

Personality Disorders and Violence Among Female Prison Inmates

Janet I. Warren, DSW, Mandi Burnette, MA, Susan Carol South, MA, Preeti Chauhan, BA, BS, Risha Bale, PhD, and Roxanne Friend, PhD

The current study seeks to expand our understanding of the increasingly well-documented relationship between mental disorder and violence, specifically by examining the relationship between Axis II disorders and community and institutional violence among a cohort of 261 incarcerated women. Drawing from an initial screening of 802 female inmates in maximum security, we sampled to identify 200 nonpsychotic women who met criteria for one of the four Cluster B personality disorders, and 50 nonpsychotic women who did not meet criteria for these disorders. Each inmate was interviewed with the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II). Information regarding instant offense and institutional behavior was obtained from prison files and a self-report inventory. The analyses indicated a high degree of comorbidity between the various Cluster B diagnoses and a significant association with various types of violent crime and nonviolent criminality. Significant relationships were found between Antisocial Personality Disorder and institutional violence, and Narcissistic Personality Disorder and incarceration for a violent crime. Cluster A diagnosis was unexpectedly found to be associated with both incarceration for a violent crime and incarceration for prostitution.

J Am Acad Psychiatry Law 30:502–9, 2002

The past decade has been characterized by increasingly sophisticated studies that examine the relationship between mental disorder and violence. The results of these efforts highlight the relevance of Axis I disorders to increased risk for violent behavior.^{1,2} They further suggest that major mental disorder among women can increase the level of risk for violence, at times elevating it to a level equal to that of men.^{1,3} In the current study, we sought to explore this relationship further by examining the Axis II disorders and their association with risk for violence among a cohort of women incarcerated at a maximum security prison. The prevalence of severe personality disorders (PDs) among prison inmates in general has been assumed and measured to some ex-

tent in male prison and forensic samples.^{4,5} Research relating to female felons has only recently begun to develop and, similar to the early research on incarcerated men, has focused primarily on the rates of serious mental disorders and the treatment needs of this particular population.

Like their male counterparts, incarcerated women have demonstrated consistently higher rates of mental illness than women in the community.⁶ Teplin *et al.*⁷ reported that of 1,272 female jail detainees, more than 80 percent met criteria for one or more lifetime psychiatric disorders, and 70 percent had been symptomatic in the previous six months. Jordan *et al.*⁸ found comparable patterns among female felons entering the prison system with higher rates of mood disorders, alcohol and drug dependence, and borderline and antisocial PDs than among community samples.⁶ For those inmates receiving inpatient psychiatric care, the most common diagnoses were schizophrenia and major affective disorder.⁹ A study of inpatient treatment provided across male and female prisons in the United States found that PDs accounted for approximately 10 percent of the diagnoses received by 1,281 inmates referred for mental health treatment within their respective institutions.¹⁰

Dr. Warren is Professor of Clinical Psychiatric Medicine, Ms. Chauhan is Forensic Clinical Coordinator, and Ms. Burnette and Ms. South are Research Associates, Institute of Law, Psychiatry, and Public Policy, University of Virginia, Charlottesville, VA. Dr. Bale is Director, Mental Health Unit, Fluvanna Correctional Center for Women, Zions Crossroads, VA. Dr. Friend is Mental Health Clinical Supervisor, Virginia Department of Corrections, Richmond, VA. This research was funded by Grant 98-CE-VX-0027 from the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice, to the University of Virginia. Points of view expressed in this article are those of the authors and do not necessarily represent the official position or policy of the U.S. Department of Justice. Address reprints and correspondence to: Janet I. Warren, DSW, Institute of Law, Psychiatry, and Public Policy, P.O. Box 800660, UVA Health Systems, Charlottesville, VA 22908-0660. E-mail: jiw@virginia.edu

In the past few years, the research literature has also begun to explore the relationship between PDs and violent or criminal behavior. A study of 1,740 male and female patients committed to two British hospitals for dangerous, violent, or criminal behavior over a six-month period found that 58 percent of these patients were suffering from functional psychoses with one-quarter of this group also having an independent PD; 26 percent were suffering from a PD without any psychotic complications; and 16 percent had learning disabilities.¹¹ Of the 119 individuals who had a PD only, 26 percent had been admitted for homicide, 40 percent for other violent acts, 15 percent for sex offenses, and 18 percent for arson. A longitudinal study of 717 youth further found that adolescents with symptoms of DSM-IV Cluster A and B PDs were more likely than other adolescents in the community to commit violent acts during adolescence, including arson, assault, breaking and entering, initiating physical fights, robbery, and threatening to injure others.¹² These results were found to remain significant after controlling for the youths' age, gender, socioeconomic status, degree of pathological behavior in parents, and co-occurring psychiatric disorders. Cross-sectional studies of substance abusers¹³ and spouse abusers¹⁴ demonstrate similarly high rates of PDs among these groups.

Another focus of this research emphasizes the comorbid patterns of PDs observed among violent offenders. Using a combination of structured clinical interviews and a battery of instruments, Coid¹⁵ studied PDs among 243 male and female violent offenders detained under either the civil law for psychopaths or criminal law for the highly dangerous in the United Kingdom. Only 10 percent of the sample did not meet criteria for at least one Axis II diagnosis. Within this sample, the most common diagnoses were Borderline (69%) and Antisocial PDs (53%) with a consistently high rate of comorbidity, similar to that found among other populations,¹⁶ with a mean of 3.6 Axis II diagnoses per offender. Blackburn and Coid¹⁷ subsequently examined the clustering of PDs among an exclusively male sample of 164 incarcerated violent male offenders. Using cluster-analysis techniques, they identified six diagnostic patterns: antisocial-narcissistic, paranoid-antisocial, borderline-antisocial-passive-aggressive, borderline, compulsive-borderline, and schizoid. Based on their findings, they concluded that violent offenders are heterogeneous in their pathologic personalities and

that the PDs among this group of offenders are best conceptualized as recurring patterns of covariant traits rather than comorbid singular diagnostic categories. This type of personality classification system has not yet been tested in women.

This emergent body of research has begun to identify the significant Axis I and Axis II mental health problems of female inmates and to suggest a possible relationship between certain PDs and violent or criminal behavior. This association appears to operate across gender lines, although the more explicit and possibly comorbid nature of the various PDs that characterize incarcerated women is still less explored than among incarcerated men. Current research lacks clinically robust studies of PDs among detained and imprisoned women, and the larger prison and forensic studies generally contain only a small percentage of female inmates or patients. In the current study, we therefore sought to explore the relationship by focusing on a sample of women in a maximum security prison who, by their legal status, had been identified as being of a particularly high risk for both criminal and violent behavior. Using a structured clinical assessment interview, we explore the comorbidity across Cluster B diagnoses documented in this sample and the relationship of these disorders to various patterns of criminality and violence.

Methods

Participants and Procedure

The sample comprised 261 female felons incarcerated at a maximum security prison for women. Each of the 261 women had been previously screened during a larger data collection effort involving 802 inmates. The screening sample of 802 women represented approximately 80 percent of the entire population incarcerated in the prison over the course of the study. Women who agreed to participate in the study and those who did not were compared on age, race, offense type, and length of sentence, by using data from institutional files. As summarized in an earlier publication, the research sample was slightly younger and had more counts of institutional misconduct, but did not differ on the variables of race (i.e., minority or not), commission of violent criminal offenses, sentence, or security classification.¹⁸

The larger screening of 802 inmates included a 45- to 60-minute administration, to small groups of inmates, of various instruments, including the Brief

Symptom Inventory (BSI), the Barratt Impulsivity Scale (BIS), the Prison Adjustment Questionnaire (PAQ), and the Structured Clinical Interview for DSM-IV Personality Screening Questionnaires (SCID-II Screen). The SCID-II Screen provides a screening questionnaire with one question per DSM-IV personality diagnosis criterion, stated in lay terms, to determine areas of disordered personality most relevant to the individual assessment.

Written informed consent was obtained from each of the women at each stage of data collection, including all group-administration of data-collection instruments and structured interviews. These were read to the participants if they did not indicate a clear ability to read the forms, which were written at a sixth grade reading level. Each consent form had been reviewed and approved by the University of Virginia Institutional Review Board (IRB) Research Committee. Because of prison policy, it was not possible to pay the inmates for their participation in the study; however, they were given cookies, soda, and pens, and on two occasions, concerts were arranged for the entire prison to thank them for their support of the research that encompassed three years of data collection.

In the current study, the scores on the SCID-II Screen and BSI, a 53-item self-report psychiatric inventory was used to classify nonpsychotic women into an experimental and/or control group. The experimental group was to include at least 200 randomly chosen women who did not self-report psychotic symptoms on the BSI but who self-reported criteria sufficient on the SCID-II Screen to suggest a Cluster B PD diagnosis: Antisocial, Borderline, Histrionic, or Narcissistic PD. The control group was initially designed to contain at least 50 nonpsychotic women who did not meet criteria for any PDs. Analysis of the screening data, however, indicated that we could not locate 50 women in the larger sample of 802 women who did not self-report symptoms suggestive of at least one PD, leading us to change the control group to women who did not meet criteria for a Cluster B diagnosis on the SCID-II Screen. Psychometric examination of the SCID-II Screen in the current sample indicated high levels of true negative and false positive responses, suggesting that the screen served its function of identifying those individuals for whom further inquiry into specific symptoms through clinical interview was necessary.

Assessment of PDs

The SCID-II, a semistructured interview, was used for diagnosing the 10 DSM-IV PDs.¹⁹ Training on the SCID-II involved a series of training sessions, mock interviews using the SCID-II Clinical Interview, and double coding of 10 inmate interviews by each interviewer. The presence of disordered personality was calculated by using both continuous and diagnostic scoring. As in much of the research on PDs, the reliability of the double-coded interviews was excellent for the continuous rating, with intraclass correlation coefficients (ICCs) ranging from .77 to .98, but fair to good for the diagnostic scores (ICCs ranging from .45 to .93, excluding Schizotypal PD, which occurred once and resulted in a minus ICC). To ensure a rigorous assessment of PD, only the diagnostic cutoffs were used in the statistical analyses. The final sample based on the earlier screening resulted in a sample of 86 inmates who did not meet diagnostic criteria for any PD; 132 inmates who met diagnostic criteria for Cluster B psychopathy, either singularly or in combination with other diagnoses; and 37 inmates who met diagnostic criteria for either Cluster A or C psychopathy, either singularly or in combination with other non-Cluster B diagnoses.

Each interview took from one and one-half to three hours to complete. The response rate was very high, with more than 95 percent of the women identified agreeing to participate in the clinical interviews. Because of the small number of women who refused an interview, no attempt was made to examine differences between those who agreed to be interviewed and those who did not.

Assessment of Violent Behavior and Criminality

Violent behavior was assessed using three separate measures: (1) incarceration for a violent offense coded according to three categories; (2) the Prison Violence Inventory (PVI); and (3) institutional infractions for violent or threatening behavior. The institutional record for each woman was reviewed to ascertain whether she was currently incarcerated for a violent offense. The violent crimes included capital murder, homicide, second degree murder, accomplice to murder, attempted homicide, manslaughter, abduction, assault, malicious wounding, felony assault, hurling missile, simple assault, abuse and cruelty, and child abuse. The analyses regarding conviction for a violent crime were conducted by using

three systems of classification: (1) current convictions for any violent crime, as just described; (2) current convictions for a violent offense other than homicide; and (3) current convictions for homicide. This distinction was explored because of the differences suggested in the literature regarding women who commit homicide and those who commit other types of violent offenses.^{20,21}

A PVI was created to measure the amount of violence that each inmate had perpetrated since arriving at the correctional institution. The format was derived from the instrument used in the large MacArthur risk-assessment study of the violence perpetrated by men and women released from inpatient hospitalization into the community.¹ The inventory included a list of 12 items requiring a yes or no answer. The score on the various items were combined into two cumulative indices: one that contained the nine items that pertained to threats and physical and/or sexual violence and the other that pertained to spreading rumors, lying, and stealing. Only the former was used in the current set of analyses.

A file review was conducted for each inmate to ascertain whether the inmate had been charged with any violent institutional infractions during the past year. Violent infractions included only those that involved some type of threatening or violent behavior and were defined using the institution's criteria for rule violations. Generally, violent offenses were limited to Level I prison infractions (which comprise the most serious infractions, including murder, assault, forced sex, and setting fire to a person) but also included fighting, coded from the Level II series.

The measure of nonviolent criminality was defined by using information regarding current convictions. Nonviolent crimes included convictions for prostitution, drug offenses, property crimes, fraud, arson of unoccupied dwellings, minor sex crimes, parole or probation violations, and regulatory crimes. These measures were all coded as categorical (yes or no) variables.

Results

Descriptive Statistics

Table 1 summarizes the demographic and criminal history characteristics for the entire sample according to the PD diagnosed. As shown, age was significantly related to the presence of a Cluster B PD, with these women being under the median age

Table 1 Demographic Characteristics and Criminal History

	Full Sample (N = 261)	No PD (N = 86)	Cluster B (N = 132)	Non-Cluster B (N = 42)
Age				
<32 years	48.71*	40.54	55.83*	43.75
>32 years	51.29*	59.46	44.17*	56.25
Race				
Minority	65.86	65.43	68.25	55.56
Nonminority	34.14	34.57	31.75	44.44
Time served				
<5 years	35.46	31.71	34.65	47.22
>5 years	64.54	68.29	65.35	52.78
Any violent	14.86	12.50	18.10	5.56
None/Nonviolent	85.14	87.50	81.90	94.44
Violent				
All	50.20	45.12	52.76	47.22
Violent, excluding murder	38.35	37.80	39.37	30.56
Murder	22.31	20.73	24.41	16.67
Minor sex	1.99	2.44	1.57	2.78
Drug	32.27	39.02	31.50	22.22
Property	36.25	40.24	34.65	33.33
Fraud	30.28	28.05	28.35	44.44
Prostitution	4.38	2.44	5.51	5.56
Parole	3.19	3.66	3.15	2.78
Arson/unoccupied	0.00	0.00	0.00	0.00
Regulatory	17.53	15.85	17.32	19.44

* $p < .05$ for $\chi^2(df = 1, 261)$.

for the sample. The variables of age, race, and time served were entered as covariant in the logistic regressions, when significant.

Table 2 summarizes the percentage of the sample that met diagnostic criteria for the 10 PDs, according to the diagnostic cutoff scoring. The most common diagnoses included Antisocial PD (ASP; 43%), Paranoid PD (PAR; 27%), and Borderline PD (BOR; 24%). The least common diagnoses included Schizoid PD (SZD; 5%), Dependent PD (DEP; 4%), Histrionic PD (HIS; 4%), and Schizotypal PD (STP; 4%). Table 2 also contains the percentage of the sample that met criteria for the other 10 PD for each of the diagnoses. Consistent with past research, the diagnoses tended to overlap, showing patterns of comorbidity across the PDs. Comorbidity rates above 40 percent were demonstrated most consistently with Antisocial PD and Borderline PD. Specifically, Antisocial PD was found to be comorbid with Paranoid PD (69%), Schizoid PD (54%), and Schizotypal PD (56%) and Borderline PD with Schizotypal PD (67%), Paranoid PD (41%), and Antisocial PD (43%). Schizoid PD and Obsessive-Compulsive PD (OC) showed the least degree of comorbidity in the

Personality Disorders in Female Prison Inmates

Table 2 Percentage of Sample Meeting SCID II Diagnostic Criteria and Diagnostic Comorbidity Between 10 Personality Disorders ($N = 174$)

	%	PAR	SZD	STP	ASP	BOR	HIS	NAR	AVO	DEP	OC
Paranoid (PAR)	27	100									
Schizoid (SZD)	5	6	100								
Schizotypal (STP)	4	9	8	100							
Antisocial (ASP)	43	69	54	56	100						
Borderline (BOR)	24	41	23	67	43	100					
Histrionic (HIS)	4	6	0	11	7	8	100				
Narcissistic (NAR)	10	24	15	22	18	22	44	100			
Avoidant (AVO)	14	26	23	11	21	30	22	17	100		
Dependent (DEP)	4	6	0	11	4	12	11	4	17	100	
Obsessive-Compulsive (OC)	15	18	0	22	16	18	11	13	14	0	100

Comorbidity percentages are organized by column. For example, of the people with a diagnosis of Paranoid PD, six percent had Schizoid PD, and nine percent had Schizotypal PD.

current sample. The average number of diagnosable PDs per inmate was 1.46 ± 1.47 .

Prediction of Violence Measures

A series of multivariate analyses were performed, to predict the various violence and criminality measures from dichotomous measures of PDs. Models were used, first to determine whether the presence of any PD in Clusters A, B, or C predicted violence. Subsequently, models were used that included each Cluster B PD. The dichotomous measure of whether diagnostic criteria had been met was used as the independent variable in each analysis accompanied by age, race, and time served when indicated. Standard logistic regressions were used in predicting the categorical violence (i.e., current convictions for any violent crime, as described earlier (yes/no); current convictions for a violent offense other than homicide (yes/no); current convictions of homicide (yes/no); self-reported violence in prison (yes/no); institutional infractions for violent behavior (yes/no); and criminality measures (prostitution, drug offenses, property crimes, fraud, setting fire to unoccupied dwellings, minor sex crimes, parole or probation violations, and regulatory crimes) described earlier. These results are summarized in Table 3.

A diagnosis of any Cluster A PD significantly predicted the following: current convictions of any violent crime including homicide ($B = 0.46 \pm 0.16$ (SE), $p < .01$, OR = 2.50); current convictions of violent crimes excluding homicide ($B = 0.47 \pm 0.15$, $p < .01$, OR = 2.49); and current conviction for prostitution ($B = 0.92 \pm 0.35$, $p < .01$, OR = 6.35). A diagnosis of any Cluster B PD significantly predicted whether there was self-reported violence within the institution ($B = 0.59 \pm 0.17$, $p < .001$, OR 3.26). Any Cluster C diagnoses were signifi-

cantly predictive of not having been incarcerated for a drug crime ($B = -0.37 \pm 0.17$, $p < .05$, OR = .48) and of having been incarcerated for regulatory crimes, including perjury ($B = -0.34 \pm 0.17$, $p < .05$, OR = 1.96).

Analyses of the individual Cluster B diagnoses yielded a different pattern of results. Narcissistic PD significantly predicted current incarceration for any violent crime, including homicide ($B = 1.0 \pm 0.33$, $p < .01$, OR = 7.57) and current incarceration for any violent crime, excluding homicide ($B = 0.80 \pm 0.26$, $p < .01$, OR = 4.92). A diagnosis of Antisocial

Table 3 Logistic Regression Summary for Personality Disorder Clusters and Individual Cluster B Diagnoses Predicting Categorical Violence and Criminality Variables

Variable	B	SE	p	Odds Ratio
Cluster A				
Current conviction of violent crime with homicide*	0.46	0.16	.01	2.50
Current conviction of violent crime without homicide*	0.46	0.15	.01	2.49
Current conviction of prostitution	0.92	0.35	.01	6.35
Cluster B				
Self-report institutional violence*	0.59	0.17	.001	3.26
Narcissistic PD				
Current conviction of violent crime with homicide*	1.01	0.33	.01	7.57
Current conviction of violent crime without homicide*	0.80	0.26	.01	4.92
Antisocial PD				
Self-report institutional violence*	0.58	0.170	.001	3.18
Borderline PD				
Self-report institutional violence*	0.53	0.18	.01	2.88
Cluster C				
Current conviction of drug crime†	-0.37	0.17	.027	0.48
Current conviction of regulatory crime	0.34	0.17	.05	1.96

*Age and length of sentence entered as covariates in model.

†Race entered as covariate in model.

Models not followed by a symbol (* or †) include no covariates.

PD significantly predicted whether there was any self-report of institutional violence ($B = 0.53 \pm 0.16, p < .01, OR = 3.18$). Borderline PD was predictive of whether there was any self-report of institutional violence ($B = 0.53 \pm 0.18, p < .01, OR = 1.15$). Histrionic PD was not related to any of the violence or criminality measures.

Discussion

These findings reflect a substantial association between different Axis II diagnoses and patterns of criminality and violence within this sample of incarcerated women. The strength of these associations suggests that the chronic and persistent nature of these Axis II disorders, including tumultuous relationships, impulsivity, recklessness, and susceptibility to substance use and abuse on the Cluster B continuum, as well as the suspiciousness, social awkwardness, and overly dependent attitudes and behavior that characterize the Cluster A and C continua, have all preceded incarceration and may have contributed to the behavior or the series of behaviors that coalesced into these legal outcomes or sanctions. Most broadly, they suggest that the sustained study of the association between mental disorder and violence over the past decade¹ will be enhanced and further refined by the inclusion of these comorbid PDs. They further underscore the significance of Axis II disorders in understanding the mental health needs of this population and demonstrate the complex intermingling of Axis I and Axis II disorders among this population.

As in other studies,⁸ Antisocial PD (43%) and Borderline PD (24%) were common diagnoses, although in the current study Paranoid PD was also diagnosed in 27 percent of the women interviewed. Further examination demonstrated that the diagnosis of Paranoid PD was covariant with all the 10 PDs, creating problems of definition and possible overdiagnosis in this correctional population. It was routinely reported by inmates that a wary approach to all interpersonal interactions, both with other inmates and correctional officers, was requisite for survival in this environment. Further research was subsequently undertaken to differentiate the institutional onset of these perceptions and behaviors from those that were chronic. This research found that differences in situational and trait paranoia were identifiable in the current population.²²

Each of the Cluster B PDs reflected some degrees of comorbidity with each other as well as with other PD diagnoses. As summarized in Table 2, Antisocial and Borderline PDs had the highest degree of comorbidity, with 43 percent of the women with Antisocial PD also meeting the criteria for Borderline PD. More unexpected was the significant degree of comorbidity observed between these two diagnoses and the Cluster A diagnoses. Even after removing Paranoid PD from the analyses, 54 and 56 percent of the women meeting criteria for Antisocial PD, met criteria for Schizoid and Schizotypal PDs, respectively. Similarly, for women who met the criteria for Borderline PD, 67 percent also met criteria for Schizotypal PD. Although not reflective of the same patterns of pairing reported by Blackburn and Coid¹⁷ in their study of male inmates, these findings theoretically support their observations regarding recurring patterns of covariant traits in contrast to single diagnoses as contemplated by the DSM system of classification. The current findings also suggest that the combination of traits such as the rule-breaking and volatile behavior of the Antisocial and Borderline PDs combined with the distorted and odd perceptions of the Paranoid and Schizotypal PDs may put women at particularly high risk for breaking the law and may create an added vulnerability for their doing poorly in navigating through the criminal justice system.

The Cluster B PDs, taken as a group, were not predictive of incarceration for a violent crime or violent institutional infractions. The combined Cluster B disorders were predictive only of self-reported violence within the institution. This finding, which mirrors the findings documented with Antisocial PD may indicate that these women are relatively generic in their offending behavior and perpetrate a variety of crimes, rather than focusing their illegal activities on specific violent crime categories. This pattern of offending is similar to that observed among men with Antisocial PD. The contrast between generic and specific patterns of criminality will be explored further in subsequent research that will compare antisocial personality diagnoses and the psychopathy paradigm, which correlates more strongly with violence²³ among this group of female felons. The higher rate of self-reported violent behavior within the institution (but not violent rule infractions) by women who meet diagnostic criteria for Antisocial PD may further reflect their ability to manifest covert violence that does not result in institutional action or, alter-

natively, to exaggerate and embellish their predatory and exploitative tendencies on a self-report measure.

In marked contrast to the lack of a predictive relationship between general Cluster B personality disorders and violent crime, Narcissistic PD predicted current incarceration for any violent crime including murder and for any violent crime excluding murder, with odds ratios of 7.57 and 4.92, respectively. Unlike the other Cluster B diagnoses, these results suggest a powerful relationship between this particular PD and violent behavior among incarcerated women. Narcissistic PD was diagnosed in 10 percent of the sample with rates of comorbidity ranging from 4 percent (Dependent PD) to 44 percent (Histrionic PD). These results suggest that the sense of entitlement, grandiosity, interpersonal exploitativeness, lack of empathy, and envy that characterize this disorder may also be correlates of violent behavior among certain women.

Unexpectedly, a significant predictive relationship was found between Cluster A PDs and violent behavior. This relationship included violent offenses both including and excluding homicide with odds ratios of 2.50 and 2.49, respectively. These results suggest that the suspicious attitudes, bizarre forms of thinking, and social isolation associated with the Cluster A PDs may be linked to the most extreme types of violence perpetrated by women. Recently, Monahan *et al.*,¹ using the MacArthur violence risk data, failed to confirm the robust relationship between threat-control-override delusions and violence that had been shown earlier, leading these researchers to speculate that it was more a generally suspicious attitude toward others than the delusional structure *per se* that increased the level of risk for violent behavior. The findings from the current study similarly suggest that suspiciousness and odd beliefs are highly relevant to risk assessment for violence among women, superseding the reckless and tumultuous behavior more commonly associated with PDs among female offenders.

The results of the current study further indicate a substantial relationship between Cluster A PDs and prostitution. This relationship may imply that psychiatric impairment is more common among this population of women than generally has been thought or that prostitutes with this type of disorder are more likely to be caught and prosecuted. The former explanation contradicts the common stereotype of prostitution's being an antisocial form of ac-

tivity based on immoral acts. Such an explanation suggests that the social isolation that accompanies the Cluster A diagnoses predisposes these women to this kind of anonymous sexual activity, while helping them to avoid the more regulated and routinized interpersonal environment of many workplaces.

These findings highlight the relevance of PDs to the understanding of the criminal and violent acts perpetrated by incarcerated women. The current data do not allow us to make any immediate extrapolation of our findings to risk for violence in a community sample of women. This sample of incarcerated women is characterized by significant socioeconomic, educational, and developmental vulnerabilities that may influence and aggravate this relationship in a way that would not be found in a more average sample of women living in the community. The high rates of comorbidity reflected within this sample among the Cluster B disorders may be reflective of these disorders in general and identifies the need for further study of the obviously malignant outcome of these various forms of comorbidity in groups of disadvantaged women. Further analyses of other stages of data that were conducted as part of the larger prison study that involve assessments of psychopathy, PTSD, and alternative risk assessment protocols may help to inform these important issues.

References

1. Monahan J, Steadman H, Silver E, *et al*: Rethinking Risk Assessment: The MacArthur Study of Mental Disorder and Violence. New York: Oxford University Press, 2001
2. Cooke DJ, Forth AE, Hare RD: Psychopathy: Theory, Research and Implications for Society. Amsterdam: Kluwer Academic Publishers, 1998
3. Lidz CW, Mulvey EP, Gardner W: The accuracy of predictions of violence to others. *JAMA* 269:1007-11, 1993
4. Blackburn R: Psychopathy and personality disorders, in Psychopathy: Theory, Research and Implications for Society. Edited by Cooke DJ, Forth AE, Hare RD. Dordrecht: Kluwer Academic Publishers, 1998, pp 257-68
5. Davison S, Taylor PJ: Psychological distress and severity of personality disorder symptomatology in prisoners convicted of violence and sexual offenses. *Psychol Crime Law* 7:267-73, 2001
6. Robins LN, Regier DA: Psychiatric Disorder in America. New York: The Free Press, 1991
7. Teplin LA, Abram KM, McClelland GM: Prevalence of psychiatric disorders among incarcerated women. I: pretrial jail detainees. *Arch Gen Psychiatry* 53:505-12, 1996
8. Jordan BK, Schlenger WE, Fairbank JA, Caddell JM: Prevalence of psychiatric disorders among incarcerated women. II: convicted felons entering prison. *Arch Gen Psychiatry* 53:513-9, 1996
9. Swanson J, Morrissey JP, Goldstrom I, Rudolph J, Manderscheid RW: Demographic and Diagnostic Characteristics of Inmates Receiving Mental Health Services in State Adult Correctional Facilities. *Vital Health Stat 3: Statistical Note No. 207*. Washington,

- DC: National Center for Health Statistics, U.S. Department of Health and Human Services, 1993
10. Edwards AC, Morgan DW, Faulkner LR: Prison inmates with a history of inpatient psychiatric treatment. *Hosp Community Psychiatry* 45:172–4, 1994
 11. Taylor PJ, Leese M, Williams D, Butwell M, Daly R, Larkin E: Mental disorder and violence: a special (high security) hospital study. *Br J Psychiatry* 172:218–26, 1998
 12. Johnson JG, Cohen P, Smailes E, et al: Adolescent personality disorders associated with violence and criminal behavior during adolescence and early adulthood. *Am J Psychiatry* 157:1406–12, 2000
 13. Poling J, Rounsaville BJ, Ball S, Tennen H, Kranzler HR, Triffleman E: Rates of personality disorders in substance abusers: a comparison between DSM-III-R and DSM IV. *J Pers Disord* 13:375–84, 1999
 14. Hart SD, Dutton DG, Newlove T: The prevalence of personality disorders among wife assaulters. *J Pers Disord* 7:329–41, 1993
 15. Coid JW: DSM-III diagnosis in criminal psychopaths: a way forward. *Crim Behav Ment Health* 2:78–94, 1992
 16. Oldham JM, Skodol AE, Kellman HD, Hyler SE, Rosnick L, Davies M: Diagnoses of DSM-III personality disorders by two structured interviews: patterns of comorbidity. *Am J Psychiatry* 149:213–20, 1992
 17. Blackburn R, Coid JW: Empirical clusters of DSM-III personality disorders in violent offenders. *J Pers Disord* 13:18–34, 1999
 18. Warren JI, Hurt S, Loper AB, Bale R, Friend R, Chauhan P: Psychiatric symptoms, history of victimization, and violent behavior among incarcerated female felons: an American perspective. *Int J Law Psychiatry* 25:129–49, 2002
 19. First MB, Gibbon M, Spitzer RL, Williams JB, Benjamin LS: The Structured Clinical Interview for DSM-III-R Personality Disorders (SCID II). I: description. *J Pers Disord* 9:83–91, 1995
 20. Warren JW, Kovnick JK: Women who kill, in *Handbook of Psychological Approaches with Violent Offenders: Contemporary Strategies and Issues*. Edited by Van Hasselt VB, Herson M. New York: Plenum Publishers, 1999, pp 189–204
 21. Brownstein HH, Spunt BJ, Crimmins S, Goldstein PJ, Langley S: Changing patterns of lethal violence by women: a research note. *Women Crim Just* 5:99–117, 1994
 22. Carter TM: Prison paranoia: context based paranoid personality traits in incarcerated women. Unpublished doctoral dissertation. Charlottesville, VA: University of Virginia, 2001
 23. Hare RD: *The Hare Psychopathy Checklist—Revised*. Toronto: Multi-Health Systems, 1991