

Comorbidity Among Female Detainees in Drug Treatment: An Exploration of Internalizing and Externalizing Disorders

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Objective: The current study explored the prevalence and comorbidity of major internalizing and externalizing psychiatric disorders in a sample of female detainees participating in drug treatment programs in the nation's largest single-site jail, the Cook County (Chicago) Department of Corrections. **Methods:** A total of 253 women participated in a Needs Inventory. The study incorporated an extensive combination of measures, which captured the women's demographic characteristics and psychological problems as well as their substance use and drug treatment histories and their criminal thinking tendencies. For the purpose of analyses, women were combined into 3 groups: women with substance use problems but no comorbid psychiatric disorders, women with 1 comorbid psychiatric disorder (either internalizing or externalizing), and women with both internalizing and externalizing disorders. **Results:** More than 3/4 of the women were comorbid for another psychiatric (an internalizing or externalizing) disorder. Comorbid disorders were related to lower self-esteem, greater drug use severity, and higher levels of criminal thinking. For example, measures of reported histories of criminal activities and trauma exposure increased with comorbidity. The most critical variables in differentiating between female detainees with no and both internalizing and externalizing disorders were criminal thinking and exposure to trauma. **Conclusions:** The women in the present investigation and other female detainees in drug treatment programs require interventions that focus on both criminal and psychiatric recidivism. These interventions are most effectively delivered in a person-focused recovery framework that provides integrated modules of services.

Keywords: comorbidity, criminal thinking, drug treatment in jails, female detainees, jails

In the criminal justice population, the number of women has grown at a faster rate than the number of men since 2000. For example, from 2000 to 2010, the number of female arrestees increased 11%, whereas the number of male arrestees decreased 4% (Federal Bureau of Investigation, 2010). During this period, the percentage of incarcerated women also rose at a substantial rate—a 31% increase from 2000 to 2011 (Minton, 2012; West, Sabol, & Greenman, 2010). Women are more likely than men to enter jails and prisons for drug-defined or -related offenses but less likely than men to be convicted of violent crimes and to commit violent crimes following reentry (Deschenes, Owen, & Crow, 2006). Hence, women released from correctional facilities have a lower risk of violent recidivism than men released from correctional facilities (Becker & McCorkel, 2011). Nonetheless, compared with male offenders, female offenders report a higher lifetime incidence of mental health problems; serious mental illness (Steadman, Osher, Robbins, Case, & Samuels, 2009); and co-

occurring substance use disorders (Trestman, Ford, Zhang, & Wiestbrock, 2007). Consequently, criminally involved women require a range of services to reduce their psychiatric symptoms and alter their criminal trajectories (Blanchette & Brown, 2006).

This study investigated the comorbidity of substance use disorders (SUDs) and other psychiatric disorders (OPDs) in a sample of female detainees enrolled in a jail-based drug treatment program. *Comorbidity* refers to disorders or classes of disorders that co-occur and often share risk factors, causes, and consequences. Co-occurring disorders are related to medical problems, suicide, unemployment, homelessness, arrests, and incarcerations (Mueser, Noordsy, Drake, & Fox, 2003). People with comorbidity are significantly more likely than people with only an SUD or an OPD to ignore medication orders; commit violent acts; endure recurring episodes of either type of disorder; and suffer from numerous adverse medical, legal, and social sequelae (Chan, Dennis, & Funk, 2008; Mueser et al., 1998; Mueser et al., 2003).

Co-occurring disorders are particularly common among correctional populations (Peters, Bartoi, & Sherman, 2008). Offenders who are comorbid for SUDs and OPDs are more likely to recidivate, engage in violent behaviors, and have infectious diseases than those with only one disorder (Hills, 2000). Female offenders with SUDs frequently experience co-occurring OPDs that contribute to high rates of relapse (Bloom, Owen, & Covington, 2003; Sacks, 2004). They are also more likely than other women (both offenders and nonoffenders alike) to live below the poverty line; be single parents; be homeless; not have a high school degree or

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General Equivalency Diploma; test positive for HIV; and have histories of victimization, trauma, OPDs, and child custody issues (e.g., Belenko, Langley, Crimmins, & Chaple, 2004; Peters & Hills, 1997).

Risk, Needs, and Responsivity

The implementation of gender-informed assessments is the first step in planning interventions for women in correctional settings. The principles of risk, need, and responsivity are critical to the proper evaluation and treatment of criminally involved women and provide the groundwork for developing case management plans for reducing the risk of recidivism (Van Voorhis, Wright, Salisbury, & Bauman, 2010). The risk principle indicates that levels of supervision (or correctional control) should match clients' predicted level of risk. Specifically, offenders judged as exhibiting "high," "medium," or "low" risk should participate in case management programming that is commensurate with those risk levels.

The need principle indicates that an offender's criminogenic needs include criminal attitudes, associates, and thinking, as well as drug use, impulsivity, and family dysfunction. Such needs are associated with violence or criminality and must be evaluated and targeted for services. Other dynamic (mutable) factors such as mental health status, employment, and education, which are not direct determinants of criminal behavior, nevertheless, should be considered to stabilize offenders in the treatment and control process and to measure progress toward prosocial adjustment. Effective correctional treatments ameliorate criminogenic needs, thereby reducing offender risk of recidivism and further criminal involvement. Interventions that fail to address criminogenic needs have little or no effect on risk or propensity for rearrest (Andrews & Bonta, 2010; Andrews & Dowden, 2005; Wong, Gordon, & Gu, 2007).

Female offenders have more serious criminogenic needs than male offenders (Lynch, Fritch, & Heath, 2012). For example, female offenders are more likely than their male counterparts to have been victims of childhood, adolescent, and adult victimization (Blackburn, Mullings, & Marquart, 2008). Histories of victimization and trauma, SUDs, OPDs, and their co-occurrences have greater criminogenic effects on justice-involved women than on justice-involved men (Greiner, Brown, & Skilling, 2012; Kerig & Becker, 2012; Salisbury & Van Voorhis, 2009). To alleviate these problems adequately, justice-involved women require gender-sensitive services that can increase their receptivity to such interventions (Van Voorhis et al., 2010). Indeed, an accumulating body of evidence regarding the most effective strategies for this population suggests that correctional policies and practices should be sensitive to the complex configuration of difficulties, traumatic experiences, and pathways into criminal behavior that are particular to female offenders (Lynch, DeHart, Belknap, & Green, 2013). The current research focuses on female jail detainees in a treatment milieu that provides gender-sensitive and -responsive services to help launch and sustain the recovery process within a group of women who suffer from manifold behavioral health care problems.

The responsivity principle indicates that treatment effectiveness is maximized when interventions are tailored to offenders' intellectual ability, learning style, motivation to change, readiness for treatment, and cultural background. *Responsivity* refers to individ-

ual characteristics that must be incorporated into case management planning to ensure that treatment and monitoring schemes are precisely matched to offenders' strengths and preparedness to benefit from services (Wong & Hare, 2005). Another issue related to responsivity is the degree to which criminogenic needs are being prioritized by treatment providers. Programs that attend to three or more criminogenic needs are more likely to improve outcomes by dealing with an offender's criminal lifestyle (Andrews, Bonta, & Wormith, 2006). Correctional treatments that explicitly address criminogenic needs are generally more effective in changing offenders than those that ignore such needs (Andrews et al., 1990; Andrews & Bonta, 2003). These needs are the focus of the current research.

Clusters of Psychiatric Disorders

The movement toward adopting a dimensional approach to psychiatric diagnoses gained considerable momentum in the revision of the 5th edition of the *Diagnostic and Statistical Manual of Psychiatric Disorders (DSM-5; American Psychiatric Association, 2013)*. A dimensional model of SUDs and OPDs suggests that such disorders are a "product of shared risk factors that lead to abnormalities in intersecting drives such as motivation and reward anticipation, which can be measured (hence 'dimension') and used to place people on one of several spectra" (Adam, 2013, p. 417). Although the dimensional model was never adopted into the current psychiatric nomenclature, the concept of dimensionality is still being debated as a viable option to the present category-based nosology, which suffers from "fuzzy boundaries and large-scale comorbidity [among diagnostic entities]" (Phillips, 2013, p. 148).

Consistent with the notion of dimensionality, clusters of externalizing and internalizing disorders have garnered considerable attention and support in the psychiatric literature as useful frameworks for describing and explaining co-occurring SUDs and OPDs (Eaton et al., 2012; Kessler et al., 2011; Krueger, 1999). Disorders within each cluster are more likely to share common etiologies, specifiers, treatment indications, and prognoses with one another than they do with disorders in other clusters—a finding that has been consistently supported by factor analytic studies (Krueger, 1999; Krueger, Caspi, Moffitt, & Silva, 1998; Krueger, McGue, & Iacono, 2001). A focus on clusters presumes that psychiatric comorbidity emanates from common, underlying psycho-pathogenic processes, which argue for "focusing research on these core processes themselves, rather than on their varied manifestations as separate disorders" (Krueger, 1999, p. 922).

In general and clinical populations, studies have shown that psychiatric diagnoses can be arrayed into three primary clusters or spectra: SUDs; internalizing disorders (e.g., major depressive disorders, generalized anxiety disorders, and traumatic stress disorders); and externalizing disorders (e.g., attention deficit/hyperactivity disorder [ADHD], borderline personality disorder, conduct disorder, antisocial personality disorder, and impulse control disorder) (e.g., Vollebergh, Iedema, Bijl, de Graaf, Smit, & Ormel, 2001). Clusters of co-occurring SUDs and OPDs in the area of forensic risk assessment can be used as variables in tools for predicting recidivism, as well as for informing treatment or intervention plans. Such tools can consist of static (unchangeable) predictors, such as criminal history and early behavioral problems (Wong, Gordon, & Gu, 2007; Taxman, Cropsey, Young & Wexler,

2007) and are more effective than clinical evaluations alone at predicting risk. The most effective of such tools focus on offenders' service needs and their readiness or capability to change; they also measure changes in risk levels over time ([Douglas & Skeem, 2005](#)).

Current Study

Few investigations have elucidated the patterns or severity of co-occurring SUDs and OPDs among female offenders. The current study explored the prevalence and co-occurrence of major internalizing and externalizing OPDs in a sample of female detainees with SUDs who were participating in a drug treatment program in the nation's largest single-site jail. As part of a larger investigation, the study involved women in the Cook County Department of Corrections' gender-specific substance abuse treatment program and drew on data collected in one of the most extensive and comprehensive assessments of women's needs conducted in the jail ([Scott & Dennis, 2010](#)).

Located in Chicago, Illinois on 96 acres of property, Cook County Department of Corrections houses an average of approximately 10,000 detainees each day ([Olson, 2013](#)). Women constitute nearly 13% of the jail's population and are charged mostly with drug, property, domestic violence, driving under the influence/traffic, and prostitution offenses ([Escobar & Olson, 2012](#)). Unlike other studies of the relationships among co-occurring disorders, criminality, and recovery, the present investigation examined how externalizing and internalizing disorders were comorbid with substance use severity and how such disorders were associated with criminal behavior, trauma, and self-esteem. In addition, the present research extends other studies that have found a relationship between externalizing disorders and adult criminality and recidivism (e.g., [Hoeve, McReynolds, & Wasserman, 2013](#); [Mordre, Groholt, Kjelsberg, Sandstad, & Myhre, 2011](#)). The study also included measures of criminal thinking, which can increase the likelihood of both criminal activity and substance use ([Andrews & Bonta, 2010](#)).

Finally, the present research investigated whether comorbid OPDs were correlated with criminal thinking and behavior, as well as self-esteem. Although the former has received considerable and ongoing support in the literature on criminality, the latter has been incorporated in recent studies on comorbidity and recovery. For example, in one investigation, people with comorbid SUDs and OPDs were more likely than those with SUDs alone to report that attention to self-esteem in their treatment experience was helpful ([Bergly, Gråwe, & Hagen, 2014](#)). In another study, self-esteem was related to hopefulness, self-confidence, and competence—all of which were positively associated with success in recovery ([Ferrari, Stevens, Legler, & Jason, 2012](#)). Hence, self-esteem might warrant further consideration in the study of comorbidity and recovery.

Methods

Setting and Participants

The Department of Women's Justice Services (DWJS) in Division 17 of the jail was the site for this investigation. Opened in 1999, the department offers female detainees a variety of gender-

responsive services that address their behavioral health care needs ([Scott & Dennis, 2010](#)). The 271 female detainees, who were receiving these services during the 10 consecutive days of the study, were invited to be interviewed using a client-centered, anonymous Needs Inventory. The inventory was completed by 253 (93%) of the women, with only three (1%) refusing to participate. Another 15 women were unable to be interviewed for various reasons unrelated to the study. More than two thirds of the participants (71%) described themselves as African American and the vast majority (87%) of the women were between 21 and 49 years old.

Procedure

Researchers attempted to interview 100% of the female detainees listed on the DWJS's daily roster during the 10-day period of the study. After obtaining informed consent from prospective participants, research staff at Chestnut Health Services interviewed the women in person in a semiprivate setting inside the jail. Participation was voluntary, and detention officers escorted participants to the interview locations. Interviews lasted approximately 3 hr and were recorded in writing.

Interviewers explained to participants the purpose, procedures, and contents of the Needs Inventory. They also told female detainees that their participation was voluntary and that their responses were confidential and would have no bearing on their status in the DWJS or the jail. The research protocol was reviewed and approved by the National Institutes of Health's Office for Human Research Protection. To further protect participants, the study received a certificate of confidentiality from the National Institute on Drug Abuse. Finally, the study was conducted in accordance with the standards of Chestnut Health System's Human Subject Institutional Review Board, which approved and monitored the data collection protocol.

Measures

Measures of substance use frequency and severity; criminal involvement; and internalizing disorders such as anxiety, trauma, depression, and suicidal ideation were extracted from the Global Appraisal of Individual Needs (GAIN; [Dennis, Titus, White, Unsicker, & Hodgkins, 2003](#); [Scott, Dennis, & Foss, 2005](#)). Measures of trauma were based on combined items from the Lifetime Stressor Checklist—Revised (e.g., [McHugo et al., 2005](#)) and the National Women's Survey ([Kilpatrick et al., 1997](#)), which included indicators of experiencing, witnessing, or hearing about traumatic events. In addition, the Needs Inventory incorporated a measure of self-esteem ([Rosenberg, 1989](#)) and a measure of criminal thinking drawn from the Psychological Inventory of Criminal Thinking Styles ([Walters, 2001, 2007](#)).

Also included were measures of externalizing disorders, such as borderline personality disorder, conduct disorder, antisocial personality disorder, and impulse control problems, which were based on the Structured Clinical Interview for *DSM-IV* Axis I Disorders, Clinician Version (SCID-CV) and the SCID-II ([First, Spitzer, Gibbon, & Williams, 1996](#); [First, Spitzer, Gibbon, Williams, & Benjamin, 1994](#)). The measure of impulse control problems was based on a composite of diagnostic criteria found among Cluster B personality disorders in *DSM-IV-TR* ([American Psychiatric Asso-](#)

ciation, 2001). The GAIN's Behavior Complexity Scale was the primary measure of externalizing disorders. Developed with Rasch measurement analysis and normed with more than 100,000 subjects, the scale has excellent psychometric properties, such as construct validity and internal consistency (Bond & Fox, 2001; Conrad et al., 2013). Women's self-reported arrests and incarcerations were highly correlated with official records from the jail and Illinois State Police and therefore regarded as accurate measures of criminal involvement (e.g., Dennis et al., 2003).

Analyses

If women self-reported criteria that suggested a presumptive diagnosis of one or more internalizing disorders, they were included in the internalizing class. Similarly, if they self-reported criteria that suggested a presumptive diagnosis of one or more externalizing disorders, they were included in the externalizing class. Preliminary analyses identified relatively few detainees with an externalizing diagnosis only. Hence, three groups were formed (cf. Rush et al., 2008). The first group included women with an SUD but no comorbid OPD, the second group included women with one comorbid OPD (either internalizing or externalizing), and the third group included women with both internalizing and externalizing OPDs.

In each class of internalizing and externalizing disorders, self-reported symptoms were used to identify detainees who met the criteria for a diagnosis. The number of classes of disorders (0, 1, or 2) reflected the aggregate presence of symptoms. In previous studies, counting the number of OPD classes, which emphasizes the breadth of conditions, was found to be a better measure of psychiatric severity than counting the number of individual diagnoses, which often includes conditions with substantially overlapping symptoms (e.g., Chan, Dennis, & Funk, 2008).

Two related analyses were performed to differentiate among female offenders in the three basic diagnostic clusters. First, a series of analyses of variance (ANOVAs) was conducted on all the study's quantitative predictor measures. Second, using the variables that emerged as significant in the ANOVAs, stepwise Discriminant Function Analyses were performed to differentiate among the a priori groupings in a multivariate context and to determine whether the predictor variables could accurately identify the comorbidity group membership of the women. As noted above, the internalizing and externalizing groupings were not directly compared because of the low number of participants in the externalizing diagnostic cluster.

Results

Substance Use Frequency, Disorders, and Treatment

Approximately one-quarter of the participants (24%) stated that they had used alcohol or other substances before the age of 15. In addition, more than 70% of the participants had been diagnosed with a substance abuse (14%) or dependence (58%) disorder. However, all the women in the sample were misusing substances and were clearly at risk for abuse albeit subclinical at the time of the assessment (subthreshold symptoms). The most common substance dependence disorders were heroin or opioid dependency (38%), cocaine dependency (37%), alcohol dependency (14%),

and cannabis dependency (8%). The vast majority of participants (92%) reported one (36%) or two or more (56%) previous drug treatment episodes.

Other Psychiatric Disorders

More than one third (34%, $n = 87$) of the participants had one internalizing ($n = 74$) or externalizing disorder ($n = 13$), 42% ($n = 105$) had both an internalizing and an externalizing disorder, and 24% ($n = 61$) had only an SUD. Therefore, 76% of the participants had a co-occurring OPD: internalizing symptoms, externalizing symptoms, or both. Within the internalizing group (13%, $n = 32$), 45% reported symptoms of depression, 19% symptoms of anxiety, and 9% suicidal ideation. In addition, 35% reported trauma-related symptoms. Less than one-quarter of the women (22%, $n = 55$) reported symptoms of any externalizing disorder. Within the externalizing group, 60% reported symptoms of impulse control problems, 50% reported symptoms of borderline personality disorder, 24% reported symptoms of antisocial personality disorder, and 21% reported symptoms of ADHD. Nearly one third (30%) of the female detainees stated that they had received previous treatment for their mental health problems, whereas 8% stated that they had received previous psychiatric care in a hospital or emergency room.

Trauma and Violence Exposure

A total of 75% or more of the female detainees reported having traumatic experiences in the previous year or at some point during their lifetimes. For example, more than 50% of these women reported that they had been emotionally abused (52%) and even more indicated that they had previously been in jail or prison (70%), which can have significant traumatizing effects (e.g., Haney, 2006; Rubinowitz, 2011). Nearly 90% of the participants indicated that someone close to them had died. More than 40% reported having been physically abused or attacked and 26% reported having been raped or forced to have sex by someone they felt close to or knew.

Self-Esteem

To assess self-esteem, the women were asked a series of questions to measure how they felt about themselves. Approximately 70% of the women scored in the "normal" range of the scale (total scores between 15 and 25), whereas 17% scored in the low self-esteem range. More than 90% of the participants felt that they had a number of favorable qualities and were able to "do things as well as most other people." More than 80% of the women believed that they were a "person of worth" and felt positively about themselves, whereas nearly 60% of the women stated that they "respected" themselves. Approximately 70% reported that they were "satisfied" with themselves. More than 35% of the women felt that they "had much to be proud of," and 31% felt that they were "useless at times." A total of 15% felt that they were "all-in-all failures."

Criminal Involvement

Of the female detainees, 21% reported that they had been arrested before the age of 15, and nearly one third (32%) reported that they had been arrested between the ages of 18 and 25. In addition, 67% of the women reported arguing or fighting with someone during the previ-

ous year and 74% reported involvement in an illegal activity during the same timeframe. Specifically, 42% of the women indicated that they had committed property crimes, and 17% indicated that they had committed violent crimes.

More than one half (54%) of the women stated that they had committed crimes related to substances, including selling drugs (28%), driving under the influence (24%), and trading sex for drugs or money (9%). Only 4% of the women reported that they had been gang members, and only 6% reported that they had gambled illegally. Nearly all the participants (96%) stated that they had previously been incarcerated, with 44% reporting that they had been incarcerated between three and nine times, and 9% reporting that they had been incarcerated 10 or more times.

Criminal Thinking

Criminal thinking tendencies related to the initiation and maintenance of a criminal identity and lifestyle were measured. The vast majority of the women (85%) scored in the high (10%) or moderate (75%) range on the Denial of Harm Scale, suggesting a tendency to rationalize or minimize the harm inflicted on others through criminal behavior. Three-quarters of the women scored in the high (7%) or moderate (68%) range on the Problem Avoidance Scale, reflecting a tendency to escape problems by using drugs or engaging in criminal behavior. Nearly one half of the women scored in the high (12%) or moderate (37%) range on the Power Orientation Scale, indicating a predilection to crave power or to seek control over others.

More than 40% of the women scored in the high (18%) or moderate (26%) range on the Entitlement Scale, suggesting a sense of ownership, privilege, and uniqueness to rationalize criminal activities. More than 40% of the women also scored in the high (13%) or moderate (29%) range on the Proactive Criminal Thinking Scale, indicating that criminal behaviors were planned, cold-blooded, and goal-oriented. Nearly 40% scored in the high (12%) or moderate (25%) range on the Sentimentality Scale, reflecting a belief that performing good (prosocial or altruistic) deeds erases the harm inflicted by criminal activities. Similarly, nearly 40% scored in the high (8%) or moderate (29%) range on the Reactive Criminal Thinking Scale, indicating that criminal behaviors were spontaneous, hot-blooded, and impetuous. Moreover, nearly 40% scored in the high (8%) or moderate (29%) range on the Current Criminal Thinking Scale, indicating an acceptance of a general system of criminal beliefs. Finally, nearly 30% scored in the high (6%) or moderate (23%) range on the Cutoff Scale, reflecting a tendency to behave impulsively and to discount future consequences.

Differences Among Women in Diagnostic Clusters

As shown in Table 1, the three comorbidity groups (none, one cluster, or both clusters) differed on all the study's measures except for substance use frequency. Differences were most pronounced on criminal thinking variables, such as reactive criminal thinking (engaging in spontaneous or impulsive criminal activities), current criminal thinking (embracing beliefs that support a criminal lifestyle), discontinuity (being easily distracted), problem avoidance (escaping

Table 1
Means of Predictors by Count of Co-Occurring Disorder Classes

	Types of disorders				F ^a	p
	SUD only (n = 61)	SUD ID (n = 87)	SUD ID/ED (n = 105)	Total (n = 253)		
Self-esteem Scale	41.75	39.64	37.00	39.05 (5.84)	14.92	.001
Count of trauma exposures ^b	5.59	8.09	10.21	8.37 (4.59)	23.24	.001
General Crime Scale	0.93	1.43	2.67	1.83 (2.60)	10.85	.001
Criminal thinking (PICTS)						
General crime thinking	101.58	120.97	134.68	122.02 (30.03)	28.28	.001
Mollification	11.45	13.06	14.59	13.31 (3.84)	14.38	.001
Cutoff	11.18	14.88	17.55	15.10 (5.54)	31.35	.001
Entitlement	12.67	14.99	15.74	14.74 (4.10)	11.91	.001
Power orientation	11.20	14.00	15.17	13.82 (4.34)	18.32	.001
Sentimentality	16.52	17.12	18.49	17.54 (3.95)	5.71	.004
Super-optimism	12.53	14.97	16.38	14.97 (4.30)	17.20	.001
Cognitive indolence	13.67	16.00	18.19	16.35 (4.84)	19.52	.001
Discontinuity	12.37	15.95	18.58	16.18 (5.30)	33.00	.001
Current criminal thinking	19.33	25.19	29.35	25.51 (8.55)	32.89	.001
Historical criminal thinking	18.33	22.50	25.30	22.66 (7.19)	20.74	.001
Proactive criminal thinking	64.77	79.08	86.89	78.89 (22.98)	20.40	.001
Reactive criminal thinking	64.68	84.31	98.84	85.64 (28.51)	34.96	.001
Problem avoidance	15.32	19.57	22.93	19.95 (6.57)	32.21	.001
Infrequency	11.95	14.34	15.19	14.12 (4.54)	10.62	.001
Self-assertion/deception	14.07	17.73	20.08	17.83 (5.88)	23.46	.001
Denial of harm	21.25	22.76	24.60	23.16 (4.66)	11.14	.001
Confusion	10.00	12.22	14.15	12.492 (4.55)	18.37	.001
Defensiveness	23.20	21.16	19.11	20.80 (4.06)	23.54	.001
Fear-of-change	13.92	17.12	19.23	17.23 (5.21)	23.42	.001
Substance Problem Scale ^c	4.33	7.67	10.31	7.96 (5.72)	25.44	.001
Substance Frequency Scale	0.10	0.10	0.14	0.11 (0.15)	2.20	.113

Note. Standard deviation of the total score reported in parentheses.

^a Reflects the omnibus F-test findings. ^b In lifetime. ^c In past year.

from problems through crime and drug use), and cutoff (discounting future consequences of criminal behavior). In nearly all the comparisons, mean scores on the criminal thinking measures increased with comorbidity. Measures of reported histories of criminal activities and trauma exposure also increased with comorbidity. The only scale scores to decrease with increases in comorbidity were measures of self-esteem and defensiveness. Effect sizes were large in comparisons between the “none” and the “both” groups and moderate in comparisons between the “none” and “one” groups and the “one” and “both” groups.

Using the minimization of Wilk’s Lambda as the statistical criterion for variable selection, a stepwise discriminate function analysis was conducted to determine which of the significant variables from the univariate ANOVAs would differentiate among the three comorbidity groups. The results are presented in Table 2. For Function 1 and Function 2, respectively, the group centroids were: no co-occurring disorders (−1.06, 0.01); one cluster of disorders (−0.08, −0.02); and both clusters of disorders (0.66, 0.01).

The first discriminant function was statistically significant $\lambda = .69$ ($\chi^2 = 92.39$, $p < .001$). Univariate analyses showed that the comorbidity groups differed significantly on reactive criminal thinking, $F(2, 246) = 35.84$, $p < .001$ and trauma exposure, $F(4, 290) = 25.36$, $p < .001$. Function 1 separated the “none” group from the “one” and “both” groups. Function 2 failed to separate the “one” group from the “both” group. Overall, the functions based on these criminological, substance use, and other problem areas correctly classified 54% of the female detainees into the three psychiatric comorbidity groups. Specifically, 63% of the women in the “none” group were correctly classified, 33% of the women in the “one” group were correctly classified, and 67% of the women in the “both” group were correctly classified.

Discussion

Histories of Criminal Involvement, Substance Use, and Treatment

Female detainees had extensive histories of offenses and criminal justice involvement. The overwhelming majority had been previously incarcerated, with more than one half reporting three or more prior stints in jail or prison. Many began using substances early in their lives, which compounds the risk for addiction (e.g.,

Warner & White, 2003). A large percentage met the criteria for an SUD. In addition, more than nine out of 10 had participated in drug treatment, some in repeated episodes of care, underscoring the recalcitrant nature of addiction (National Institute on Drug Abuse, 2010). However, a substantially lower percentage of the women reported having participated in mental health treatment.

Comorbidity

More than three-quarters of the women were comorbid for an SUD and an internalizing or externalizing disorder. The former consisted of symptoms of anxiety, depressive, or trauma-related disorders and were more common than the latter, which consisted of symptoms of impulse control, attention deficits, and characterological disorders. These results—as well as those of numerous other studies—indicate that the rates of serious mental illness reported in samples of the jail population are higher than those reported in samples of the general population (James & Glaze, 2006; Teplin, 1990). The present study also suggests that comorbidity might be better viewed in terms of dimensionality and degrees of severity based on the number of co-occurring conditions rather than as simplistic, categorical, or dichotomous clinical formulations (e.g., Bentall, 2006). As our findings indicate, more comorbid disorders are related to lower self-esteem, greater drug use severity, and higher levels of criminal thinking, suggesting that the extent of these poor outcomes increased with the extent of co-occurrence among SUDs, internalizing disorders, and externalizing disorders.

Within the general and correctional populations, co-occurring disorders are the expectation not the exception (Kessler et al., 2011). Within jail populations, multiple morbidities are common and include a variety of SUDs and OPDs (both clinical syndromes and personality disorders), as well as a variety of medical conditions and a range of criminal tendencies (Swartz & Lurigio, 1999). As noted in the introduction, reflections on the development of *DSM-5* underscored the nebulosity and dubious validity of diagnostic entities, which have been characterized as descriptive rather than clear-cut diagnostic categories (Frances, 2013). Indeed, the initial plan for *DSM-5* was to institute a paradigm shift from categorical to dimensional models of mental disorders, particularly with respect to personality disorders (Greenberg, 2013). The results of this investigation hint at the usefulness of such an approach. Thus, as the current results suggest, providers in drug treatment programs can begin to arrive at useful diagnostic impressions by situating clients into one or both clusters for interventions and services.

Gender Responsivity

Gender-sensitive approaches are crucial to the success of treating female detainees with SUDs, OPDs, or their co-occurrence. Integrated treatment programs for women must address their histories of physical, emotional, and sexual abuse as well as parenting and family reunification issues (Sacks, 2004). The women in this study had experienced considerable trauma in their lifetimes and in the months before they entered the jail, including episodes of lost pregnancies, previous incarcerations, emotional abuse, and interpersonal and sexual violence perpetrated by intimates and strangers. Furthermore, the number of such episodes was one of only two

Table 2
Stepwise Discriminant Analysis Results

	Function 1	Function 2
Eigen value	0.457	.000
Percent of variance	.9997%	.03%
	Function 1 through 2	Function 2
Wilks' Lambda	0.69	1.00
χ^2	92.39	0.04
df	4	1
p	<.001	0.852
	Function 1	Function 2
Structure matrix		
Reactive criminal thinking	.799	−.602
Count of lifetime trauma exposures	.617	.787

factors able to distinguish among women with none, one, or both types of disorders comorbid with SUDs.

The benefits of jail-based treatments diminish unless they are accompanied by postrelease services. Re-entry services are an integral component of treating female detainees with co-occurring disorders, helping sustain their progress after release. Thus, the continuation of treatment for female detainees during the postrelease period is critical for maintaining detainees' health and sobriety (e.g., Peters & Matthews, 2002). For example, a study of former recipients of DWJS services who then participated in a specialized probation program for women in recovery found that they were less likely to relapse and more likely to complete probation successfully, compared with former recipients who were sentenced to standard probation services only (Lurigio, Stalans, Roque, Seng, & Ritchie, 2007).

Criminal Thinking

Univariate analyses showed that the women scored in the moderate to high range on most of the criminal thinking scales, which could place them at higher risk for continued criminal activities. A history of antisocial behaviors, antisocial personality patterns, antisocial cognitions, and antisocial associates constitute the "big four" predictors of recidivism. The current study included mostly the cognitive elements of this composite of factors. Many of the female detainees endorsed these criminogenic beliefs and tendencies, such as impulsiveness, narcissism, callous disregard for others, and rationalizations of criminal behaviors and a discounting of their consequences (Andrews et al., 2006). The combination of these attitudes, values, and beliefs was the most powerful differentiating factor among the women in the three comorbidity groups.

The failure to address thought patterns, using cognitive-behavioral and other kinds of interventions—even in highly effective psychiatric or drug treatment programs—will invariably do little to reduce recidivism (Fisher, Silver, & Wolff, 2006). Therefore, behavioral health care practitioners in jails should consider incorporating into addiction and mental health services techniques to reduce criminogenic thinking, beliefs, and attitudes, which are among the most consistent and significant predictors of recidivism (Maruna & Copes, 2005; Walters, 2012). The amelioration of criminal thinking patterns will undoubtedly strengthen attainments in substance abuse and psychiatric treatments (cf., Yochelson & Samenow, 1976/2004). Whether successful treatment of SUDs and OPDs can affect criminogenic attitudes and thinking patterns in the same manner in which they can affect criminogenic needs is mostly unknown and certainly a useful topic for future study. An analysis of women's associations with others is the fourth major factor in criminal risk assessments (Batchelor, 2011). Antisocial networks keep women entrenched in substance use and criminal behavior patterns that undermine their attempts to stay sober and avoid continued criminal opportunities. Hence, future studies should include a measure of women's social networks.

The current investigation suggests that comorbidity should be assessed in terms of the unique combinations and severity of symptoms and not simply as a categorical or dichotomous clinical condition (i.e., comorbid or not). The participants in this research displayed combinations of symptoms of clinical syndromes and personality disorders, which can complicate patterns of distress and dysfunction (Rush, Dennis, Scott, Castel, & Funk, 2008). The

degree to which addiction is the cause or consequence (or both) of these symptom clusters is another topic for future research. Histories of trauma further confound clinical presentations, treatment protocols, and case management strategies (Peters, Strozier, Murray, & Kearns, 1997). Therefore, women in the present investigation and other similar clients require interventions that focus on both criminal and psychiatric recidivism in a person-focused recovery framework that provides integrated modules of services (Epperson, Wolff, Morgan, Fisher, Frueh, & Huening, 2011). The best approaches for justice-involved women combine comprehensive case management approaches with individualized treatment interventions (Millson, Robinson, & Van Dieten, 2010).

The current study's findings are limited. For example, diagnoses were based on self-reported symptoms that were not confirmed by independent clinical evaluations. Furthermore, women with the most severe psychiatric disorders (e.g., schizophrenia and bipolar disorder) were not included in the Needs Inventory because they were screened out at intake for psychiatric services in the jail's medical facility, which provides acute and longer-term care for people with serious mental illnesses. In addition, those with serious mental illnesses were ineligible for participation in DWJS's drug treatment programs. Therefore, detainees with symptoms of the most debilitating mental illnesses were not captured in this investigation.

Finally, the high rate of comorbidity found in the Need Inventory census might be explained by Berkson's (1946) bias, which indicates that the co-occurrence of diseases is more common in treatment settings than in nontreatment settings. In other words, being diagnosed with one mental disorder increases the probability of being diagnosed with another. Most of the women in the study were identified with substance use disorders and therefore the likelihood of their being diagnosed with another psychiatric disorder was elevated due to the nature of co-occurring disorders as well as the current manner of assessing psychiatric disorders, which by its comprehensive nature is more likely to uncover comorbidity (Maj, 2005).

References

- Adam, D. (2013). Mental health: On the spectrum. *Nature*, 496, 416–418. <http://dx.doi.org/10.1038/496416a>
- American Psychiatric Association. (2001). *Diagnostic and statistical manual of mental disorders* (4th ed.) (DSM-IV). Washington, DC: Author.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.) (DSM 5). Washington, DC: Author.
- Andrews, D. A., & Bonta, J. (2003). *The psychology of criminal conduct* (3rd ed.). Cincinnati, OH: Anderson.
- Andrews, D. A., & Bonta, J. (2010). *The psychology of criminal conduct* (5th ed.). New Providence, NJ: Mathew Bender and Company.
- Andrews, D. A., Bonta, J., & Wormith, J. S. (2006). The recent past and near future of risk and/or needs assessment. *Crime & Delinquency*, 52, 7–27. <http://dx.doi.org/10.1177/001128705281756>
- Andrews, D. A., & Dowden, C. (2005). Managing correctional treatment for reduced recidivism: A meta-analytic review of program integrity. *Legal and Criminological Psychology*, 10, 173–187. <http://dx.doi.org/10.1348/135532505X36723>
- Andrews, D. A., Zinger, I., Hoge, R. D., Bonta, J., Gendreau, P., & Cullen, F. T. (1990). Does correctional treatment work? A psychologically informed meta-analysis. *Criminology*, 28, 369–404.
- Batchelor, S. (2011). Beyond dichotomy: Towards an explanation of young

- women's involvement in violent street gangs. In B. Goldson (Ed.), *Youth in crisis?: "Gangs," territoriality and violence* (pp. 39–52). New York, NY: Routledge.
- Becker, S., & McCorkel, J. A. (2011). The gender of criminal opportunity: The impact of male co-offenders on women's crime. *Feminist Criminology*, 6, 79–110. <http://dx.doi.org/10.1177/1557085110396501>
- Belenko, S., Langley, S., Crimmins, S., & Chaple, M. (2004). HIV risk behaviors, knowledge, and prevention education among offenders under community supervision: A hidden risk group. *AIDS Education and Prevention*, 16, 367–385. <http://dx.doi.org/10.1521/aeap.16.4.367.40394>
- Bentall, R. (2006). Madness explained: Why we must reject the Kraepelinian paradigm and replace it with a "complaint-orientated" approach to understanding mental illness. *Medical Hypotheses*, 66, 220–233. <http://dx.doi.org/10.1016/j.mehy.2005.09.026>
- Bergly, T. H., Gråwe, R. W., & Hagen, R. (2014). Domains and perceived benefits of treatment among patients with and without co-occurring disorders in inpatient substance use treatment. *Journal of Dual Diagnosis*, 10, 91–97.
- Berkson, J. (1946). Limitations of the application of fourfold table analysis to hospital data. *Biometrics Bulletin*, 2, 47–53. <http://dx.doi.org/10.2307/3002000>
- Blackburn, A., Mullings, J., & Marquart, J. (2008). Sexual assault in prisons and beyond: Toward an understanding of lifetime sexual assault among incarcerated women. *The Prison Journal*, 88, 351–377. <http://dx.doi.org/10.1177/0032885508322443>
- Blanchette, K., & Brown, S. L. (2006). *The assessment and treatment of women offenders: An integrative perspective*. Chichester, UK: Wiley. <http://dx.doi.org/10.1002/9780470713013>
- Bloom, B., Owen, B., & Covington, S. (2003). *Gender responsive strategies: Research, practice, and guiding principles for women offenders*. Washington, DC: U. S. Department of Justice, National Institute of Corrections.
- Bond, T. G., & Fox, C. M. (2001). *Applying the Rasch model: Fundamental measurement in the human sciences*. Mahwah, NJ: Erlbaum.
- Chan, Y. F., Dennis, M. L., & Funk, R. R. (2008). Prevalence and comorbidity co-occurrence of major internalizing and externalizing disorders among adolescents and adults presenting to substance abuse treatment. *Journal of Substance Abuse Treatment*, 34, 14–24. <http://dx.doi.org/10.1016/j.jsat.2006.12.031>
- Conrad, K. J., Conrad, K. M., Dennis, M. L., Riley, B. B., & Funk, R. (2013). *Validation of the Behavioral Complexity Scale (BCS) to the Rasch Measurement Model, GAIN Methods Report Version 1.2*. Chicago, IL: Chestnut Health Systems. Retrieved from gaincc.org/_data/files/Posting_Publications/Conrad_et_al_2011_BCS_Rasch_Report.pdf
- Dennis, M. L., Titus, J. C., White, M., Unsicker, J., & Hodgkins, D. (2003). *Global Appraisal of Individual Needs (GAIN): Administration guide for the GAIN and related measures* (Version 5). Bloomington, IL: Chestnut Health Systems.
- Deschenes, E. P., Owen, B., & Crow, J. (2006). *Recidivism among Female Prisoners: Secondary analysis of the 1994 BJS recidivism data set*. Washington, DC: U. S. Department of Justice, Bureau of Justice Statistics.
- Douglas, K. S., & Skeem, J. L. (2005). Violence risk assessment: Getting specific about being dynamic. *Psychology, Public Policy, and Law*, 11, 347.
- Eaton, N. R., Keyes, K. M., Krueger, R. F., Balsis, S., Skodol, A. E., Markon, K. E., . . . Hasin, D. S. (2012). An invariant dimensional liability model of gender differences in mental disorder prevalence: Evidence from a national sample. *Journal of Abnormal Psychology*, 121, 282–288. <http://dx.doi.org/10.1037/a0024780>
- Epperson, M., Wolff, N., Morgan, R., Fisher, W., Frueh, B. C., & Huening, J. (2011). *The next generation of behavioral health and criminal justice interventions: Improving outcomes by improving interventions*. New Brunswick, NJ: Rutgers University, Center for and Criminal Justice Research.
- Escobar, G., & Olson, D. E. (2012). A profile of women released into Cook County communities from jail and prison. *Criminal Justice and Criminology: Faculty publications and other works, Paper 8*. Retrieved from http://ecommons.luc.edu/crimnaljsuitce_facpubs/8
- Federal Bureau of Investigation. (2010). *Uniform Crime Report, 2009. Table 33*. Washington, DC: U. S. Department of Justice.
- Ferrari, J. R., Stevens, E. B., Legler, R., & Jason, L. A. (2012). Hope, self-esteem, and self-regulation: Positive characteristics among men and women in recovery. *Journal of Community Psychology*, 40, 292–300.
- First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1996). *Structured clinical interview for DSM-IV axis I disorders, clinician version* (SCID-CV). Washington, DC: American Psychiatric Press.
- First, M. B., Spitzer, R. L., Gibbon, M., Williams, J. B. W., & Benjamin, L. (1994). *Structured clinical interview for DSM-IV axis II personality disorders* (SCID-II) (Version 2.0). New York, NY: Biometrics Research Department, New York State Psychiatric Institute.
- Fisher, W. H., Silver, E., & Wolff, N. (2006). Beyond criminalization: Toward a criminologically-informed mental health policy and services research. *Administration & Policy in Mental Health and Mental Health Services Research*, 33, 544–557.
- Frances, A. (2013). The new crisis of confidence in psychiatric diagnosis. *Annals of internal medicine*, 159(3), 221–222
- Greenberg, G. (2013). *The book of woe: The DSM and the unmaking of psychiatry*. New York, NY: Blue Rider.
- Greiner, L., Brown, S. L., & Skilling, T. (2012). *What the raw score doesn't tell us: Capturing context in risk assessment*. Paper presented at the annual conference of the American Psychology-Law Society, San Juan, Puerto Rico.
- Haney, C. (2006). *Reforming punishment: Psychological limits to the pains of imprisonment*. Washington, DC: American Psychological Association. <http://dx.doi.org/10.1037/11382-000>
- Hills, H. A. (2000). *Creating effective treatment programs for persons with co-occurring disorders in the justice system*. Delmar, NY: The GAINS Center.
- Hoeve, M., McReynolds, L. S., & Wasserman, G. A. (2013). The influence of adolescent psychiatric disorder on yond adult recidivism. *Criminal Justice and Behavior*, 40, 1368–1382. <http://dx.doi.org/10.1177/0093854813488106>
- James, D. J., & Glaze, L. E. (2006). *Mental health problems of prison and jail inmates*. Washington, DC: Department of Justice, Office of Justice Programs, Bureau of Justice Statistics. <http://dx.doi.org/10.1037/e557002006-001>
- Kerig, P. K., & Becker, S. P. (2012). Delinquent girls: Contexts, relationships, and adaptation. In S. Miller, L. D. Leve, & P. K. Kerig (Eds.), *Trauma and girls' delinquency* (pp. 119–143). New York, NY: Springer Science/Business Media.
- Kessler, R. C., Petukhova, M., & Zaslavsky, A. M. (2011). The role of latent internalizing and externalizing predispositions in accounting for the development of comorbidity among common mental disorders. *Current Opinion in Psychiatry*, 24, 307–312. <http://dx.doi.org/10.1097/YCO.0b013e3283477b22>
- Kilpatrick, D. G., Acierno, R., Resnick, H. S., Saunders, B. E., & Best, C. L. (1997). A 2-year longitudinal analysis of the relationships between violent assault and substance use in women. *Journal of Consulting and Clinical Psychology*, 65, 834–847. <http://dx.doi.org/10.1037/0022-006X.65.5.834>
- Krueger, R. F. (1999). The structure of common mental disorders. *Archives of General Psychiatry*, 56, 921–926.
- Krueger, R. F., Caspi, A., Moffitt, T. E., & Silva, P. A. (1998). The structure and stability of common mental disorders (DSM-III-R): A longitudinal-epidemiological study. *Journal of Abnormal Psychology*, 107, 216–227. <http://dx.doi.org/10.1037/0021-843X.107.2.216>

- Krueger, R. F., McGue, M., & Iacono, W. G. (2001). The higher-order structure of common DSM mental disorders: Internalization, externalization, and their connections to personality. *Personality and Individual Differences, 30*, 1245–1259. [http://dx.doi.org/10.1016/S0191-8869\(00\)00106-9](http://dx.doi.org/10.1016/S0191-8869(00)00106-9)
- Lurigio, A. J., Stalans, L. J., Roque, L., Seng, M., & Ritchie, J. (2007). The Effects of Specialized Supervision on Women Probationers: An Evaluation of the POWER Program. In R. Muraskin (Ed.), *It's a Crime: Women and Justice* (pp. 127–145). Upper Saddle River, New Jersey: Prentice Hall.
- Lynch, S. M., DeHart, D. D., Belknap, J., & Green, B. L. (2013). *Women's pathways to jail: Examining mental health, trauma, and substance use*. Washington, DC: US Department of Justice, Bureau of Justice Assistance.
- Lynch, S., Fritch, A., & Heath, N. (2012). Looking beneath the surface: The nature of incarcerated women's experiences of interpersonal violence, treatment needs, and mental health. *Feminist Criminology, 7*, 381–400. <http://dx.doi.org/10.1177/1557085112439224>
- Maj, M. (2005). "Psychiatric comorbidity": An artefact of current diagnostic systems? *The British Journal of Psychiatry, 186*, 182–184. <http://dx.doi.org/10.1192/bjp.186.3.182>
- Maruna, S., & Copes, H. (2005). What have we learned from five decades of neutralization research? *Crime and Justice, 221*–320.
- McHugo, G. J., Caspi, Y., Kammerer, N., Mazelis, R., Jackson, E. W., Russell, L., . . . Kimerling, R. (2005). The assessment of trauma history in women with co-occurring substance abuse and mental disorders and a history of interpersonal violence. *The Journal of Behavioral Health Services & Research, 32*, 113–127. <http://dx.doi.org/10.1007/BF02287261>
- Millson, B., Robinson, D., & Van Diemen, M. (2010). *Women Offender Case Management Model: An outcome evaluation*. Washington, DC: U. S. Department of Justice, National Institute of Corrections.
- Minton, T. D. (2012). *Jail inmates at midyear 2011—Statistical tables*. Washington, DC: U. S. Department of Justice.
- Mordre, M., Groholt, B., Kjelsberg, E., Sandstad, B., & Myhre, A. M. (2011). The impact of ADHD and conduct disorder in childhood on adult delinquency: A 30 years follow-up study using official crime records. *BMC Psychiatry, 11*, 57–63. <http://dx.doi.org/10.1186/1471-244X-11-57>
- Mueser, K. T., Noordsy, D. L., Drake, R. E., & Fox, L. (2003). *Integrated treatment for dual disorders: A guide to effective practice*. New York, NY: Guilford Press.
- National Institute on Drug Abuse. (2010). *Comorbidity: Addiction and other mental illnesses. Research report series*. Washington, DC: Author.
- Olson, D. E. (2013). *An examination of admissions, discharges, and the population of the Cook County Jail, 2012*. Chicago, IL: Cook County Sheriff's Office.
- Peters, R. H., Bartoi, M. G., & Sherman, P. B. (2008). *Screening and assessment of co-occurring disorders in the justice system*. Delmar, NY: CMHS National GAINS Center.
- Peters, R. H., & Hills, H. A. (1997). *Intervention strategies for offenders with co-occurring disorders: What works?* Delmar, NY: National GAINS Center. Retrieved from www.gainscenter.samhsa.gov/html/
- Peters, R. H., & Matthews, C. O. (2002). Jail treatment for drug abusers. In C. G. Leukefeld, F. M. Tims, & D. F. Farabee (Eds.), *Treatment of drug offenders: Policies and issues* (pp. 186–203). New York, NY: Springer.
- Peters, R. H., Strozier, A. L., Murrin, M. R., & Kearns, W. D. (1997). Treatment of substance-abusing jail inmates. Examination of gender differences. *Journal of Substance Abuse Treatment, 14*, 339–349. [http://dx.doi.org/10.1016/S0740-5472\(97\)00003-2](http://dx.doi.org/10.1016/S0740-5472(97)00003-2)
- Phillips, J. (2013). The conceptual status of DSM-5 diagnoses. In J. Paris & J. Phillips (Eds.), *Making the DSM-5* (pp. 143–157). London, UK: Springer.
- Rosenberg, M. (1989). *Society and the adolescent self-image* (Rev. ed.). Middletown, CT: Wesleyan University Press.
- Rubinowitz, M. (2011). *Holding cells: Understanding the collateral consequences of pretrial detention*. Unpublished doctoral dissertation, Department of Sociology, Northwestern University.
- Rush, B. R., Dennis, M. L., Scott, C. K., Castel, S., & Funk, R. R. (2008). The interaction of co-occurring mental disorders and recovery management checkups on substance abuse treatment participation and recovery. *Evaluation Review, 32*, 7–38. <http://dx.doi.org/10.1177/0193841X07307532>
- Sacks, J. Y. (2004). Women with co-occurring substance use and mental disorders (COD) in the criminal justice system: A research review. *Behavioral Sciences & the Law, 22*, 449–466. <http://dx.doi.org/10.1002/bsl.597>
- Salisbury, E. J., & Van Voorhis, P. (2009). Gendered pathways: A quantitative investigation of women probationers' paths to incarceration. *Criminal Justice and Behavior, 36*, 541–566. <http://dx.doi.org/10.1177/0093854809334076>
- Scott, C. K., & Dennis, M. L. (2010). *Cook County Sheriff's Office, Department of Women's Justice Services: 2008 Needs Inventory results*. Chicago, IL: Chestnut Health Systems, Lighthouse Institute.
- Scott, C. K., Dennis, M. L., & Foss, M. A. (2005). Utilizing recovery management checkups to shorten the cycle of relapse, treatment reentry, and recovery. *Drug and Alcohol Dependence, 78*, 325–338. <http://dx.doi.org/10.1016/j.drugalcdep.2004.12.005>
- Steadman, H. J., Osher, F. C., Robbins, P. C., Case, B., & Samuels, S. (2009). Prevalence of serious mental illness among jail inmates. *Psychiatric Services, 60*, 761–765. <http://dx.doi.org/10.1176/ps.2009.60.6.761>
- Swartz, J. A., & Lurigio, A. J. (1999). Psychiatric illness and comorbidity among adult male jail detainees in drug treatment. *Psychiatric Services, 50*, 1628–1630. <http://dx.doi.org/10.1176/ps.50.12.1628>
- Taxman, F. S., Cropsey, K. L., Young, D. W., & Wexler, H. (2007). Screening, assessment, and referral practices in adult correctional settings: A national perspective. *Criminal Justice and Behavior, 34*, 1216–1234.
- Teplin, L. A. (1990). The prevalence of severe mental disorder among male urban jail detainees: Comparison with the Epidemiologic Catchment Area Program. *American Journal of Public Health, 80*, 663–669. <http://dx.doi.org/10.2105/AJPH.80.6.663>
- Trestman, R. L., Ford, J., Zhang, W., & Wiesbrock, V. (2007). Current and lifetime psychiatric illness among inmates not identified as acutely mentally ill at intake in Connecticut's jails. *Journal of the American Academy of Psychiatry and the Law, 35*, 490–500.
- Van Voorhis, P., Wright, E. M., Salisbury, E. J., & Bauman, A. (2010). Women's risk factors and their contributions to existing risk/needs assessment: The current status of a gender responsive Suppl. *Criminal Justice and Behavior, 37*, 261–288. <http://dx.doi.org/10.1177/0093854809357442>
- Vollebergh, W. A., Iedema, J., Bijl, R. V., de Graaf, R., Smit, F., & Ormel, J. (2001). The structure and stability of common mental disorders: The NEMESIS study. *Archives of General Psychiatry, 58*, 597–603. <http://dx.doi.org/10.1001/archpsyc.58.6.597>
- Walters, G. D. (2001). Revised validity scales for the Psychological Inventory of Criminal Thinking Styles. *Journal of Offender Rehabilitation, 32*, 1–13. http://dx.doi.org/10.1300/J076v32n04_01
- Walters, G. D. (2007). Measuring proactive and reactive criminal thinking with the PICTS: Correlations with outcome expectancies and hostile attribution biases. *Journal of Interpersonal Violence, 22*, 371–385. <http://dx.doi.org/10.1177/0886260506296988>
- Walters, G. D. (2012). *Crime in a psychological context: From career criminals to criminal careers*. Los Angeles, CA: Sage.

- Warner, L. A., & White, H. R. (2003). Longitudinal effects of age at onset and first drinking situations on problem drinking. *Substance Use & Misuse, 38*, 1983–2016. <http://dx.doi.org/10.1081/JA-120025123>
- West, H. C., Sabol, W. J., & Greenman, S. J. (2010). *Prisoners in 2009*. Washington, DC: U. S. Department of Justice, Bureau of Justice Statistics.
- Wong, S. C. P., Gordon, A., & Gu, D. (2007). Assessment and treatment of violence-prone forensic clients: An integrated approach. *The British Journal of Psychiatry, 190*, s66–s74. <http://dx.doi.org/10.1192/bjp.190.5.s66>
- Wong, S. C. P., & Hare, R. D. (2005). *Guidelines for a psychopathy treatment program*. Toronto, Canada: Multi-Health Systems.
- Yochelson, S., & Samenow, S. E. (2004). *The criminal personality: Vol I: A profile for change*. Lanham, MD: Rowman & Littlefield Publisher, Inc. (Original work published 1976).

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