

2009

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Repository Citation

McCabe, Patrick J.; Druhn, Nicholas; Fisher, William H.; Roy-Bujnowski, Kristen M.; Simon, Lorna J.; and Grudzinskas, Albert J. Jr., "Association of Demographic Factors and Comorbid Diagnoses with Crime Type in an Arrest Cohort with Schizophrenia and/or Related Psychosis" (2009). *Systems and Psychosocial Advances Research Center Publications and Presentations*. Paper 651.
http://escholarship.umassmed.edu/psych_cmhsr/651

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Comments

Presented at Psychiatry Research Day at the University of Massachusetts Medical School, 2009.

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BACKGROUND

The implications of the interface between the criminal justice system and individuals with schizophrenia persist despite decades of research on criminalization and risk of arrest. Research exploring the broader construct of criminality has predominantly focused on individuals with severe mental illness as a collective. This study diverges from others by examining diagnoses comorbid with schizophrenia and related psychoses and their relationships with risk of arrest across a spectrum of criminal categories ranging in severity.

METHODS

Demographic factors and comorbid diagnoses were collected from a 10-year arrest cohort of 1,538 clients of a public mental health system who had received an inpatient diagnosis of schizophrenia or related psychosis. The likelihood of arrest across six broadly defined criminal charge categories were assessed cross-sectionally using demographics and comorbid diagnoses in separate logistic regression models.

RESULTS

Across our cohort, 63% experienced arrest for nuisance or low-level offenses, 50% were arrested for serious violent crimes, and 45% were charged with property crimes over the 10-year period. Comorbid antisocial personality disorder produced the strongest relationships with arrest; comorbid substance use or alcohol use disorders, prevalent among 46% of our cohort, elevated risk of arrest across all criminal categories.

TABLE 1. DISTRIBUTION OF SCHIZOPHRENIA AND RELATED PSYCHOSES

	Schizophrenia or related psychoses	Schizophrenic disorders	Other nonorganic psychoses	Delusional disorders
	n (%)	n (%) (row %)	n (%) (row %)	n (%) (row %)
Schizophrenia or related psychoses	1538 (100.0)			
Schizophrenic disorders*	1417 (92.1)			
Other nonorganic psychoses*	212 (13.8)	129 (8.4) (60.8)		
Delusional disorders*	56 (3.6)	29 (1.9) (51.8)	9 (0.6) (16.1)	
Transient organic psychotic conditions*	32 (2.1)	18 (1.2) (56.3)	9 (0.6) (28.1)	2 (0.1) (6.3)

* ICD-9-CM codes 295.00-295.85
 * ICD-9-CM codes 298.0-298.9
 * ICD-9-CM codes 297.0-297.9
 * ICD-9-CM codes 293.81 and 293.82

TABLE 2. CHARACTERISTICS OF ARREST COHORT WITH SCHIZOPHRENIA OR RELATED PSYCHOSES

	All (N=1538)	Males with Schizophrenia (N=1184)	Females with Schizophrenia (N=354)
	N (%)	N (%)	N (%)
Male gender	1184 (77.0)		
Age:			
18-25	165 (10.7)	139 (11.7)	26 (7.3)
26-35	540 (35.1)	406 (34.3)	134 (37.9)
36-45	525 (34.1)	412 (34.8)	113 (31.9)
46-85	308 (20.0)	227 (19.2)	81 (22.9)
Age, mean yrs (SD)	37.4 (9.9)	37.3 (10.0)	38.0 (9.7)
Race: white=1, non-white=0	1162 (75.6)	882 (74.5)	280 (79.1)
Crime type:			
Serious Violent Crime	767 (49.9)	616 (52.0)	151 (42.7)
Less Serious Violent Crime	518 (33.7)	434 (36.7)	84 (23.7)
Property Crime	695 (45.2)	541 (45.7)	154 (43.5)
Crimes Against Public Order	969 (63.0)	740 (62.5)	229 (64.7)
Crimes Against Public Decency	470 (30.6)	394 (33.3)	76 (21.5)
Motor Vehicle Crime	301 (19.6)	247 (20.9)	54 (15.3)
Comorbid diagnoses:			
Antisocial Personality Disorder	42 (2.7)	39 (3.3)	3 (0.9)
Alcohol Use Disorders	398 (25.9)	330 (27.9)	68 (19.2)
Substance Use Disorders	478 (31.1)	369 (31.2)	109 (30.8)
Misc. Personality Disorders	150 (9.8)	112 (9.5)	38 (10.7)
Impulse Control Disorders	31 (2.0)	29 (2.5)	2 (0.6)
Depressive Disorders	136 (8.8)	90 (7.6)	46 (13.0)
Anxiety Disorders	79 (5.1)	39 (3.3)	40 (11.3)
Borderline Personality Disorder	85 (5.5)	28 (2.4)	57 (16.1)
Bipolar Disorder	349 (22.7)	246 (20.8)	103 (29.1)

OFFENSE CATEGORIES

Serious Violent Crime	Murder, non-negligent manslaughter, forcible rape, robbery (including armed robbery), aggravated assault and battery with a dangerous weapon, against a person over age 65, against a disabled person, or to collect a debt
Less Serious Violent Crime	Domestic violence (not resulting in a charge of serious violent crime), simple assault, simple assault and battery, assault and battery on a police officer, threatening behavior or intimidation, indecent sexual assault (not rising to the legal definition of forcible rape), and violation of a restraining order
Property Crime	Burglary, larceny of an item worth more than \$500, welfare fraud, receiving stolen property, uttering (passing bad checks), breaking and entering, arson, and motor vehicle theft. Theft or shoplifting of an item worth less than \$500; malicious destruction of property
Crimes Against Public Order	Being a disorderly person, disturbing the peace, setting a false alarm, instigating a bomb hoax, trespassing, and consuming alcohol in a public place in violation of open-container law. Misdemeanors with low rates of occurrence not easily classified in any of the above categories
Crimes Against Public Decency	Offenses related to sex for hire (soliciting prostitution or being a common street walker), indecent exposure, and lewd and lascivious behavior. Possession of a controlled substance, possession with intent to distribute and distribution or manufacture of or trafficking in a controlled substance, and conspiracy to violate the Controlled Substance Act. Carrying a dangerous weapon, illegally discharging a firearm, and possessing a firearm without a license or permit
Motor Vehicle Crime	Operating a vehicle without a license or without compulsory insurance or so as to endanger, attaching license plates illegally, leaving the scene of an accident, or driving while intoxicated

PTSD AND SERIOUS VIOLENT CRIME

We dichotomized comorbid anxiety disorders into two variables, those with PTSD and those without. Replacing the anxiety disorder indicator with these two variables in the full cohort Serious Violent Crime model revealed that comorbid PTSD was associated with Serious Violent Crime arrest (OR = 2.35, 95% CI: 1.20-4.59, p = 0.013) and non-PTSD anxiety disorders was not (OR = 1.37, 95% CI: 0.64-2.92, p = 0.418). This finding was similar for males and females and consistent with observations made about violent behavior and a history of trauma in similar populations.

CONCLUSION

Diagnoses comorbid with schizophrenia carry implications for risk of arrest across a spectrum of offense categories. Risk assessment and interventions aimed at reducing offending and re-offending should identify and target comorbid psychiatric and substance abuse disorders in their efforts to reduce the likelihood of justice involvement among persons with schizophrenia.

LOGISTIC REGRESSION TABLES

TABLE 3. LOGISTIC REGRESSION MODELS OF CRIME TYPE BY DEMOGRAPHICS & COMORBID PSYCHIATRIC DISORDERS AMONG COHORT WITH SCHIZOPHRENIA OR RELATED PSYCHOSES* & AT LEAST ONE ARREST

Covariates	Serious Violent Crime	Less Serious Violent Crime	Property Crime	Crimes Against Public Order	Crimes Against Public Decency	Motor Vehicle Crime
	OR (95% CI) ^b (all n=1538)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Gender (male=1, female=0)	1.43 (1.10-1.85)	1.88 (1.40-2.52)*	1.00 (0.77-1.30)	0.88 (0.68-1.15)	1.67 (1.24-2.27)*	1.38 (0.98-1.95)
Age in 1992	0.99 (0.98-1.00)	0.99 (0.98-1.00)	0.98 (0.97-0.99)*	1.00 (0.99-1.02)	0.98 (0.97-1.00)	0.96 (0.94-0.97)*
Race (white=1, other=0)	0.85 (0.43-0.71)*	0.79 (0.61-1.02)	0.67 (0.52-0.85)	0.63 (0.48-0.81)	0.57 (0.44-0.73)*	1.25 (0.91-1.70)
Antisocial Personality Disorder	2.80 (1.16-5.40)	5.22 (2.42-11.25)*	3.48 (1.60-7.89)	2.89 (1.18-7.09)	1.77 (0.91-3.43)	0.99 (0.46-2.12)
Alcohol Use Disorders	1.21 (0.95-1.54)	1.26 (1.00-1.65)	1.30 (1.02-1.66)	1.19 (0.92-1.53)	1.11 (0.86-1.44)	1.68 (1.26-2.23)*
Substance Use Disorders	1.37 (1.08-1.73)	1.32 (1.04-1.68)	1.71 (1.36-2.16)*	1.72 (1.34-2.21)*	2.27 (1.78-2.90)*	0.92 (0.69-1.22)
Misc. Personality Disorders	1.41 (0.99-2.02)	1.35 (0.94-1.94)	1.56 (1.09-2.24)	1.31 (0.90-1.92)	0.78 (0.53-1.16)	0.78 (0.49-1.22)
Impulse Control Disorders	1.55 (0.70-3.46)	1.24 (0.57-2.68)	0.56 (0.25-1.21)	0.62 (0.29-1.33)	1.37 (0.64-2.96)	0.90 (0.37-2.16)
Depressive Disorders	0.83 (0.57-1.22)	0.96 (0.65-1.44)	1.37 (0.93-2.01)	1.07 (0.72-1.60)	1.05 (0.69-1.58)	1.53 (1.00-2.35)
Anxiety Disorders	1.87 (1.12-3.13)	1.41 (0.84-2.38)	1.03 (0.62-1.71)	0.99 (0.59-1.66)	0.82 (0.46-1.46)	0.72 (0.38-1.36)
Borderline Personality Disorder	1.02 (0.62-1.69)	1.05 (0.62-1.79)	0.71 (0.43-1.18)	0.92 (0.55-1.54)	0.81 (0.46-1.45)	0.83 (0.45-1.56)
Bipolar Disorders	0.92 (0.72-1.19)	1.46 (1.12-1.89)	1.04 (0.80-1.34)	1.34 (1.03-1.75)	0.91 (0.69-1.20)	1.39 (1.03-1.88)

* ICD-9-CM codes 293.81 and 293.82, 295.00-295.95, 297.0-297.9 and 298.0-298.9
^bOdds Ratio with 95% confidence intervals
 *p-value < 0.001

TABLE 4. LOGISTIC REGRESSION MODELS OF CRIME TYPE BY DEMOGRAPHICS AND COMORBID PSYCHIATRIC DISORDERS AMONG MALES WITH SCHIZOPHRENIA OR RELATED PSYCHOSES* AND AT LEAST ONE ARREST

Covariates	Serious Violent Crime	Less Serious Violent Crime	Property Crime	Crimes Against Public Order	Crimes Against Public Decency	Motor Vehicle Crime
	OR (95% CI) ^b (all n=1184)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Age in 1992	0.99 (0.98-1.00)	0.99 (0.974-0.999)	0.98 (0.96-0.99)*	1.00 (0.98-1.01)	0.99 (0.97-1.00)	0.96 (0.94-0.98)*
Race (white=1, other=0)	0.80 (0.38-0.66)*	0.81 (0.61-1.07)	0.74 (0.56-0.97)	0.66 (0.50-0.89)	0.61 (0.46-0.80)*	1.03 (0.74-1.44)
Antisocial Personality Disorder	2.78 (1.23-6.29)	5.23 (2.32-11.78)*	2.98 (1.35-6.60)	2.33 (0.93-5.82)	1.79 (0.90-3.56)	0.99 (0.44-2.19)
Alcohol Use Disorders	1.16 (0.89-1.52)	1.23 (0.93-1.62)	1.42 (1.08-1.86)	1.30 (0.98-1.73)	1.05 (0.79-1.39)	1.56 (1.14-2.13)
Substance Use Disorders	1.24 (0.95-1.62)	1.30 (0.99-1.70)	1.75 (1.34-2.28)*	1.39 (1.05-1.83)	1.92 (1.46-2.51)*	0.85 (0.62-1.18)
Misc. Personality Disorders	1.38 (0.91-2.09)	1.51 (1.00-2.29)	1.65 (1.08-2.51)	1.18 (0.76-1.83)	0.75 (0.48-1.17)	0.77 (0.46-1.29)
Impulse Control Disorders	1.47 (0.66-3.30)	1.24 (0.55-2.76)	0.55 (0.25-1.24)	0.56 (0.25-1.25)	1.52 (0.70-3.30)	0.78 (0.31-1.99)
Depressive Disorders	1.08 (0.69-1.71)	0.91 (0.57-1.46)	1.19 (0.75-1.90)	1.29 (0.77-2.15)	1.46 (0.92-2.32)	1.37 (0.82-2.28)
Anxiety Disorders	1.43 (0.72-2.84)	1.71 (0.86-3.39)	1.14 (0.57-2.28)	2.46 (1.04-5.79)	0.82 (0.40-1.71)	0.92 (0.41-2.04)
Borderline Personality Disorder	0.76 (0.34-1.72)	1.05 (0.46-2.40)	0.75 (0.33-1.72)	1.74 (0.63-4.85)	0.63 (0.26-1.56)	0.45 (0.13-1.37)
Bipolar Disorders	0.88 (0.66-1.19)	1.50 (1.11-2.03)	1.10 (0.82-1.49)	1.52 (1.10-2.10)	0.89 (0.65-1.23)	1.52 (1.08-2.15)

* ICD-9-CM codes 293.81 and 293.82, 295.00-295.95, 297.0-297.9 and 298.0-298.9
^bOdds Ratio with 95% confidence intervals
 *p-value < 0.001

TABLE 5. LOGISTIC REGRESSION MODELS OF CRIME TYPE BY DEMOGRAPHICS AND COMORBID PSYCHIATRIC DISORDERS AMONG FEMALES WITH SCHIZOPHRENIA OR RELATED PSYCHOSES* AND AT LEAST ONE ARREST

Covariates	Serious Violent Crime	Less Serious Violent Crime	Property Crime	Crimes Against Public Order	Crimes Against Public Decency	Motor Vehicle Crime
	OR (95% CI) ^b (all n=354)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Age in 1992	0.98 (0.96-1.01)	1.02 (0.99-1.05)	1.00 (0.98-1.03)	1.04 (1.01-1.07)	0.97 (0.94-1.01)	0.95 (0.92-0.99)
Race (white=1, other=0)	0.85 (0.49-1.48)	0.65 (0.34-1.20)	0.41 (0.23-0.70)	0.44 (0.24-0.83)	0.41 (0.22-0.76)	NA ^c
Antisocial Personality Disorder	NA ^c	NA ^c	NA ^c	NA ^c	NA ^c	NA ^c
Alcohol Use Disorders	1.48 (0.84-2.63)	1.77 (0.98-3.22)	0.94 (0.53-1.65)	0.79 (0.44-1.41)	1.57 (0.79-3.10)	2.40 (1.23-4.72)
Substance Use Disorders	1.76 (1.06-2.93)	1.59 (0.89-2.84)	1.82 (1.09-3.05)	1.74 (1.00-3.00)	4.42 (2.42-8.07)*	1.15 (0.59-2.26)
Misc. Personality Disorders	1.54 (0.73-3.24)	0.92 (0.41-2.06)	1.40 (0.68-2.86)	1.76 (0.79-3.93)	0.66 (0.26-1.67)	removed ^d
Impulse Control Disorders	NA ^c	NA ^c	NA ^c	NA ^c	NA ^c	NA ^c
Depressive Disorders	0.40 (0.18-0.88)	removed ^d	1.88 (0.94-3.77)	0.87 (0.43-1.75)	0.25 (0.07-0.85)	2.31 (0.97-5.46)
Anxiety Disorders	2.60 (1.14-5.92)	1.11 (0.48-2.59)	0.98 (0.45-2.14)	0.58 (0.27-1.27)	0.91 (0.32-2.54)	0.38 (0.12-1.19)
Borderline Personality Disorder	1.13 (0.58-2.22)	1.37 (0.66-2.85)	0.80 (0.41-1.56)	1.04 (0.53-2.06)	1.18 (0.51-2.72)	1.18 (0.51-2.73)
Bipolar Disorders	1.12 (0.69-1.82)	1.36 (0.80-2.32)	0.84 (0.51-1.36)	0.85 (0.52-1.41)	removed ^d	removed ^d

* ICD-9-CM codes 293.81 and 293.82, 295.00-295.95, 297.0-297.9 and 298.0-298.9
^bOdds Ratio with 95% confidence intervals
^cp-value < 0.001
^dNot appropriate for modeling, low cell count
 *Removed by backwards stepwise selection to maintain >=9 events per predictor

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