HISP), and 7 percent as Other (OTH). Because only a small number of participants reported being AI, HISP, or OTH, racial groups were collapsed into groups called European American (EA) and minorities (OTH). The OTH group included all subjects self-identified as AA, AI, HISP, and OTH.

**Table 1** Demographic, Psychosocial, and Alcohol Variables by Offense Category

	Violent (n = 79)	Property (n = 39)	Drug (n = 34)	Significance Test
Age (ys)	30.49 ± 7.49	31.72 ± 7.86	30.91 ± 5.40	$F_{(2, 149)} < 1$
Education (ys)	11.81 ± 1.75	11.49 ± 2.93	11.97 ± 1.81	$F_{(2, 146)} < 1$
SES*	27.65 ± 9.35	26.87 ± 10.25	30.65 ± 9.38	$F_{(2, 148)} = 1.60, p = .21$
SILS-V†	14.58 ± 2.15	14.63 ± 1.99	15.01 ± 2.10	$F_{(2, 145)} < 1$
SILS-A‡	13.92 ± 2.82	12.84 ± 2.50	14.11 ± 3.09	$F_{(2, 148)} = 2.46, p = .09$
AI§	56.41 ± 12.99	56.15 ± 9.14	51.56 ± 10.45	$F_{(2, 148)} = 2.24, p = .11$
BDI  ¶	17.34 ± 10.02	14.23 ± 8.36	9.50 ± 6.31	$F_{(2, 149)} = 9.33, p = .0002$
QFI (oz.)#**	9.32 ± 17.81	3.32 ± 8.41	2.56 ± 5.24	$F_{(2, 136)} = 3.64, p = .03$
Years of problem use	8.24 ± 7.51	8.59 ± 6.51	6.90 ± 9.15	$F_{(2, 59)} < 1$
Age at first drink	11.52 ± 5.07	13.85 ± 4.16	12.44 ± 5.36	$F_{(2, 125)} = 2.55, p = .08$
Age at first intoxication	13.82 ± 3.86	15.53 ± 4.45	13.88 ± 4.53	$F_{(2, 121)} = 2.05, p = .13$

\* Socioeconomic Status based on Occupational Rating Scale.<sup>27</sup>

† Shipley Institute of Living Vocabulary Scale.<sup>26</sup>

‡ Shipley Institute of Living Abstraction Scale.<sup>26</sup>

§ Spielberger Anxiety Inventory.<sup>25</sup>

||  $p < .01$ .

¶ Beck Depression Inventory.<sup>24</sup>

# Quantity Frequency Index.<sup>28</sup>

\*\*  $p < .05$ .

### Preincarceration Substance Use History

#### Alcohol Use

Alcohol histories included the Quantity Frequency Index (QFI)<sup>28</sup> for the six months prior to incarceration, years of problem alcohol use, and ages at first alcohol consumption and intoxication. The QFI is a measure of quantity and frequency of alcohol consumption that estimates the average number of ounces of absolute ethanol consumed per day. Participants were asked to report whether they had ever experienced any of a list of 10 alcohol-related consequences. These self-reported lifetime consequences were dichotomously coded for presence versus absence and then divided into three categories. Specific consequences by category were as follows: psychosocial consequences were marital or relationship problems, disapproval of family or friends, prior treatment for an alcohol problem, abusive behavior, and attendance at Alcoholics Anonymous meetings; medical consequences were severe withdrawal symptoms, cirrhosis, blackouts, and passing out; and legal consequences were arrests.

#### Illicit Drug Use

Illicit drug use histories included the respondent's drug of choice (DOC) and years of DOC use, age at first DOC use, and DOC-related consequences. DOC-related psychosocial and legal consequences were similar to those reported for alcohol-related consequences, and medical consequences were withdrawal symptoms and blackouts.

#### Problem Use Status

Participants reported whether they perceived themselves as having a substance use problem. Categories of response choices analyzed were the following: an alcohol problem only, a drug problem only, an alcohol and drug problem, or no substance abuse problem.

#### Statistics

Group comparisons were analyzed with one-way ANOVAs, *t* tests, and chi-square tests, as appropriate. In analyzing frequency data, when the assumptions of the chi-square test were violated, the Fisher's exact test was used. To clarify differences between groups after obtaining a significant *F* test result, we used the Duncan multiple-range test for *post hoc* multiple comparisons. Although multiple statistical tests were conducted on this data set,  $\alpha$  was set at a traditional level of .05 because of the exploratory nature of the study.

### Results

#### Offense Category

Of the 152 inmate participants, 79 (52%) were incarcerated for a violent primary offense, 39 (26%) for a property primary offense, and 34 (22%) for a drug primary offense.

#### Demographic and Psychosocial Variables

Demographic and psychosocial variables by offense category are presented in Table 1. Groups did

not differ in age, years of education, SES, measures of cognitive functioning, or anxiety. However, groups differed significantly in score on the BDI. A *post hoc* analysis of group means (Duncan,  $p < .05$ ) revealed that drug offenders scored significantly lower on the BDI than both violent and property offenders, who did not differ from each other. It should be noted, however, that mean scores on the BDI were not clinically significant in any group.

Offense categories did not differ in racial composition (EA versus OTH;  $\chi^2(2) = 4.9, p = .09$ ). The violent subgroup was composed of 47 percent EA and 53 percent OTH participants, the property group was 26 percent EA and 74 percent OTH, and the drug subgroup was 41 percent EA and 59 percent OTH. Because racial differences across offense groups were not significant, racial differences were not explored further.

**Comparisons Between Sample and General Population Demographics**

Participating inmates were younger than those in the general prison population (mean, 31.04 and 34.14 years for sample and population, respectively;  $z = -6.58, p < .00003$ ) and reported higher education levels (mean, 11.76 and 10.66 years for sample and population, respectively;  $z = 9.49, p < .00003$ ). A comparison of racial compositions of participating and general population inmates approached significance ( $\chi^2(4) = 9.14, p = .06$ ). A comparison of offense categories between participating and general population inmates was significant ( $\chi^2(3) = 22.78, p < .0001$ ). However, when the analysis was repeated without the “other” offense category, the participating inmates did not differ from the general population inmates on percentages convicted of violent, property, and drug offenses ( $\chi^2(2) = 3.14, p = .21$ ).

**Preincarceration Substance Use**

*Alcohol Use Variables*

Alcohol variables by offense category are presented in Table 1. The groups differed in the amount of alcohol consumed during the six months preceding incarceration. A *post hoc* analysis of group means (Duncan,  $p < .05$ ) revealed that violent offenders reported a higher QFI than drug offenders. Property offenders did not differ significantly from either violent or drug offenders. Although the QFIs of violent and property offenders were not significantly different, Table 1 shows that violent offenders reported

drinking almost three times the amount reported by property offenders. Thus, differences in alcohol consumption between violent and other offenders may be of practical importance, if not statistical significance. The groups did not differ significantly in age at first consumption, age at first intoxication, or years of problem use.

The groups reported a similar number of alcohol-related psychosocial and medical consequences ( $F < 1$  and  $F_{(2, 137)} = 1.28, p = .3$ , respectively). Violent, property, and drug offenders reported a mean  $\pm$  SD of  $2.6 \pm 1.72, 2.9 \pm 1.76,$  and  $2.8 \pm 1.75$  psychosocial consequences (range, 0–5) and  $1.3 \pm 1.26, 1.0 \pm 1.24,$  and  $.9 \pm 1.23$  medical consequences (range, 0–4), respectively. However, groups differed on the number of alcohol-related legal consequences reported ( $F_{(2, 137)} = 3.96, p = .02$ ). Note that a *post hoc* comparison of group means (Duncan,  $p < .05$ ) revealed that drug offenders reported more alcohol-related legal consequences (mean,  $0.9 \pm 0.36$ ) than violent (mean,  $0.6 \pm 0.49$ ) or property offenders (mean  $0.6 \pm 0.50$ ), which did not differ from each other.

*Illicit Drug Use*

One hundred ten inmates (72%) reported having a DOC. The most frequently reported was cocaine (51%), followed by marijuana (24%), amphetamines (10%), and other (e.g., opiates, barbiturates, benzodiazepines, hallucinogens; 15%). Groups differed in their reported DOCs (Fisher’s exact test,  $p < .000$ ). As can be seen in Figure 1, violent offenders more frequently reported marijuana as their DOC (39%) followed by cocaine (33%), whereas, property and drug offenders reported a preference for cocaine (72% and 63%, respectively). The groups did not

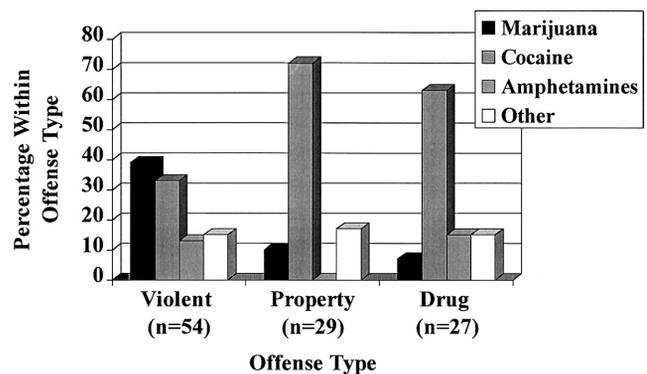


Figure 1. Percentage of inmates in each offense category reporting marijuana, cocaine, amphetamines, or other drugs as drug of first choice (DOC).

differ in their years of DOC use or age at first DOC use ( $F_{(2, 34)} < 1$ ;  $F_{(12, 25)} = 1.24$ ,  $p = .31$ , respectively).

The groups did not differ in DOC-related medical consequences ( $F_{(2, 98)} < 1$ ). Violent, property, and drug offenders reported means of  $0.6 \pm 0.84$ ,  $0.5 \pm 0.63$ , and  $0.4 \pm 0.65$  medical consequences (range, 0–2), respectively. However, the groups differed on DOC-related psychosocial and legal consequences ( $F_{(2, 97)} = 4.75$ ,  $p = .01$ ;  $F_{(2, 97)} = 16.43$ ,  $p < .0001$ ; respectively). *Post hoc* comparisons of group means (Duncan,  $p < .05$ ) revealed that violent offenders reported fewer DOC-related psychosocial consequences ( $2.8 \pm 1.77$ ; range, 0–5) than did property or drug offenders ( $4.0 \pm 1.63$  and  $3.7 \pm 1.71$ , respectively). As expected, drug offenders reported more DOC-related legal consequences ( $0.9 \pm 0.28$ , range, 0–1) than did violent or property offenders ( $0.3 \pm 0.48$  and  $0.3 \pm 0.48$ , respectively).

**Problem Use Status**

The majority of all inmates (74%) reported problem use (i.e., inmates reporting alcohol, drug, or alcohol and drug problems combined). Only 26 percent of inmates reported no substance use problem. Reports of problem use did not differ among offense subtypes ( $\chi^2(2) = .42$ ,  $p = .81$ ). When only problem users were considered, offense subtypes differed in the percentage of inmates reporting use of alcohol only, drug only, or alcohol and drugs (Fisher's exact test,  $p = .0475$ ). As can be seen in Figure 2, few inmates in any group reported an alcohol-only problem: 12 percent of violent offenders, 10 percent of property offenders, and no drug offenders. The most frequently chosen category for violent and property

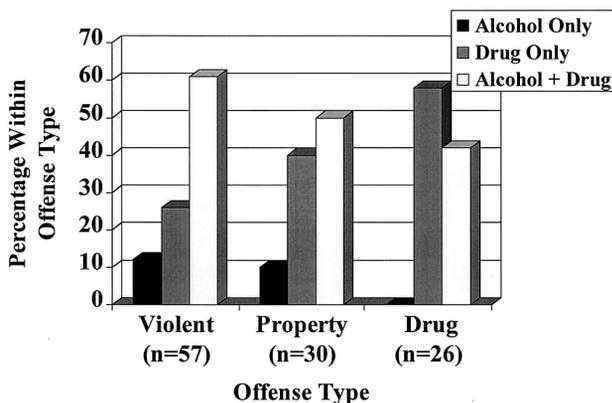


Figure 2. Percentage of inmates by offense type reporting a substance use problem.

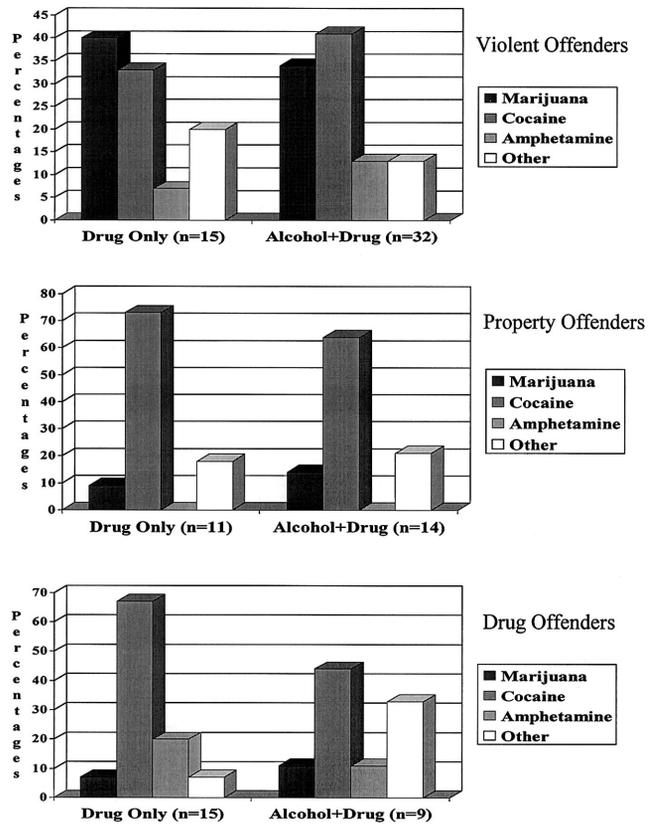


Figure 3. Percentage of inmates endorsing marijuana, cocaine, amphetamines, or other drugs as DOC by drug only or alcohol and drug problem for violent, property, and drug offenders.

offenders was alcohol and drug problems (61% and 50%, respectively), whereas the most frequently chosen category for drug offenders was a drug-only problem (58%).

To assess whether the DOC differed among offense types reporting combined alcohol and drug misuse compared with drug-only misuse, inmates reporting a drug-only problem and inmates reporting a combined alcohol and drug problem were compared as to DOC (Fig. 3). Ninety-six inmates reported a DOC and a drug problem (drug-only or alcohol and drug problem). Inmates reporting a drug-only problem did not differ in DOC across offense groups (Fisher's exact test,  $p = .09$ ). Similarly, inmates reporting an alcohol and drug problem did not differ in DOC across offense groups (Fisher's exact test,  $p = .31$ ). Although the results were not significantly different, it is interesting to note that violent offenders reporting a drug-only problem more frequently reported marijuana as the DOC (40%), whereas violent offenders reporting an alcohol and drug problem more frequently reported cocaine as the DOC (41%).

## Discussion

The present study is consistent with previous findings<sup>1-4</sup> that female inmates have extensive substance misuse histories. The majority of inmates in this sample reported alcohol and drug misuse and reported a substance use problem. Consistent with the findings of Peters *et al.*,<sup>23</sup> the majority of these female inmates reported cocaine as the DOC. As hypothesized, substance use histories differed across offender subgroups. Specifically, violent offenders were most clearly distinguished from other offender subgroups by substance use histories. Violent offenders reported drinking more alcohol than other offender groups and most frequently reported marijuana as the DOC. Further, these data suggest that violent offender subtypes may be associated with substance use patterns.

### Substance Use Histories

We hypothesized that violent offenders would report histories of alcohol or cocaine misuse or combined alcohol and cocaine abuse. Violent offenders reported drinking almost three times as much alcohol as other groups: mean, 9.32, 3.32, and 2.56 ounces of absolute ethanol per day for violent offenders, property offenders, and drug offenders, respectively. A higher percentage of violent offenders compared with property and drug offenders reported an alcohol-only or an alcohol and drug problem. Fewer violent offenders reported a drug-only problem. These findings provide additional evidence linking alcohol misuse and serious violent offending among women.

The results of the present study suggest that subtypes of violent female offenders may be associated with marijuana or cocaine preference. Violent offenders reporting an alcohol and drug problem most frequently reported cocaine as the DOC. These results are consistent with previous findings associating combined cocaine and alcohol abuse with violence.<sup>14</sup> Although behavioral effects are poorly understood,<sup>29</sup> Salloum and colleagues<sup>14</sup> suggested that the association between concurrent alcohol and cocaine abuse and violence may be linked to the formation of co-ethylene. The present study cannot explicitly address this hypothesis, but our findings are not inconsistent with it.

Unexpectedly, the full sample of violent offenders and violent offenders reporting a drug-only problem most frequently reported marijuana as the DOC. Al-

though marijuana traditionally has not been thought to be associated with violence and aggression, recent studies suggest otherwise. For example, Arseneault and coworkers<sup>15</sup> reported that individuals with marijuana dependence are 3.8 times more likely than control subjects to report two or more violent acts or to have a conviction for a violent offense.

### Substance-Related Consequences

Female inmates in previous studies<sup>5,30</sup> failed to acknowledge negative consequences associated with substance use. In the present study, the data suggest that this characteristic may be particularly relevant to violent offenders. Despite reporting much higher alcohol consumption, violent offenders did not report more alcohol-related negative consequences. Further, violent offenders reported fewer DOC-related psychosocial consequences than did property or drug offenders. Of note, drug offenders reported more alcohol-related legal consequences than either violent or property offenders, although drug offenders reported the lowest level of alcohol consumption. Although reports of negative consequences are uncorroborated, comparisons of substance use and negative consequences across offense subgroups suggest that these differences may be related to differences in acknowledgment of consequences. The inmates' failure to note associations between substance misuse and negative consequences may pose a particular challenge in treating substance abuse problems among female inmates, particularly violent offenders.

Several limitations associated with subgrouping on the basis of primary offense should be noted. First, it is presumed unlikely that the conviction offense category is the only category of criminal activity engaged in by the inmate. Interviews with this inmate sample confirm that many of the inmates have extensive criminal histories involving all offense categories. Nevertheless, conviction offense is assumed to be the most representative estimate of criminal activity. This overlap of criminal histories across offense categories might be expected to obscure associations between substance use patterns and offense type. Despite the likely overlap, subtypes based on conviction offense and substance use histories were suggested by the data. Second, conviction offenses frequently differ from the original indictment offenses. The indictment offense is generally considered to be a better descriptor than the conviction

offense. However, with a few exceptions, most conviction offenses are less serious crimes in the same offense category as the indicted offense. For example, an inmate convicted of manslaughter may originally have been indicted for murder; however, both offenses fall within the violent category. Similarly, an indictment for trafficking drugs is more likely to be reduced to a conviction for possession of drugs than to be moved to a property or violent crime category. Because of this limitation, we grouped the inmates according to offense category rather than by specific crime and made no attempt to arrange the offenses according to seriousness.

In summary, these data provide evidence of the heterogeneity of substance use among female prison inmates. These findings suggest that offender subgroups have different substance use histories and therefore may have different treatment needs. More specifically, violent offenders were most clearly distinguished from other offender subgroups and may comprise clinically relevant subtypes. Characterization of these subtypes may be useful to treatment and intervention. These data further indicate that possible failure to recognize the negative consequences of substance misuse may be an impairment among violent offenders. Programming to facilitate the perception of these associations may be particularly relevant to treatment of violent offenders.

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