

A Cross-Sectional Study of Psychosocial and Criminal Factors Associated with Arrest in Mentally Ill Female Detainees

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In this study, the relationship was examined among clinical, criminal, and sociodemographic characteristics and the severity of the criminal charge of mentally ill female detainees admitted to the women's psychiatric unit at a large urban jail. In a cross-sectional study, 96 randomly selected female detainees were interviewed by one of two trained interviewers using the Structured Clinical Interview for DSM (SCID)-IV, the Addiction Severity Index, the Global Assessment of Functioning Scale (GAF), and the Medical Outcomes Study 36-Item Short-Form Health Survey. Criminal offense categories were based on the Federal Bureau of Investigation's Uniform Crime Reporting Program. Altogether, 48 percent of the detainees had been charged with committing at least one Part I crime; 27 percent were charged with committing a violent crime against persons. Lower GAF score and previous conviction(s) for a serious crime were associated with current arrest for a Part I crime. The data also suggest that a lower GAF score may be associated with a current charge of committing a violent crime, and placement on probation or parole before the current arrest may be protective against this charge. Mentally ill women who are more functionally impaired may be at higher risk of being arrested and charged with committing more serious and more violent crimes than those with lesser impairment.

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Mental health professionals are increasingly responsible for treating mentally ill offenders, a potentially violent patient group.¹ Reconsidering an earlier conclusion,² Monahan wrote that "there appears to be a relationship between mental disorder and violent behavior" (Ref. 3, p 299), even after controlling for social and demographic characteristics. Nevertheless, debate continues regarding whether higher rates of crimes and more serious crimes are committed by mentally ill persons than by non-mentally ill per-

sons.^{4–10} Discrepant findings can be traced in part to variation in study samples, such as incarcerated versus hospitalized versus community-dwelling persons⁹; nonequivalent comparison groups¹¹; and lack of appropriate controlling for sociodemographic factors,¹² cross-national differences,⁴ and availability of community resources.⁶

Despite contrary evidence,¹³ certain psychiatric disorders, such as schizophrenia and bipolar disorder, seem to be associated with criminal behavior.^{8,14–16} Other illness-related factors that cross diagnostic boundaries increase the risk for these activities—for instance, psychosis, nonadherence to treatment, and substance abuse.^{4,12,17–19} Swanson *et al.*^{8,19} found that persons who met criteria for multiple DSM-III diagnoses were more likely to report engaging in assaultive behavior, especially if they had a comorbid substance abuse disorder. Incarcerated severely mentally ill offenders can be distinguished from psychiatric inpatients by frequent presence of

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comorbidity, often including substance-related disorders and antisocial personality disorder.²⁰

Factors associated with decisions to incarcerate mentally ill offenders instead of hospitalizing them are not always clear,²¹ but they include an assessment of risk for committing violent acts.^{22–24} Lamb and Weinberger¹⁵ noted that persons charged with a felony are sent to jail regardless of mental condition. The situation of those with severe mental illness who are charged with less severe crimes is more complex. The authors echo a familiar refrain: “many mentally ill persons who commit serious crimes and enter the criminal justice system might not have engaged in such behavior if they had been receiving adequate and appropriate mental health treatment” (Ref. 15, p 484).

Incarcerated women generally have been neglected in research on mental illness and violent behavior.²⁵ Obtaining data on women in jail is important for assessing service needs.^{26,27} Although women represent only a small percentage of jail inmates, incarceration rates among women are increasing, and the male-to-female ratio among violent mentally ill offenders is more nearly equal.^{25,27} Women with serious mental illness commit almost as many violent acts as do men with serious mental illness.⁹ Recent data indicate that mental illness is more prevalent among female than male inmates in jails and prisons²⁸ and that incarcerated women are more likely than incarcerated men to have a diagnosis of severe mental disorder.^{16,27} Teplin *et al.*¹⁶ found that the prevalence and the odds of most disorders for each age and racial/ethnic subgroup were significantly higher in their inmate sample than in the combined general household sample of women from the Epidemiologic Catchment Area Study’s three urban sites.²⁹

We interviewed female detainees admitted to the psychiatric unit at a large urban jail. This study was designed to discern the factors associated with arrest on charges of more serious types of criminal behavior in mentally ill female offenders. The following questions were asked: What were the types or severity of current psychiatric disorders? What was the level of functional impairment? What were the detainees’ sociodemographic characteristics and criminal backgrounds? Was parole or probation status associated with being arrested and charged with more serious crimes?

Methods

Subjects

The Cook County Department of Corrections (CCDOC) in Chicago has approximately 100,000 admissions annually, with a daily census that averages 10,000 to 11,000 inmates, including pretrial detainees and those serving sentences of less than one year. Similar to that in other large urban jails, the Cook County jail’s population consists predominantly of racial and ethnic minorities. During the past decade, women have comprised an increasing proportion of the total admissions. Of the daily admissions, approximately 15.0 percent of women and 6.1 percent of men have current severe mental disorders (e.g., schizophrenia, mania, major depression).^{16,30} From 1997 through 1999, women accounted for 14.3 to 15.7 percent of annual admissions, and 7.3 to 8.6 percent were admitted to the psychiatric acute care unit at Cermak Health Services (CHS) of Cook County for assessment and stabilization before transfer to the Intermediate and Subacute Unit at CHS. CHS, an affiliate of the Cook County Bureau of Health Services, is located physically at and is the health care provider for the CCDOC.

We interviewed female detainees who were selected randomly from the daily admissions roster of the mental health services’ 60-bed Female Intermediate and Subacute Unit at CHS from November 1996 through June 1999. The study was approved by two institutional review boards (IRBs), one representing the authors’ primary academic affiliation and one that oversees research conducted at CHS. The IRB membership includes a prisoner representative, in accordance with the Code of Federal Regulations (Title 45, Part 46, Subpart C). All participants gave written informed consent after the interviewers provided a thorough explanation of the project and procedures. Participants were informed that they would receive no financial compensation, privileges, or any other special benefit, such as a reduction of sentence, for participating.

Study candidates were approached two to four weeks after admission (three subjects were interviewed 13 days after admission). On average, interviews were conducted 19 ± 4 (SD) days after admission, which allowed for adjustment to the jail environment as well as for detoxification from prearrest substance use and stabilization of acute psychotic symptoms. We tried to minimize the possibility that

mood and/or psychotic symptoms were masked or mimicked by the effects of drugs or alcohol. To maximize generalizability, we required only that subjects be at least 18 years of age and be able to give informed consent and communicate with the interviewers. They also had to score at least 24 (of 30) on the Mini-Mental State Examination (MMSE).³¹ All interviews were conducted in English; we did not exclude any subject due to a language barrier.

Of the 145 women whom we asked to participate, 116 (80%) consented and 29 refused. This report includes 96 (83%) subjects who completed all ($n = 78$) or part ($n = 18$) of the interview battery. Seventy-seven (80%) women were awaiting trial, five (5%) had been sentenced, and one (1%) had been adjudicated unfit to stand trial. The legal status of three (3%) participants was unclear. One detainee, who had been judged not guilty by reason of insanity, was arrested for violation of the conditions of her parole; one was awaiting extradition on an outstanding warrant out of state, and one was awaiting sentencing. The legal status of the remaining 10 (10%) was not known, although available chart information suggested that most if not all were awaiting trial.

Twenty women were excluded for various reasons. Ten did not qualify because they scored below the MMSE cutoff, three were ineligible because they were in a non-CCDOC facility more than four weeks before transfer to CCDOC, one was less than 18 years of age, five withdrew consent, and one subject's data from an incomplete interview were lost. The 96 subjects did not differ in mean age from those who refused participation or who did not qualify for participation in the study. All who refused and all but one who did not qualify were racial and ethnic minorities. Participants and nonparticipants could not be compared on severity of criminal charge at admission because we were unable to obtain this information for most nonparticipants.

Procedures

Two raters were trained on use of the rating instruments so that interviews would be conducted according to established standards. Training was conducted by a social worker (S.S.R.) with extensive experience in administering structured psychiatric diagnostic interviews in the Collaborative Depression Study³² and by a master's degree-level nurse with extensive experience in addictions research. Training included observing and corating interviews.

We did not conduct formal reliability testing. One rater was a master's degree-level psychologist. The other rater, a bachelor's degree-level research assistant, who had experience conducting interviews in psychopharmacologic clinical trials, was certified by a contract research organization as a Structured Clinical Interview for DSM (SCID) rater. All interviews were reviewed with the senior author (H.M.K.), and expert consultation was sought to resolve diagnostic uncertainties. Jail security and confidentiality precluded tape recording interviews with study subjects for review and reliability rating. Interviews were conducted in an area free from the distraction of other inmates and ongoing activities in the unit.

The principal interview instruments were the SCID-IV^{33,34} and the Addiction Severity Index (ASI).³⁵ Lifetime and current (i.e., the month before incarceration) disorders were assessed with the SCID. The ASI was used to assess problems in seven areas, including medical, employment/support, drug and alcohol use, legal status, family history, social relationships, and psychological status. We used the Psychiatric Research Interview for Substance and Mental Disorders (PRISM)³⁶ Behaviors and Typical Patterns sections to diagnose antisocial personality disorder (ASPD) and borderline personality disorder (BPD), respectively. These two Axis II diagnoses are associated with aggressive and impulsive behaviors.³⁷ The Global Assessment of Functioning Scale (GAF)³⁸ was used as an overall measurement of psychological functioning. The GAF takes into account psychological symptoms and social and occupational functioning on a hypothetical continuum of mental health and illness. Participants were rated for lowest level of functioning during the week of poorest functioning during the month before incarceration. Subjects completed the Medical Outcomes Study 36-Item Short-Form Health Survey (MOS SF-36), a self-rated index of health-related quality of life that can be summarized in two composite subscores: physical health and mental health.³⁹ When necessary, item context was modified to reflect that participants were dealing with the constraints of jail life.⁴⁰

We ascertained the type of crime that led to this index incarceration by using the subject's self-report on the ASI, supplemented by available records, including the Correctional Institution Management Information System (CIMIS) database. For detainees charged with more than one crime, we counted the most serious crime in these analyses. Major crime

categories were based on the Federal Bureau of Investigation's Uniform Crime Reporting (UCR) Program.⁴¹ Part I offenses are defined as serious violent or property crimes. Violent crimes are those committed against persons and consist of homicide or manslaughter, rape, robbery, and assault and/or battery. Property crimes consist of shoplifting or other theft, larceny, burglary, breaking and entering, and arson.

Data Analysis

First, we determined the proportion of our sample ($n = 96$) that was arrested in each crime group: any Part I offense, Part I violent crimes, and non-Part I offenses. Descriptive and bivariate analyses were conducted to delineate sample characteristics and to examine relationships between the types of criminal charges that led to incarceration and the baseline sociodemographics, psychiatric and substance use diagnoses and treatment, level of functioning, and criminal history. Analyses were conducted by chi-square and Fisher's exact tests for categorical variables, independent t tests for continuous variables, and nonparametric tests on non-normally distributed continuous variables.⁴²

Next, multivariate models were constructed with variables identified in the univariate analyses as related to crime type. We used unconditional multivariate logistic regression to determine which variables were associated with these events.⁴³ Although the data structure is cross-sectional, not longitudinal, the measured independent (predictor) variables temporally precede the current arrest.

Statistical analyses were conducted on computer (SPSS for Windows, ver. 6.1.3, SPSS Science Inc., Chicago, IL). Sample sizes for these analyses varied because of missing data. We present data as frequency counts, percentages, and the mean \pm SD, unless otherwise specified. The α level was set to .05 for statistical significance and results are reported as two-tailed tests of hypotheses, unless otherwise specified.

Results

Arrest Charges

The charges against 46 (47.9%) of the women included at least one Part I offense. Twenty-six (27.1%) women were charged with violent crimes and 22 (22.9%) were charged with property crimes; two allegedly committed both types. The most fre-

quent violent crime charges were assault ($n = 11$), battery ($n = 9$), and homicide or manslaughter ($n = 6$). The most frequent property crime charges were shoplifting ($n = 13$) and other theft ($n = 7$). The most frequent charges among the 50 (52.1%) women arrested for one or more non-Part I crimes were drug-related crimes ($n = 23$), probation or parole violation ($n = 11$), and prostitution ($n = 4$).

Crime Type Group Comparisons

Table 1 presents frequency counts for preincarceration characteristics in the whole sample and by crime group. The dichotomized age variable was not significantly related to crime type. When age was a continuous variable, the women arrested for Part I crimes tended to be older (36.3 ± 9.2 years versus 33.3 ± 7.7 years; $t = -1.70$, $df = 94$, $p = .093$), particularly those arrested on charges of committing crimes involving interpersonal violence (38.3 ± 9.2 years; $t = -2.49$, $df = 74$, $p = .015$). Employment history was the only other sociodemographic variable related to arrest for a Part I crime ($\chi^2 = 7.71$, $df = 3$, $p = .052$). A larger proportion of the women who had worked for at least 6 months and a smaller proportion of those involved only in illegal forms of employment were charged with a Part I crime. Two-thirds of the women in blue collar or manual labor jobs were charged with a Part I crime, suggesting a trend between type of employment and Part I crime ($\chi^2 = 8.87$, $df = 4$, $p = .06$). The groups did not differ by social class ranking.⁴⁴

Serious psychosocial impairment was evident. Compared with mean scores in the non-Part I offender group, lower mean GAF scores were found in the Part I offender group (40.5 ± 12.1 versus 47.0 ± 13.5 ; $t = 2.36$, $df = 86$, $p = .021$) and in the violent offense subgroup (37.3 ± 12.3 versus 47.0 ± 13.5 ; $t = 2.92$, $df = 67$, $p = .005$). Table 1 shows that there also were significant differences between offender groups when GAF scores were dichotomized. A cutoff of 40 was selected because most inpatients are rated between 1 and 40, indicating major impairment in several areas.³⁸ In our sample, 41 percent had GAF scores at or below this level. Neither mean nor dichotomized mental and physical component summary scores of the MOS SF-36 differed significantly between groups.

As shown in Table 1, posttraumatic stress disorder (PTSD) was the only diagnosis significantly associated with being arrested for a more serious crime.

Factors Associated with Arrest in Female Detainees

Table 1 Univariate Relationships Between Pre-Jail Variables and Criminal Charge

Pre-Jail Variable	Category	n#	Criminal Offense Types*			p Value† Versus:	
			Non-Part I	Part I	Violent	Part I	Violent
Eligible sample		96	50	46	26		
Sociodemographics							
Age	≤35 y	48	28	20	10	.31	.23
	>35 y	48	22	26	16		
Race/ethnicity	White	28	13	15	8	.03	.13
	African-American	61	30	31	18	.51§	.79§
	Other	7	7	0	0		
Marital status	Married	14	9	5	3	.59	.73
	Separated/widowed/divorced	30	15	15	8		
	Never married	51	25	26	15		
Education	<High school	38	19	19	12	.94	.81
	High school grad/GED	22	12	10	6		
	Any college	35	18	17	8		
Employment	Current	31	16	15	6	.052	.16
	≥6 mo-past	43	17	26	16		
	Illegal only	12	10	2	2		
	<6 mo-past	8	5	3	2		
Occupation level	Professional/business	21	12	9	5	.06	.30
	Clerk/sales/technical	25	11	14	6		
	Manual labor/blue collar	28	10	18	11		
	Not in work force	8	5	3	2		
	Illegal	12	10	2	2		
Psychosocial functioning and quality of life							
GAF scale	≤40	36	12	24	16	.004	.0007
	≥41	52	34	18	7		
MCS¶	≤50	49	25	24	12	1.00	1.00
	>50	9	4	5	2		
PCS#	≤50	29	14	15	8	1.00	.75
	>50	29	15	14	6		
Psychiatric diagnoses							
Any mood disorder**	Yes	37	18	19	11	.66	.43
	No	47	26	21	10		
Major mood disorder††	Yes	21	10	11	7	.61	.38
	No	61	34	27	14		
Any psychotic disorder‡‡	Yes	22	13	9	7	.62	1.00
	No	62	32	30	15		
Any severe mental illness§§	Yes	43	23	20	14	.82	.29
	No	38	22	16	7		
Post-traumatic stress disorder	Yes	14	3	11	4	.02	.21
	No	71	42	29	18		
Other anxiety disorders	Yes	13	5	8	4	.37	.47
	No	73	40	33	19		
Any substance use disorder (SUD)¶¶	Yes	50	27	23	10	.66	.29
	No	35	17	18	12		
Comorbid disorders (Axis I + SUD)	Yes	29	13	16	8	.36	.58
	No	53	30	23	13		
Borderline personality	Yes	24	11	13	7	.63	.77
	No	58	31	27	15		
Antisocial personality	Yes	20	10	10	4	1.00	.75
	No	62	32	30	18		
Any PD##	Yes	34	16	18	9	.65	1.00
	No	48	26	22	13		

Table 1 Continued

Pre-Jail Variable	Category	n#	Criminal Offense Types*			p Value† Versus:	
			Non-Part I	Part I	Violent	Part I	Violent
Treatment							
Inpatient ever	Yes	61	27	34	20	.08	.07
	No	31	20	11	5		
Outpatient ever	Yes	55	29	26	19	1.00	.18
	No	37	19	18	5		
Outpatient recent	Yes	42	19	19	15	.83	.08
	No	50	29	25	9		
Substance use	Yes	36	21	15	6	.29	.12
	No	56	26	30	19		
Psychotropic drugs	Yes	76	36	40	23	.11	.12
	No	17	12	5	2		
Psychotropic drugs AP/AD/MS***	Yes	58	26	32	19	.13	.08
	No	35	22	13	6		
Criminal							
Parole/probation	Yes	28	19	9	3	.07	.01
	No	55	25	30	20		
Number of arrests	≥5	46	20	26	13	.14	.62
	≤4	42	25	17	12		
No. of convictions	≥2	46	21	25	12	.30	1.00
	0–1	42	24	18	13		
Days incarcerated	≥90	42	18	24	13	.19	.31
	<90	41	24	17	10		
Past Part I crime conviction†††	Yes	39	11	28	12	<.0001	.01
	No	41	31	10	8		

* See "Methods" for delineation of criminal offense types. "Violent" is a subgroup of Part I offenses that involves crimes against person(s).
 † Pearson chi-square or Fisher's exact test comparing non-Part I offense group with each of the other two Part I offense groups.
 ‡ Numbers for each variable may not total 96 due to missing data.
 § Because of the small sample sizes, African-American and Other are grouped together for the purpose of the analysis.
 || Poorest function in month before incarceration.
 ¶ MOS SF-36 mental component summary score.
 # MOS SF-36 physical component summary score.
 ** Includes Bipolar I and II, Other Bipolar Disorder, Major Depressive Disorder, Dysthymia, and Depressive Disorder Not Otherwise Specified.
 †† Includes Bipolar I and II and Major Depressive Disorder.
 ††† Includes Schizophrenia, Schizophreniform Disorder, Schizoaffective Disorder, and Psychotic Disorder Not Otherwise Specified.
 §§ Major Mood Disorder or any Psychotic Disorder.
 ||| Includes Panic Disorder, Generalized Anxiety Disorder, and Anxiety Disorder Not Otherwise Specified.
 ¶¶ Alcohol and/or Nonalcohol Abuse or Dependence.
 #¶ Personality Disorder. Includes Borderline, Antisocial, and Schizotypal Personality Disorder.
 *** Antipsychotic, antidepressant, and/or mood stabilizing drug.
 ††† Based on $n = 80$: This was the first arrest for eight subjects. Data are missing for eight subjects.

Compared with a woman who did not meet criteria for a current PTSD diagnosis preceding her arrest, the odds that a woman with a diagnosis of PTSD was arrested for a Part I crime (but not specifically for a violent crime) were more than five times higher (odds ratio (OR) = 5.31, 95% confidence interval (95% CI) = 1.36–20.72).

Higher proportions of women in both the Part I crime group and violent crime subgroup reported at least one psychiatric hospitalization. Compared with the non-Part I offense group, the subgroup charged with violent crime reported significantly more hospitalizations (Mann-Whitney test = 396.5, $p = .02$). There was a trend toward more hospitalizations only

in the Part I crime group as a whole than in the non-Part I crime group (Mann-Whitney test = 843.0, $p = .09$). There also was a trend toward a larger percentage of women in the violent crime subgroup than in the non-Part I offense group that reported receiving antipsychotic or thymoleptic medication ($p = .08$, Fisher's exact test). The groups did not differ significantly in self-reported attendance at outpatient psychiatric or substance use treatment sessions.

Having a prior conviction for a Part I crime was significantly associated with being in both serious crime groups ($p < .01$, Fisher's exact test). Compared with women arrested for a non-Part I crime, a

Factors Associated with Arrest in Female Detainees

Table 2 Step-wise Model of the Contribution of Variables to Arrest for Part I Crimes

Variable	Coefficient	SE	Wald	df	p Value	Odds Ratio*	95% CI†
GAF‡	2.2472	.7433	9.1402	1	.0025	9.4609	2.20–40.61
Past Part I conviction	2.0604	.6287	10.7407	1	.0010	7.8488	2.29–26.91
Parole or probation	–1.2329	.6431	3.6757	1	.0552	.2914	.02–1.03
Employment (reference = employed)			7.7006	3	.0526		
≥6 mo-past	–1.0434	.7220	2.0886	1	.1484	.3523	.09–1.45
Illegal only	–3.5462	1.3049	7.3855	1	.0066	.0288	.002–.37
<6 mo-past	–2.0642	1.9835	1.0830	1	.2980	.1269	.003–6.19
Constant	–.5567	.5368	1.0753	1	.2998		

Model chi-square§ = 33.287, *df* = 6, *p* < .001

n = 76. See “Methods” for delineation of criminal offense types. Numbers for Part I crime analysis are less than 96 due to missing data. Only subjects with data for all relevant variables are included in the analysis. Eleven variables were selected for entry into the initial model: age (continuous variable); employment (four categories; reference is “employed at time of arrest”); ethnicity (White vs. ethnic minority); current PTSD, past psychiatric inpatient treatment, psychotropic treatment (antipsychotic, antidepressant, and/or mood stabilizer), on parole or probation, past conviction for a Part I crime (all dichotomized as yes/no); total time incarcerated (lifetime), number of arrests (both dichotomized using median split); GAF Scale score (dichotomized as ≤40 vs. ≥41).

* Adjusted for the other variables in the model.

† 95% Confidence interval.

‡ GAF Scale. Poorest function in month before incarceration.

§ Likelihood ratio chi-square test.

smaller percentage of women arrested for a violent crime were on probation or parole when arrested (*p* < .01, Fisher’s exact test). This difference approached statistical significance in the comparison between women in the Part I crime group as a whole and the non-Part I crime group (*p* < .07, Fisher’s exact test). Data on number of arrests, convictions, and total days incarcerated were dichotomized by using median splits. Table 1 shows that chi-square analyses failed to distinguish between offender groups. Mann-Whitney tests on the continuous data also produced nonsignificant results.

Multivariate Analyses

Multivariate logistic regression analyses were performed to ascertain which variables were most closely related to arrest for a Part I or violent crime. Variables identified in the bivariate analyses were selected for step-wise entry into each model using *p* = .25 as the screening criterion because the more traditional level of *p* ≤ .05 often fails to identify variables known to be important.⁴³ In these models, the estimated adjusted odds ratio (OR_{adj}) represents the risk of having been arrested on charges of committing a Part I crime (any or violent, respectively) as a function of the predictor variable, controlling for all other variables in the analysis. Because redundancy existed between employment status and occupational level, only employment status was included to avoid colinearity. Age was examined as a continuous variable because exploratory analyses indicated that it performed better when used in this manner.

Table 2 shows the results of modeling variables as related to arrest for a Part I crime. The odds were almost eight times higher that women with a previous conviction for a Part I crime would be rearrested for this type of crime than those without a prior conviction. GAF scores of 40 or less, compared with scores of 41 or more, were associated with a 9.5-fold higher odds of being arrested for a Part I crime. Two variables of marginal statistical significance, employment (*p* = .053) and on probation or parole prior to the current arrest (*p* = .055), also entered into the model. Together, these four variables were significantly associated with being arrested for a Part I crime (likelihood ratio χ^2 = 33.29, *df* = 6, *p* < .0001). In an analysis that controlled simultaneously for the effects of all variables listed in the footnote to Table 2, only previous conviction (*p* = .007) and GAF score (*p* = .009) were significantly associated with arrest for a Part I crime.

Table 3 shows that the same four variables were associated with arrest for a violent crime (likelihood ratio χ^2 = 23.48, *df* = 6, *p* = .0006). Consistent with the results described for the larger group of women arrested for any Part I crime, the odds of arrest for a violent crime of a woman with a GAF score of 40 or less were 12.5 times higher than those of a woman with a GAF score of 41 or higher. Also, the odds of arrest for a violent crime of a mentally ill female detainee on probation or parole were 86 percent lower than those of a detainee not on probation or parole prior to the current arrest. Although selected for the model, neither employment (*p* = .13)

Table 3 Step-wise Model of the Contribution of Variables to Arrest for Violent Crime

Variable	Coefficient	SE	Wald	df	p Value	Odds Ratio*	95% CI†
GAF‡	2.5218	.8693	8.4152	1	.0037	12.4504	2.33–68.42
Parole or probation	–1.9808	.8807	5.0583	1	.0245	.1380	.02–.78
Past Part I conviction	1.2242	.7481	2.6777	1	.1018	3.4015	.78–14.74
Employment (reference = employed)			5.6284	3	.1312		
≥6 mo-past	–.4384	.8821	.2470	1	.6192	.6451	.11–3.63
Illegal only	–2.5673	1.3616	3.5549	1	.0594	.0767	.005–1.11
<6 mo-past	–3.0464	1.6220	3.5275	1	.0604	.0475	.002–1.14
Constant	–1.1005	.6406	2.9510	1	.0858		

Model chi-square§ = 23.483, df = 6, p = .0006

n = 62. See “Methods” for delineation of criminal offense types. “Violent” is a subgroup of Part I offenses that involves crimes against person(s). Numbers for interpersonal violence analysis were less than 62 due to missing data. Only subjects with data for all relevant variables are included in this analysis. Twelve variables were selected for entry into the initial model: age (continuous variable); employment (four categories; reference is “employed at time of arrest”); ethnicity (White versus ethnic minority); current PTSD, past psychiatric inpatient treatment, current outpatient treatment, outpatient treatment ever, substance use treatment ever, psychotropic treatment (antipsychotic, antidepressant, and/or mood stabilizer), on parole or probation, past conviction for a Part I crime (all dichotomized as yes/no); GAF Scale score (dichotomized as ≤40 versus ≥41).

* Adjusted for the other variables in the model.

† 95% Confidence interval.

‡ GAF Scale. Poorest function in month before incarceration.

§ Likelihood ratio chi-square test.

nor a prior Part I criminal conviction ($p = .10$) was significantly associated with arrest for a violent crime after controlling for the effects of the other variables in the model. After controlling for the effects of all variables listed in the footnote to Table 3, only the GAF score was significantly associated with arrest for a violent crime ($p = .03$).

Discussion

In this study of mentally ill detainees in the women’s psychiatric unit of a large urban county jail, we examined whether those who were arrested on more serious criminal charges could be distinguished by features of their psychiatric illnesses, functional status, sociodemographics, or criminal background. Our purpose was not to determine, as others have done, whether persons with mental illness are more likely than non-mentally ill persons to commit violent acts. We were concerned with discerning what factors in mentally ill offending women were associated with arrest on charges of more serious types of criminal behavior. Similar to the sample described almost two decades ago by Lamb and Grant,⁴⁵ the women in our sample had had extensive experience with both the criminal justice and the mental health systems.

We found that 27 percent of our participants were charged with committing a violent crime, similar to the 23 percent so charged in a Los Angeles county jail for women.⁴⁵ Lamb and Grant⁴⁵ found “severe, overt psychopathology” in 58 percent of their sample, but they did not report whether this group of

women committed a larger percentage of the felonies or violent crime. In an earlier study of 20 female jail detainees referred for psychiatric examination, 25 percent had a diagnosis of schizophrenia, 15 percent a diagnosis of depression, and 20 percent a diagnosis of secondary depression.⁴⁶ Insufficient detail was given to ascertain the percentage of the 80 percent charged with a felony who had any of these severe illnesses. In a study of women randomly sampled from five California county jails, Washington and Diamond⁴⁷ reported that 48 (42%) of 115 were given a DSM-II diagnosis; 9 (7.8%) had diagnoses of severe disorders (schizophrenia or manic depression). Reports of prior felony conviction were more than twice as prevalent among those with nonsevere mental illness (31.8% versus 14.3%).

More recently, Teplin *et al.*¹⁶ found that 70 percent of pretrial female detainees met criteria for at least one psychiatric disorder within six months of incarceration, including 15 percent with a severe disorder and 60 percent with a substance use disorder. Most detainees with psychiatric disorders in their study were arrested for nonviolent crimes. There was no significant association between severe mental illness and seriousness of arrest charge in our sample. Although our sample included a higher percentage of women who were arrested for violent crimes (27% versus 16%), comparison of our combined Part I offense group with that of the combined violent and property crimes group of Teplin *et al.*¹⁶ revealed no significant difference in percentages (48% in

the present study versus 51% in the study by Teplin *et al.*).

Data in a recent Canadian study of randomly sampled, predominantly pretrial offenders showed that persons with and those without a mental disorder tended to have similar percentages of both major and minor offenses.⁴⁸ Exceptions included disproportionately higher frequencies of violent crimes committed by offenders with adjustment disorders and lower frequencies by offenders with psychotic disorders.⁴⁸ We found that detainees with PTSD had a higher odds of arrest for Part I crimes than did detainees without PTSD, but this difference, as well as the difference related to older age at the time of the current arrest, disappeared in multivariate analyses. Neither psychotic disorders nor severe mental illness nor substance abuse was uniquely associated with being arrested for a Part I or violent crime.

Studies of representative samples of incarcerated persons suggest that psychiatric disorders, especially major mental and substance use disorders, are more prevalent among detainees than in the general population.^{14,16} That persons with major mental disorders are more likely than nondisordered persons to commit criminal acts, including violence, has been evident since the 1960s.¹⁴ Since deinstitutionalization of the mentally ill began in the 1960s, arrest rates of severely mentally ill persons have exceeded arrest rates in the general population, but most mentally ill offenders who end up in jail have been charged with relatively minor and nonviolent offenses.^{9,49}

Torrey⁹ delineated three factors that are commonly shared by the subgroup of mentally ill offenders likely to commit more serious criminal acts, including interpersonal violence. These factors are a history of violent behavior, concurrent alcohol or drug abuse, and noncompliance with medication (particularly antipsychotic drugs). Nevertheless, the clinical accuracy of predicting violent behavior is modest at best and is especially problematic among female offenders.²² Lidz *et al.*²² demonstrated remarkable variation in the clinical accuracy of predicting violence after controlling for demographic variables.

In our sample, functional impairment was the best indicator of arrest for more serious or violent crimes. According to the multivariate analysis, women who had functioned more poorly in the month preceding incarceration, as indicated by a lower GAF score, had higher odds of being arrested for more serious crimes,

including violent offenses. Use of the GAF Scale as a measure of functioning has been questioned because the score can be influenced by symptoms.³⁸ Weissman *et al.*⁵⁰ compared self-report measures of functioning. Because item content and coverage of these instruments differ and the correlations among them were only modest, they recommended using more than one scale, if functional status is a critical outcome measure. Thus, attempts to replicate our findings should include other measures that assess different domains of functioning.

Consistent with the belief that past behavior is the best predictor of future behavior, previous conviction for a serious crime was related to current arrest for a serious crime, although not specifically for a violent offense. Clinical, criminal, and sociodemographic factors were otherwise noncontributory in distinguishing the subgroup charged with committing more serious criminal (including violent) acts from the subgroup charged with committing less serious crimes.

Although our sample is fairly small, it was selected randomly, and it is representative of women admitted to the psychiatric service in a large urban jail. The women in our sample were demographically similar to those in the sample of those interviewed at intake at the same facility at least three years earlier,¹⁶ which was demographically similar to samples studied in many large urban jails.^{51,52} Furthermore, we conducted interviews two to four weeks after intake, so that the subjects had an opportunity to adjust to the jail environment. Our sample did not differ significantly in ethnicity (white versus minority) or marital status from that of the sample in the study by Teplin *et al.*¹⁶ A significantly larger percentage of our sample, however, was at least 35 years of age (mean and median, 35 years, versus 28 years in Teplin *et al.*¹⁶), was educated beyond high school, and was legally employed at the time of arrest.

A limitation of our study is that a formal reliability test was not conducted between the two clinical raters, due to insufficient time and resources to complete such a study. Instead, review of all interviews by the senior author served as a quality control to standardize the interview results.

Recidivism was common in our sample as well as in the sample in the studies by Teplin *et al.*¹⁶ and Lamb and Grant.⁴⁵ This was the first arrest for only eight (8.3%) women in our sample, similar to the six percent in the sample studied by Lamb and Grant

and not significantly different from the 15 percent with no prior arrests in the sample of Teplin *et al.*

Women with mental illness are being incarcerated in increasingly greater numbers and for serious and violent crimes. Commission of a serious crime results in incarceration because the criminal justice system is charged by society with the responsibility for removing from the community persons charged with serious crimes.⁴⁵ The contribution of criminalization of the mentally ill may apply to only a minority of these offenders.⁴⁸ As we have confirmed, the prediction of serious criminal and violent behavior is problematic. Moreover, many of these women will be released into the community and, as Lamb and Grant⁴⁵ note, society's nonresponse to these mentally ill offenders' need for structure and control can lead to serious consequences for the person and for society. As part of a prevention approach to reducing the risk of these outcomes, clinicians must consider the potential for criminal behavior, especially in those with a history of arrest and conviction and in those with more severe functional impairment (regardless of the presence of psychosis). In the community, mental health services, at least on a par with those available to men, must be made available to these women.^{26,27,53}

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