Co-Occurring Mental Illness, Substance Use Disorders, and Antisocial Personality Disorder Among Clients of Forensic Mental Health Services

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**Objective:** Despite the number of studies investigating co-occurring disorders, and more recently, co-occurring disorders and criminal offending, few studies have considered samples from forensic mental health services. The present study was conducted to investigate the relationship between mental illness, substance use disorders, antisocial personality disorder, and offending. **Method:** The prevalence of co-occurring disorders was investigated in 130 male offenders who had contact with the statewide forensic mental health service in Victoria, Australia. Offense histories and severity of offending were compared among participants diagnosed with a single mental illness (or no mental illness), co-occurring mental illness and substance use, and co-occurring disorders plus antisocial personality disorder. **Results:** The majority of participants had co-occurring mental and substance use disorders; a significant minority met the criteria for antisocial personality disorder. Participants with co-occurring mental illness and substance use disorders, and those who had an additional diagnosis of antisocial personality disorder, were responsible for more serious and frequent offending than those with mental illness alone. **Conclusions and Implications for Practice:** Forensic mental health services must take into account the effect that co-occurring disorders have on clients’ functioning and offending. Those who work with people with psychiatric disabilities and co-occurring substance use disorders must ensure that the substance disorders are addressed to help ensure recovery from the mental illness and to reduce the likelihood of offending.

**Keywords:** mental illness, substance misuse, offending

Increasing attention has been directed toward co-occurring psychiatric and substance use disorders (SUDs) in criminal offending populations. It is now well documented that mental disorders and substance use problems co-occur with great frequency among criminal offenders (Ogloff, Lemphers & Dwyer, 2004). The lifetime prevalence of co-occurring disorders (CODs) has been reported to be as high as 84% in prison settings (Chiles, Von Cleve, Jemelka, & Trupin, 1990), and 74% in forensic psychiatric hospitals (Ogloff et al., 2004). Further, evidence shows that offenders present with higher rates of CODs compared to the general population (e.g., Lurigio et al., 2003; Swartz & Lurigio, 1999). With mounting evidence of high rates of CODs among offenders, several studies have examined the relationship between CODs and offending behavior (e.g., Hartwell, 2004; Smith & Trimble, 2010). Unfortunately, most of the research has focused on prisoners, with little attention paid to people with CODs presenting to forensic mental health services for assessment or treatment.

**Associations Between CODs and Offending Behavior**

The literature reflects a complex clinical picture for individuals with CODs, suggesting that the presence of CODs has adverse and complicating effects, contributing to increased vulnerability to negative outcomes. For instance, individuals with CODs are generally more symptomatic and difficult to treat (Hättenschwiler, Rüesch, & Modestin, 2001). Moreover, the presence of CODs has been linked to a range of offending outcomes, including higher rates of violence (Cuffel, Shumway, Chouljian, & MacDonald, 1994), homicide (Bennett et al., 2011), and an increased likelihood of incarceration and criminal recidivism (Smith & Trimble, 2010).

Although it is generally accepted that the presence of a mental disorder does not necessarily lead to offending behavior or violence (Short, Thomas, Mullen, & Ogloff, 2013), there is consistent evidence that, particularly in combination with SUD, mental disorders do contribute to the likelihood of violence and offending for some individuals (e.g., Fazel et al., 2009; Short et al., 2013).

A number of explanations have been offered to help explain the high prevalence of offending among those with CODs, including that substance use, intoxication, withdrawal, and dependence may exacerbate psychiatric or psychological symptoms (Swanson et al., 2008), thereby increasing the likelihood of offending behavior. It has also been posited that acute substance use influences criminal behavior by disinhibiting behavioral controls (Giancola, 2004), thus increasing the risk of antisocial behavior and violence. Studies investigating the impact of acute substance use at the time of violent offending among people with psychiatric disabilities have...
identified intoxication as a significant risk factor (Wright, Gournay, Glorney, & Thornicroft, 2002).

**Associations Between Co-Occurring Disorders and Violence**

The relationship between mental disorders, substance use, and violence has been studied extensively in community-based samples, providing strong support for an association between the problematic substance use and an increased risk of violence (e.g., Monahan et al., 2001). Findings from Epidemiologic Catchment Area studies (Swanson, 1994) showed that the presence of CODs and SUDs alone were approximately five times more common among those reporting violence compared to those who did not. Further, it was reported that the combined effect of substance abuse and major mental disorder on the likelihood of violence was greater than the effect of either alone. The prevalence of violent behavior among those without a diagnosis of a mental disorder was 2.3% compared to 19.7% among those with SUD, and 22.0% for those with CODs (see also Monahan et al., 2001). Rates of violence for those with mental illness and no SUD was 8.87% for anxiety disorders, 13.85% for major affective disorders and 11.3% for schizophrenia (Swanson, 1994).

The findings discussed above garner further support when considered alongside research specifically examining the risk of violent offending. Case-linkage investigations provide strong support for an association between mental disorder, co-occurring substance misuse, and violent criminality (Short et al., 2013; Wallace et al., 2004).

**SUDs, Mental Disorders, and Antisocial Personality Disorders**

Understanding the association between CODs and offending has been furthered by examining the influence of antisocial personality disorder (ASPD). Consistently high levels of comorbidity between SUDs and ASPD have been reported across studies, including those conducted with the general population (Kessler et al., 1997), samples of individuals with SUDs in treatment (Cottler, Price, Compton, & Mager, 1995), samples of individuals with severe mental illness (Mueser et al., 2012) and samples of offenders (Lewis, 2011). Indeed, the prevalence of comorbid SUD and ASPD is greater than SUDs and any other personality disorder or psychiatric illness (Black, Gunter, Loveless, Allen, & Sieleni, 2010).

Research examining the influence of ASPD and the associations between psychiatric illnesses, substance misuse, and criminal involvement suggest that ASPD forms a critical link between substance use and violence among mentally disordered offenders (Swanson et al., 2008). In fact, it has been suggested that ASPD appears in people with CODs accounts for involvement in the criminal justice system above and beyond the influence of CODs alone (Mueser et al., 2006). As ASPD appears to be such a dominant factor, for this study the effects of ASPD will be analyzed in addition to CODs (i.e., CODs will only include comorbid psychotic/affective/anxiety disorders and SUDs).

**The Present Study**

Relatively few studies have considered the relationship between psychiatric illness, SUDs, and ASPD (Hodgins, Toupin, & Côté, 1996; Moran & Hodgins, 2004; Mueser et al., 2012). Moreover, few studies have investigated people who were being assessed or treated by forensic mental health services. This gap in the literature represents a particular shortcoming given the large number of offenders who receive forensic mental health services, and the importance of such services in the broader mental health and criminal justice systems.

The present study had three aims, specifically, to examine (a) the prevalence of mental disorder and SUD in a sample of offenders being assessed or treated by a statewide forensic mental health service, (b) rates of comorbidity between SUD, psychotic/affective disorders, and ASPD in this sample, and (c) the relationship between CODs and offending variables. In light of previous findings, it was hypothesized that participants with a history of major mental disorder (i.e., psychotic or mood disorder) would be significantly more likely to meet the criteria for SUD compared to those with no history of major mental disorder (Hypothesis 1). Similarly, it was hypothesized that the prevalence of SUD among participants with ASPD would be higher than those with no ASPD (Hypothesis 2), and that participants with ASPD would meet criteria for a greater number of lifetime SUDs (Hypothesis 3). In line with the final aim of this study, the relationship between COD and offending variables was examined. It was hypothesized that participants with CODs would have a higher number of criminal convictions (Hypothesis 4) and higher levels of offending severity (Hypothesis 5) than participants with no disorder or only one disorder. It was hypothesized that participants with CODs would be significantly more likely than those with no CODs to have a history of violent offending (Hypothesis 6), to have used substances prior to offending (Hypothesis 7), to have a history of imprisonment (Hypothesis 8), and to have a history of juvenile offending (Hypothesis 9). Finally, it was hypothesized that offender outcomes would be worst for those with COD and ASPD compared to all other groups (Hypothesis 10).

**Method**

**Participants**

Participants included 130 males aged between 19 and 65 years ($M = 33.24$ years, $SD = 9.95$ years) recruited from the Victorian Institute of Forensic Mental Health (Forensicare) in Victoria, Australia. Victoria has a population of 5.6 million people, with a majority of the population (4.25 million) living in the capital city, Melbourne, where Forensicare is located. A majority of participants were White ($n = 102$, 78.5%), few were married ($n = 18$, 14.1%), and less than half had children ($n = 46$, 36.8%). More than half of the sample obtained their income from unemployment benefits or a disability pension ($n = 73$, 56.6%).

Of the total sample, 77 (59.2%) participants were remanded on bail and court-referred for psychological or psychiatric pre-trial evaluation. The remaining 53 (40.8%) participants were residents at the Thomas Embling Hospital, the state secure forensic psychiatric hospital. These people were hospitalized either as a result of being found unfit (i.e., incompetent) to stand trial, not
guilty by reason of mental impairment, or were prisoners transferred from Victorian prisons for mental health assessment and treatment.

**Measures**

**Sociodemographic information.** A semistructured interview was used to obtain sociodemographic information relating to participants’ age, gender, country of birth, education level, marital status, number of children, living arrangements, employment, and psychiatric history. Participants provided consent for researchers to access their Forensicare files to verify their information.

**Psychiatric diagnoses.** The Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders, 4th ed., revised–Patient Edition (SCID-I/P; First, Spitzer, Gibbon, & Williams, 2002) was used to diagnose current and lifetime major mood, psychotic, anxiety and SUDs were administered. The SCID-I disorders were classified categorically (i.e., present or absent) for both current and lifetime diagnosis. Acceptable levels of diagnostic reliability for the SCID-I have been demonstrated in various populations (Spitzer, Williams, Gibbon, & First, 1992) and it has been shown to have good test–retest reliability in populations of people with psychiatric disabilities (Skre, Onstad, Torgersen, & Kringlen, 1991).

**ASPD diagnoses.** The SCID-II was used to diagnose ASPD. ASPD was classified categorically (i.e., present or absent). Studies have consistently reported good-to-excellent test–retest reliability for diagnosis of ASPD generated by SCID-II in psychiatric and substance-abusing populations (e.g., Kranzler, Tennen, Babor, Kadden, & Rounsaville, 1997).

**Acute substance use at the time of offending.** A semistructured interview was used to obtain data relating to offending while under the influence of alcohol and illicit substances.

**Offending history.** Information relating to history of offending was obtained through both the semistructured interview and official police records. The offending history obtained included the presence, type, and number of index and prior convictions, history of juvenile offending, and history of imprisonment. Offending histories were classified into the following nine offense categories: personal violence (e.g., homicide, causing serious injury), potential violence (e.g., possession of a weapon, threat to harm/kill, stalking), sexual (e.g., rape, child pornography), theft/deception (e.g., burglary, obtain property by deception), property damage (e.g., criminal damage, arson), drug (e.g., use, trafficking of illicit substances), public order (e.g., drunk in public place, prostitution), drive/traffic (e.g., careless driving, uncensored driving), and breach legal order (e.g., fail to answer bail, breaching of a community-based disposition).

**Offending severity.** Severity of offending was determined by using the Cormier-Lang system for quantifying criminal history (Quinsey et al., 2006). This system provides scores for relative seriousness of an offender’s criminal history by assigning an empirically derived weight to each offense according to its relative seriousness. There are two independent scales, violent—range from 2 (e.g., assault) to 28 (e.g., murder)—and nonviolent—range from 1 (e.g., causing a disturbance) to 5 (e.g., public mischief)—by which offenses are categorized according to their severity.

**Procedure**

The current study is part of an ongoing program of research. Approval for the research has been received by Forensicare, the Department of Human Services Human Research Ethics Committee, and the Monash University Standing Committee on Ethics in Research Involving Humans. All participants were administered the assessment measures by postgraduate research assistants, who had received extensive training in administration of study measures.

Community-based participants who were referred for presentence evaluation underwent assessment for this study on the same day as their scheduled presentence evaluation. They were approached directly by the researchers and invited to participate. Participants who were hospitalized at the time of participation were assessed at a time that was arranged with the researchers and testing was conducted over two to three sessions. In addition, the data collection procedures involved a review of the available collateral information (e.g., clinical files, police records, court files).

Participants were provided with an explanatory statement and were invited to sign an informed consent form. Participants were made aware that their participation was voluntary and confidential, and would in no way affect their assessment or treatment. They were also informed that they could withdraw their consent at any time. All participants were financially reimbursed for their time ($25).

**Results**

**Prevalence of Mental Disorders**

The prevalence of psychiatric diagnoses are presented in Table 1. The prevalence of psychotic and mood disorders were roughly equally distributed (i.e., 43.8% and 45.4%, respectively). The prevalence of psychotic and mood disorders were roughly equally distributed (i.e., 43.8% and 45.4%, respectively). Almost half of the sample (43.1%, n = 56) met criteria for ASPD. Given that some people had more than one diagnosis, including ASPD, the total percentages are greater than 100%.

**Prevalence of SUDs**

Results revealed that 77.7% (n = 101) of participants met the criteria for a diagnosis of at least one lifetime SUD, and 33.1% (n = 43) of participants met the criteria for at least one current

| Table 1 |
| Prevalence of Lifetime and Current Psychiatric Diagnoses, Excluding Substance-Induced Disorders |

<table>
<thead>
<tr>
<th>Diagnostic category</th>
<th>Lifetime</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any diagnosis</td>
<td>118</td>
<td>109</td>
</tr>
<tr>
<td>Psychotic disorder</td>
<td>57</td>
<td>56</td>
</tr>
<tr>
<td>Mood disorder</td>
<td>59</td>
<td>43</td>
</tr>
<tr>
<td>Anxiety disorder</td>
<td>46</td>
<td>34</td>
</tr>
<tr>
<td>ASPD</td>
<td>56</td>
<td>43.1</td>
</tr>
</tbody>
</table>

Note. During to their enduring nature, personality disorders, including antisocial personality disorder (ASPD), are not coded as lifetime or current.
Prevalence of SUDs by Mental Disorder Diagnosis

The prevalence of lifetime and current SUD was examined by mental disorder diagnostic category (see Table 3). There were equally high rates of lifetime SUD across each diagnostic category. Of the total sample, 62.3% \((n = 81)\) met criteria for a major mental disorder co-occurring with a SUD. Participants who met criteria for a mood or psychotic disorder were significantly more likely to meet criteria for a lifetime SUD \((n = 81, 84.4\%)\) compared to those with no mood or psychotic disorder \((n = 19, 57.6\%), \chi^2(1, N = 129) = 10.12, p = .001, \text{Cramer’s } V = .280\). Similarly, lifetime SUD was significantly more likely among participants who met criteria for ASPD \((n = 51, 91.1\%)\) than those who did not have ASPD \((n = 50, 67.6\%), \chi^2(1, N = 130) = 10.16, p = .001, \text{Cramer’s } V = .280\). Participants with ASPD also had a significantly greater number of lifetime SUDs compared to those without ASPD, \(t(123) = -4.68, p < .001\). There were no significant differences in the number of lifetime SUDs between those with and without mood/psychotic disorder.

Associations Between CODs and Offending Variables

The most common offense was personal violence \((n = 79, 61.2\%)\), followed by theft/deception \((n = 73, 56.2\%)\), breach legal order \((n = 63, 48.5\%)\), drive/traffic \((n = 55, 42.3\%)\), property damage \((n = 52, 40\%)\), drug \((n = 45, 34.6\%)\), potential violence \((n = 41, 31.5\%)\), public order \((n = 32, 24.6\%)\), and sexual \((n = 22, 16.9\%)\).

The data were explored for differences in offending characteristics by the presence of CODs. The participants were classified into three different groups, depending on the presence of a major mood or psychotic disorder, SUD, and ASPD. The three groups created were: No mental disorder or major mental disorder only \((\text{No COD}; n = 23, 17.7\%)\); co-occurring mental disorder and SUD, but no ASPD \((\text{COD}; n = 42, 32.2\%)\), and co-occurring mental disorder, SUD and ASPD \((\text{COD + ASPD}; n = 39, 30\%)\). For within-group frequencies of each offense category, see Table 4.

The COD + ASPD group had the highest within-group proportions for most offense categories. The No COD group had the highest within-group proportion for potential violence and sexual offenses, and had comparatively lower frequencies for most other offense categories. Chi-square analyses revealed that participants in the COD group were significantly more likely to have a history of personal violence \((n = 32, 76.2\%)\) compared to those in the no COD group \((n = 10, 43.5\%); \chi^2(1, N = 80) = 6.956, p = .008, \text{Cramer’s } V = .33\).

The three groups were further compared on additional offending variables. First, the results revealed that the COD group were significantly more likely to report having used illicit substances immediately prior to their index offense \((n = 21, 51.2\%)\) compared to the no COD group \((n = 3, 13\%); \chi^2(1, N = 64) = 9.162, p = .002, \text{Cramer’s } V = .38\); and the COD + ASPD group \((n = 11, 28.9\%); \chi^2(1, N = 79) = 4.059, p = .044, \text{Cramer’s } V = .23\).

The results showed no significant difference in the number of convictions between the three groups, but significant differences did emerge for both the Cormier-Lang violence and nonviolence offending severity scores. It was found that the COD group had significantly higher scores than the no COD group for both violent \((\text{median COD score} = 29.50, n = 36; \text{median no COD score} = 1.00, n = 22; U = 608.00, z = 3.434, p = .001\)) and nonviolent offenses \((\text{median COD score} = 15.00, n = 36; \text{median no COD score} = 4.50, n = 22; U = 539.50, z = 2.306, p = .021\)). Participants in the COD + ASPD group had significantly higher violence severity scores \((\text{median} = 14.00, n = 35)\) compared to the no COD group, \(U = 507.00, z = 2.041, p = .041\). There were no significant differences in violence or nonviolence severity scores between the COD and COD + ASPD groups.

Significant differences between the groups emerged with regards to history of incarceration. The COD group \((n = 22, 53.7\%)\) was significantly more likely than the no COD group \((n = 5, 21.7\%)\) to have a history of incarceration, \(\chi^2(1, N = 64) = 6.155, p = .013, \text{Cramer’s } V = .31\). Similarly, the COD + ASPD \((n = 20, 52.6\%)\) group was also significantly more likely than the no COD group to have a history of incarceration, \(\chi^2(1, N = 61) = .31\).
As expected, participants who met criteria for a major psychotic or mood disorder were significantly more likely to meet criteria for a lifetime SUD compared to those with no psychotic/mood disorder (Hypothesis 1). The study findings showed that almost one third of the total sample met criteria for co-occurring psychotic/mood disorder, SUD, and ASPD; thereby identifying a subgroup of offenders with complex psychopathology and treatment needs.

A high rate of comorbidity between substance use and personality disorder is a pertinent issue in clinical practice, with evidence that individuals with SUDs presenting with co-occurring ASPD may be less responsive to treatment (Brooner, King, Kidorf, Schmidt, & Bigelow, 1997), and be more likely to discontinue treatment (Kokkevi et al., 1998). It is worth noting that treatment is not impossible for individual with ASPD. There is some evidence that assertive community treatment decreases alcohol use and likelihood of incarceration for those with ASPD compared to standard clinical case management treatment (Frisman et al., 2009). Similarly, some success has been found in methadone maintenance programs for people with ASPD (Alterman, Rutherford, Cacciola, McKay, & Woody, 1996).

Taken together, the data examining the prevalence of mental disorders in this sample of offenders highlight the high likelihood that individuals coming into contact with a forensic mental health service through their criminal involvement will present with CODs. The high prevalence of CODs underscores the need for future research to identify and test effective treatment strategies for this important subgroup of offenders.

### Associations Between CODs and Offending Characteristics

Compared to participants with no CODs, those with CODs were significantly more likely to have a history of violent offending (Hypothesis 6) and to have used illicit substances immediately beforehand (Hypothesis 7). Consistent with research showing that SUD and ASPD frequently co-occur (Verheul et al., 2000), the current study found a high prevalence of comorbidity between these disorders. As hypothesized, participants with antisocial personality were significantly more likely than those with no antisocial personality to meet criteria for a lifetime SUD (Hypothesis 2), and those with ASPD met criteria for a significantly higher number of lifetime SUDs (Hypothesis 3). The study findings showed that almost one third of the sample met criteria for co-occurring psychotic/mood disorder, SUD, and ASPD; thereby identifying a subgroup of offenders with complex psychopathology and treatment needs.

### Prevalence of Co-Occurring Disorders

The current study examined the prevalence of psychiatric comorbidity with SUDs. Among participants with a history of psychotic or mood disorder, the majority met criteria for a lifetime SUD. This rate is consistent with previous reported estimates in a prison setting (Chiles et al., 1990) and in a forensic psychiatric setting (Ogloff et al., 2004). As expected, participants who met criteria for a major psychotic or mood disorder were significantly more likely to meet criteria for a lifetime SUD compared to those with no psychotic/mood disorder (Hypothesis 1).

Consistent with research showing that SUD and ASPD frequently co-occur (Verheul et al., 2000), the current study found a high prevalence of comorbidity between these disorders. As hypothesized, participants with antisocial personality were significantly more likely than those with no antisocial personality to meet criteria for a lifetime SUD (Hypothesis 2), and those with ASPD met criteria for a significantly higher number of lifetime SUDs (Hypothesis 3). The study findings showed that almost one third of the total sample met criteria for co-occurring psychotic/mood disorder, SUD, and ASPD; thereby identifying a subgroup of offenders with complex psychopathology and treatment needs.

### Table 4

Comparison of Within-Group Prevalence of Each Offense Type Across Diagnostic Groups

<table>
<thead>
<tr>
<th>Offending variable</th>
<th>No COD (n = 23)</th>
<th>COD (no ASPD) (n = 42)</th>
<th>COD + ASPD (n = 39)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Use illicit substances beforehand</td>
<td>3</td>
<td>13.0</td>
<td>21</td>
</tr>
<tr>
<td>History of incarceration</td>
<td>5</td>
<td>21.7</td>
<td>22</td>
</tr>
<tr>
<td>History of juvenile offending</td>
<td>7</td>
<td>30.4</td>
<td>6</td>
</tr>
<tr>
<td>Offense type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal violence</td>
<td>10</td>
<td>43.5</td>
<td>32</td>
</tr>
<tr>
<td>Potential violence</td>
<td>10</td>
<td>43.5</td>
<td>9</td>
</tr>
<tr>
<td>Theft/deception</td>
<td>10</td>
<td>45.5</td>
<td>24</td>
</tr>
<tr>
<td>Property damage</td>
<td>5</td>
<td>22.7</td>
<td>18</td>
</tr>
<tr>
<td>Drug</td>
<td>6</td>
<td>27.3</td>
<td>11</td>
</tr>
<tr>
<td>Sexual</td>
<td>5</td>
<td>21.7</td>
<td>4</td>
</tr>
<tr>
<td>Drive/traffic</td>
<td>9</td>
<td>40.9</td>
<td>14</td>
</tr>
<tr>
<td>Public order</td>
<td>6</td>
<td>27.3</td>
<td>6</td>
</tr>
<tr>
<td>Breach legal order</td>
<td>10</td>
<td>45.5</td>
<td>16</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>18.2</td>
<td>20</td>
</tr>
</tbody>
</table>

Note. N = 130; Some participants had more than one offence type; ASPD = antisocial personality disorder; COD = co-occurring disorder.

† Significantly different from no COD, p < .05. * Significantly different from COD (no ASPD), p < .01.

5.653, p = .017, Cramer’s V = .30. Finally, a history of juvenile offending was significantly more likely in the COD + ASPD group (n = 14, 36.8%) compared to the COD group (n = 6, 14.3%), χ²(1, N = 80) = 5.414, p = .020, Cramer’s V = .26.

### Discussion

This study included an assessment for the presence of mental disorders in a sample of offenders presenting to the forensic mental health service in Victoria, Australia. Unsurprisingly, there was an overrepresentation of mental disorders, with almost half of participants meeting criteria for a psychotic or mood disorder. This is consistent with previous research demonstrating that offenders have higher rates of mental disorder compared to the general community (Baksheev, Thomas & Ogloff, 2010). This study further demonstrated a high prevalence of ASPD (43.1%) and a high prevalence of SUDs (77.7%) in offending populations. With respect to the prevalence of ASPD, the results are consistent with the literature. Offender populations have been found to have rates of ASPD from 30% to 70% depending on the sample (Ogloff, 2006). Typically the highest rates have been found in maximum security prison settings.
prior to offending (Hypothesis 7). Further, the presence of CODs
was associated with higher severity in offending (Hypothesis 5), a
higher likelihood of a history of imprisonment (Hypothesis 8), and
a higher likelihood of a history of juvenile offending (Hypothesis
9). The study results did not support the hypothesized association
between CODs and a higher number of prior criminal convictions
(Hypothesis 5).

The results showed that CODs were associated with an in-
creased likelihood of violent offending (Hypothesis 7). Violent
offense history was present in less than half of the No COD group,
but in the majority of the COD and COD + ASPD groups. These
findings are consistent with previous research demonstrating an
increased risk for violent offending when SUD co-occurs with
mental disorder (e.g., Monahan et al., 2001; Swanson et al., 2008).
However, there were not differences in violent offenses between
COD and COD + ASPD groups. This result was contrary to
previous research (Mueser et al., 2006).

Hypothesis 10 was supported because participants with ASPD
and a CODs had the highest rates of offending. The findings
revealed that they had the highest scores for offense severity.

Study Limitations

This study was limited by its reliance on retrospective accounts
of offenders, thereby giving rise to the possibility of deliberate
distortion of responses and recall bias. Further, the source of the
current sample means that it is possible that current SUD may have
been underestimated. Some participants may have been reluctant
to admit to current substance use due to concern that this may
impact on their assessment, care and/or treatment.

Although the possibility that deliberate distortion or inadequate
recall influenced the accuracy of assessment cannot be ruled out,
previous studies have demonstrated evidence of reasonably good
reliability in participant reports of substance misuse (e.g., Gladso,
Tucker, Hawkins, & Vuchinich, 1992) and interview-based diag-
nosis of SUD has accrued substantial criterion validity (Forman,
Svikis, Montoya, & Blaine, 2004). Nonetheless, these limitations
could be addressed in future research via use of prospective
methods of assessment, or through synthesis of data from multiple
sources.

A second limitation of this study was that it did not include any
female participants. Most studies, including this study, have
included all or mostly male samples, thereby precluding analyses of
gender differences. Future research examining the relationship
between SUD and offending should include studies of female
offenders, or an equal proportion of female relative to male par-
ticipants, to identify needs specific to female offenders.

Clinical Implications

These results make a valuable contribution to knowledge of
comorbidity between SUD and mental disorder among offenders,
highlighting that these individuals present with a range of complex
offending risks and needs. The high prevalence of CODs highlight
the need for criminal justice services and associated treatment
providers to routinely assess and consider the interaction between
SUD and psychopathology and develop integrated treatment ap-
proaches tailored to this important subgroup of offenders (Grant
et al., 2004). The first step is to ensure that the mental health
professionals delivering these integrated and specialized services
are appropriately trained in the dual diagnosis area (Ogloff et al.,
2004), as the presence of these disorders may impede treatment
outcomes. The findings of the current study further highlight the
need for collaboration between mental health, substance use, and
criminal justice systems to ensure effective linkages and continuity
in care (Ogloff, Davis, Rivers, & Ross, 2007). Collaboration across
criminal justice, substance use, and mental health systems in the
development and implementation of treatment programs for of-
fenders with CODs is likely to lead to unique opportunities to
achieve positive outcomes in a more enduring way.

Given the increased rates of offending among people with
CODs and ASPD, particular attention should be paid to this group.
Contemporary approaches to offender rehabilitation shows that
highly structured, cognitive-based approaches, with a focus on
short-term reward, has some promise for successfully intervening
with offenders who have been diagnosed with ASPD (e.g., Ogloff
& Wood, 2010). Moreover, assertive community treatment with
case management has been shown to have a positive effect (Fris-
man et al., 2009). Therefore, it is important that offenders be
assessed for the presence of ASPD, particularly given the high
prevalence of the disorder. People with ASPD and CODs should
then be monitored and treatment approaches need to be structured.
Non directive approaches involving dynamic approaches are un-
likely to be successful with this population.

Conclusion

These findings, in combination with those from earlier studies,
suggest that interventions must be tailored to the criminal risk and
mental health needs presented by offenders with CODs. Specifi-
cally, the study findings oppose a dichotomous view of the issues
of criminality, mental disorder, and SUD, with treatments tailored
to address one or the other issue. Rather, greater success is likely
to be obtained with interventions designed to address the complex-
ities of co-occurring issues. Those who work with persons who
have a psychiatric disability with co-occurring SUDs must ensure
that the substance disorders are addressed to help ensure recovery
from the mental illness and to reduce the likelihood of offending.
In addition, whether the criminal justice system can successfully
meet the complex needs of offenders with CODs will depend
largely on the integration of effective treatments.

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