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The potential for violence in arrests of persons with mental illness

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Abstract

Purpose – The purpose of this paper is to determine whether police use of force and suspect resistance are more likely to occur in arrest encounters involving suspects with mental health problems.
Design/methodology/approach – The study uses data from interviews with 942 individuals recently arrested by officers in more than a dozen different police departments in Maricopa County, Arizona in 2010. Both logistic and ordinal regression analyses are used to predict two models of suspect resistance (resistance in the current arrest, resistance in a previous police contact) and three models of police use of force (any force in the current arrest, ordinal measure of force in the current arrest, and any force in a previous contact).
Findings – The results provide empirical support for a link between mental illness and increased resistance against the police. With regard to arrestee mental illness and use of force, the results are mostly consistent with prior research suggesting a null relationship, with an important caveat involving greater use of higher level, weapon force.
Research limitations/implications – The study suffers from the traditional limitations associated with self-report data, and the generalizability of the findings beyond arrest encounters in Maricopa County is not known. The explanatory power of the multivariate models was relatively weak, suggesting a good degree of unexplained variance.
Practical implications – The non-significant relationship between arrestee mental illness and use of force is consistent with efforts by police to improve their response in these complex encounters. The significant weapon-force finding may suggest that police respond to the affronts of mentally ill suspects differently than affronts from other suspects. The non-significance of key extra-legal factors suggests that police decisions to use force were not influenced by arrestee race/ethnicity, age, or social standing.
Originality/value – Unlike previous studies, the current research uses self-reported measures of mental health problems. The current study also examines arrests from more than a dozen different police departments.

Keywords Resistance, Mental illness, Criminalization, Use of force
Paper type Research paper

Introduction

Handling encounters involving persons with mental illness (PMIs) has become an increasingly important part of routine police work (Deane *et al.*, 1999; Borum *et al.*, 1998). Despite the increasing frequency of these contacts, there is a long history of poor police response to PMIs highlighted by the potential for those encounters to end in violence (Lurigio *et al.*, 2008). For example, data indicate that PMIs are four times more likely to be fatally shot by police than citizens without mental illness; alternatively, though police line-of-duty deaths are rare, those deaths are five times more likely to be committed by an assailant with a mental illness (Treatment Advocacy Center, 2005;

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see also Lurigio *et al.*, 2008). Police-citizen encounters that end in violence are highly controversial and can have long-term devastating consequences (Fyfe, 1988; Klinger, 2004) – consequences that are aggravated when PMIs are involved.

Despite the potential for violence in these interactions, there have been few studies examining the dynamics of police encounters with PMIs, particularly the critical interactions where force is used. In fact, only three studies to date have explored police use of force in encounters with PMIs (Kaminski *et al.*, 2004; Johnson, 2011; Terrill and Mastrofski, 2002). Notably, results from all three studies found no association between suspect mental illness and likelihood of police use of force. Unfortunately, the use of force/suspect mental illness question has not been investigated in more than a decade and additional research is needed to explore key features of these encounters. In particular, research is needed to investigate the relationship between mental illness and increased likelihood of resistance (a proxy for violence), as well as the role mental illness plays in police officer decisions to use force. This knowledge gap is especially troubling when considering the debate over the "criminalization" of mental illness (Abramson, 1972; Engel and Silver, 2001) and efforts to improve police handling of encounters involving PMIs (e.g. Crisis Intervention Teams (CIT); Dupont and Cochran, 2000).

The current study examines this issue using data from interviews with 942 individuals recently arrested by officers in more than a dozen different police departments in Maricopa County, Arizona in 2010. The study seeks to address the following research questions:

RQ1. Is there a relationship between suspect mental health problems and likelihood of resistance against police during arrest encounters?

RQ2. Is there a relationship between suspect mental health problems and likelihood of police use of force during arrest encounters?

Importantly, the analyses focus on the current arrest that resulted in their participation in the study, as well as a previous encounter with police during the past year ($n = 662$). Overall, the paper seeks to clarify the relationships between mental health problems, resistance, and police use of force, and to improve our understanding of these increasingly frequent, complex police-citizen encounters.

Prior research

PMIs, the police, and criminalization

Currently, there are more individuals with mental illness in jail or prison than all the state run psychiatric institutions in the USA combined (Council of State Governments, 2007; Sigurdson, 2000). This has not always been the case, however. At the height of the institutionalization movement there were over 500,000 individuals living in inpatient psychiatric facilities (Torrey, 1997). After 1955 this trend began to change drastically. Within 30 years, the number of persons in mental institutions had decreased by 80 percent to just over 100,000 (Mechanic and Rochefort, 1990), and by 2005, that number had dropped to 52,000 (Lurigio *et al.*, 2008). Although deinstitutionalization successfully emptied psychiatric asylums, the movement's second component fell far short, as tax dollars for the development of community mental health treatment never materialized (Bachrach, 1978; Gilligan, 2001).

The movement of so many PMIs from psychiatric institutions to the community without proper treatment or care inevitably led to increased contact with the police

(Bonovitz and Bonovitz, 1981; Torrey, 1997). Early research by police sociologists painted a clear picture of how police managed PMIs (and other marginalized populations) with peacekeeping as a central feature. Bittner (1967b) noted that police attempt to provide "psychiatric first aid" to divert those with mental illness from the criminal justice system. Moreover, Bittner (1967a) asserted that officers assigned to handle marginalized citizens on skid row developed specific techniques to reduce risk of violence and successfully manage their beats, while also protecting this vulnerable population (see also Muir, 1977; Van Maanen, 1978).

Alternatively, some scholars have suggested that police interactions with PMIs have become increasingly "criminalized." Abramson (1972) described a process whereby the untreated individuals with mental illness come into contact with the police and are arrested. In jail, they become treatment compliant and are subsequently released to the community; but the cycle starts again once these individuals are released to the community. Abramson (1972) referred to this process as the "criminalization of the mentally ill," and his pioneering work received empirical support (e.g. Lurigio, 2000; Sosowsky, 1978; Teplin, 1983). For example, Teplin's (1984) was among the first to empirically examine how police resolve encounters with PMIs. She reported that the probability of being arrested was almost 20 percent greater for PMIs. Teplin and Pruett (1992) later referred to the police as "street level psychiatrists," noting that they often preferred to deal with PMIs informally. However, when informal resolutions were not possible, officers were often left with arrest (or "mercy bookings") as the only practical alternative (Teplin, 1983; Wells and Schafer, 2006).

More recent studies have questioned the criminalization hypothesis and the extent to which PMIs are at greater risk of arrest. For instance, Engel and Silver (2001) used data from two large, multi-city policing projects and found that despite higher levels of non-compliance with police, PMIs were significantly less likely to be arrested. Novak and Engel (2005) examined police-public contacts in Cincinnati and reported similar findings (see also Fisher *et al.*, 2006; Peterson *et al.*, 2010).

The changing context for police encounters with PMIs

As part of an effort to reduce the flow of PMIs into the criminal justice system (e.g. reduce criminalization), police departments across the country have sought to better prepare their officers to handle such encounters (Lurigio *et al.*, 2008). The most popular of these programs is the CIT, developed in Memphis in the late 1980s. As part of the program, officers receive 40 hours of training led by mental health specialists, and calls for service involving individuals with mental health problems are dispatched to CIT officers (Cochran *et al.*, 2000). Dupont and Cochran (2000) found that the CIT program in Memphis reduced injuries to both police and citizens while successfully diverting PMIs into treatment. The program, which has been identified as a "model program" by the National Alliance for the Mentally Ill and the US Department of Justice, has been replicated in numerous jurisdictions across the USA (Lurigio *et al.*, 2008).

At the same time, however, many police departments have adopted new strategies that emphasize public order and minor quality of life offenses, and as a consequence, have led to increased formal interactions between police and PMIs (e.g. Broken Windows; zero tolerance strategies; Lurigio *et al.*, 2008). For example, in 2006 the LAPD implemented the Safer Cities Initiative (SCI) to address crime and disorder in the skid row section of Los Angeles. The SCI focussed on low-level crime with aggressive saturation patrol, resulting in large numbers of citations and arrests (Berk and MacDonald, 2010; White, 2010).

The potential for violence in police encounters with PMIs

The increased formality of police contacts with the mentally ill via zero tolerance (and similar) strategies raises concerns about an enhanced risk for violence, either through suspect resistance, police use of force, or both. Though police use of force is a statistically rare event, occurring in about 1.4 percent of all police-citizen encounters (Bureau of Justice Statistics, 2011), the volume of encounters in a year (approximately 40 million) translates into an estimated 560,000 use of force incidents per year, or more than 1,500 events per day. Moreover, use of force by police is much more common in arrest encounters, as research indicates about one in five arrests involves the use of some level of police force (Hickman *et al.*, 2008).

Over the past four decades, an abundance of research has focussed on identifying factors that influence police officer decisions to use force, and much of that research has focussed on characteristics of the participants in the encounter, especially the suspect[1]. Most relevant for the current study is the research examining police encounters with individuals who are impaired (intoxicated, under the influence of drugs, or mentally ill). Several studies have shown that police use of force is more likely in encounters with suspects who are impaired, but much of this work has not specified the type of impairment (Crawford and Burns, 1998; Engel *et al.*, 2000; Garner and Maxwell, 2000; Garner *et al.*, 2002; Terrill and Mastrofski, 2002)[2]. A few studies have shown that use of force rates vary by citizen drug and alcohol impairment. For example, Garner *et al.* (1996) found that alcohol impairment was associated with higher rates of use of force, but drug impairment was not (see also Bayley and Garofalo, 1989; Friedrich, 1980). Kaminski *et al.* (2004, p. 329) found the exact opposite, however.

Only three studies to date have examined whether police use of force is more frequent in encounters with suspects who have a mental illness. Using data on 619 police encounters in two Oregon cities from 1995, Johnson (2011) examined whether suspects with mental illness were more likely than non-disordered suspects to experience police use of force. Johnson (2011, p. 141) examined two measures of force, any force used and serious force only, and found, "no evidence to suggest that mentally disordered individuals receive harsher treatment at the hands of officers than do non-disordered persons." Terrill and Mastrofski (2002) examined 3,116 police-citizen encounters in two cities (from 1996 to 1997) and found that a number of factors were associated with increased coercive behavior by police, including suspect sex, race/ethnicity, class, age, and drug/alcohol impairment. However, suspect mental illness was not among those factors. Kaminski *et al.* (2004) examined use of force in more than 2,000 arrests made by officers in one department (in 2000-2001) and found that a combined measure of impairment (drug, alcohol, and mental illness) was positively associated with use of force. However, the relationship was explained almost entirely by drug impairment, and the authors concluded, "that impairment by mental illness does not appear to increase the likelihood of use of force" (Kaminski *et al.*, 2004, p. 330). The picture emerging from these three studies suggests a null relationship between suspect mental illness and police use of force. However, each of the aforementioned studies examined police encounters from 2001 or earlier. Given the ongoing developments in police strategies over the last decade (see above, e.g. CIT, zero tolerance) and the continuing debate over criminalization, additional research is needed to more sufficiently explore questions surrounding police encounters with PMIs, most notably the potential for those interactions to end in violence.

Methods and data

The current study seeks to address these questions through an examination of 942 arrests made by officers in more than a dozen different police departments in Maricopa County, Arizona from June 1, 2010 through December 31, 2010. Data were collected through interviews of arrestees as part of the Arizona Arrestee Reporting Information Network (AARIN). The AARIN project in Maricopa County was originally established in 1987 under the auspices of the Drug Use Forecasting program, and later the Arrestee Drug Abuse Program (ADAM); both sponsored by the National Institute of Justice (NIJ) to monitor drug use trends, treatment needs, and at-risk behavior among recently booked arrestees. Though ADAM operations were suspended by NIJ in January 2004, Maricopa County re-established (and re-named) the program in 2007 through local funds.

The AARIN project employs the same rigorous methodology as its predecessor (ADAM), which centers on a systematic sampling protocol with quarterly data collection from countywide jail facilities (and target quotas at each facility). More specifically, each quarter interviews are conducted (and urine specimens are collected) during a two-week period at the 4th Avenue County Jail and during a one-week period at the Mesa and Glendale Police Department lockups. During data collection periods, interviews are conducted with arrestees who are randomly selected based on booking time using a stock (i.e. arrested during non-data collection hours) and flow (i.e. arrested during data collection hours) selection process. Over the study period for this paper, more than 90 percent of approached adult arrestees agreed to participate in the study; and 90 percent of those who were interviewed also provided a urine specimen ($n = 942$)[3].

The mental health variables

The core AARIN survey instrument gathers a range of self-report data on background and demographics, prior criminal history, current charge information, drug use patterns, substance abuse dependence and treatment, and mental health. The variables used to assess mental health warrant some discussion. These questions, which were derived from the Dual Diagnosis addendum developed and used for ADAM (Alemagno *et al.*, 2004), focus on whether the respondent has received professional help for an emotional, psychiatric, or mental health problem, if they have been told they have a problem by a professional, or if they have been treated, prescribed medication, or hospitalized for a mental health condition[4]. Importantly, prior research has shown that brief, self-reported screening for mental health problems is a valid proxy for clinical assessments (Berwick *et al.*, 1991).

In the current study, the mental health variables were captured for both the past 30 days and the past 12 months. Arrestees who indicated that, in the last 30 days, they had been treated, prescribed medication or hospitalized for a psychiatric problem, or were told by a mental health professional that they have a problem, were coded as having a current mental health problem. If an arrestee reported affirmative to any of the above within the last year, he or she was coded as having a mental health problem in the past 12 months. The authors acknowledge that the past 30-day measure does not focus specifically on arrestees' mental health condition during the current arrest. This broader measure was employed because the authors believe that the increased formality of the indicators being queried (e.g. being medicated, or hospitalized) captures a more accurate prevalence rate of mental illness[5].

This study departs from previous work in this area through its use of arrestee self-reports for capturing mental illness. Prior research has relied on either police

officer observations (Kaminski *et al.*, 2004; Johnson, 2011), or trained research observers (Terrill and Mastrofski, 2002) to capture this information, and both of these approaches have limitations. For example, Teplin and Pruett (1992) noted that police officers often are not properly trained to identify mental illness, or to differentiate mental illness from other forms of impairment. Moreover, both trained observers and police may fail to identify internalizing disorders, or those that are not immediately observable during the encounter. As a result, the current study uses arrestee self-reports of mental health problems. Though the limits of self-report are well known, research indicates that, in jail-based interviews, arrestees have generally been truthful in their responses with regard to a range of sensitive topics such as drug use, criminal history, and immigration status (e.g. Katz *et al.*, 1997).

The key outcomes: suspect resistance and police use of force

The current study also employs a Police-Contact Addendum that captures arrestee resistance and police use of force levels. The suspect resistance items include a series of questions about the arrestee's behavior during the encounter, including arguing, cursing, disobeying, threatening, resisting or attempting escape, hitting or fighting, and use of a weapon[6]. The authors created an aggregate resistance measure by combining responses to all of the questions into one measure (any resistance, no or yes). The officer use of force items asked the arrestee to indicate whether the officer pushed, grabbed, hit, kicked, or used weapons (chemical spray, baton, TASER, firearm, other) during the incident (or threatened to do any of these). The authors created an aggregate use of force measure (any force used, no or yes) and an ordinal measure with three outcomes: no force, non-weapon force (officer, pushed, grabbed, hit, kicked), and weapon force (baton, chemical, TASER, firearm, or other weapon).

The survey asks respondents both about the current arrest ($n = 942$) and a prior police contact within the last year ($n = 662$; 280 arrestees reported no prior contact). The authors examine both the current arrest and a previous encounter because this multiple timeframe approach captures a larger universe of police-citizen encounters, and allows for a more comprehensive investigation of the relationships between these key variables. With regard to analysis, logistic and ordinal regression using robust standard errors are employed to identify predictors of five outcomes: two suspect resistance measures (resistance during current arrest and resistance during a prior encounter) and three police use of force measures (any force during current arrest, ordinal measure of force during current arrest, and any force during a prior encounter)[7]. The authors were able to document arresting agency for the current arrest, and as a consequence, the robust standard error models for current arrest outcomes are clustered by the arresting agency.

Results

Descriptive findings

Table I displays the background characteristics of the arrestee sample. Three quarters of the sample is male, and nearly half was white (46 percent). Almost two-thirds graduated from high school or obtained their GED, and 50 percent had at least part-time employment at the time of their arrest. In total, 41 percent had a prior arrest within the last year, and almost half were currently detained on a felony charge (48 percent). Approximately 8 percent reported a mental health problem within the last 30 days, and 15 percent indicated a problem within the last year. Table I also shows that 13 percent of arrestees reported that they resisted against police during the

	%
Sex	
Female	24.20
Male	75.80
Race/ethnicity	
African-American	17.73
White	46.17
Hispanic	28.56
Other	7.54
Age (mean)	31.53
High school graduate	66.45
Employment status	
Employed	50.00
Illegal income	8.52
Arrest charges	
Felony	47.57
Violent offense	21.23
Prior arrests (past 12 months)	40.87
Homeless	7.75
Mental health problem	
Past 30 days	7.64
Last 12 months	15.40
Resistance to arrest	
Current resistance	13.48
Past year resistance	15.39
Police use of force	
Current force	21.23
Past year force	15.71
n	942

Table I.
Characteristics of arrestee sample

current arrest, and 15 percent indicated resistance in a previous encounter. In total, 21 percent stated that police used force against them in the current arrest, and 16 percent had force used against them in a previous encounter.

Table II shows the sample by arresting agency. For example, the first column illustrates that 41 percent of the sample was arrested by department one. Table II also shows the portion of arrestees – by agency – that reported current mental health problems, as well as resisting and experiencing police use of force during the current encounter. The percentage of arrestees reporting a mental health problem is fairly consistent across agencies, generally from 3 to 11 percent. There is wider variation in reports of suspect resistance, ranging from 5 percent to more than 20 percent. Reports of police use of force are also disparate, ranging from 0 to nearly 30 percent. The variation in these measures underscores the importance of clustering by agency in the regression models.

Multivariate analysis

Table III displays the regression models for suspect resistance during the current and prior encounters. When controlling for other relevant factors, individuals with a current mental health problem were nearly three times more likely ($\text{Exp}(b) = 2.89$) to resist during the current arrest. The relationship between mental health problems and increased resistance is also evident in the prior contact model ($\text{Exp}(b) = 2.11$). In simple

	n	% arrested	% current MH problem	% current resistance	% current use of force
Department 1	385	40.87	8.83	13.51	25.45
Department 2	97	10.30	3.09	8.25	12.37
Department 3	84	8.92	11.90	10.71	20.24
Department 4	74	7.86	9.46	14.86	27.03
Department 5	68	7.22	2.94	16.18	22.06
Department 6	63	6.69	3.17	4.76	12.70
Department 7	31	3.29	6.45	29.03	29.03
Department 8	31	3.29	6.45	16.13	9.68
Department 9	21	2.23	9.50	14.29	0.00
Department 10	18	1.91	11.11	22.22	22.22
Department 11	10	1.06	0.00	20.00	0.00
Department 12	60	6.37	10.00	16.67	23.33
	$n = 942$		$n = 72$	$n = 127$	$n = 200$

Table II.
Sample characteristics by arresting agency

	Current arrest[a]		Past 12-month contact	
	b (SE)	Exp(*b*)	*b* (SE)	Exp(*b*)
Mental health problem				
Current	1.06 (0.202)	2.89***	–	–
Last 12 months	–	–	0.750 (0.271)	2.11**
Sex (males reference)	−0.217 (0.330)	0.8	−0.276 (0.295)	0.76
Race or ethnicity				
White (referent)	–	–	–	–
Black or African-American	0.264 (0.217)	1.30	0.554 (0.309)	1.74
Hispanic or Latino	−0.069 (0.382)	0.94	0.420 (0.300)	1.52
Other	0.288 (0.190)	1.33	1.04 (0.397)	2.81**
Age 25 and under	0.600 (0.099)	1.82***	0.058 (0.237)	1.06
Level of education				
Did not graduate high school (referent)	–	–	–	–
High school graduate	−0.208 (0.233)	0.81	−0.025 (0.253)	0.98
Employment status				
Not employed (referent)	–	–	–	–
Legal employment	−0.024 (0.153)	0.98	−0.164 (0.261)	0.85
Illegal income	0.487 (0.393)	1.63	1.09 (0.330)	2.99***
Substance use				
Current alcohol	0.280 (0.214)	1.32	0.340 (0.240)	1.40
Current drug (any)	0.328 (0.222)	1.39	−0.241 (0.241)	0.79
Arrest charges				
Felony	0.170 (0.223)	1.19	0.135 (0.231)	1.14
Violent offense	−0.509 (0.228)	0.60*	0.471 (0.264)	1.60
Prior arrests (12 months)	0.981 (0.212)	2.67***	0.453 (0.243)	1.57
Homeless	0.061 (0.236)	1.06	−0.281 (0.403)	0.76
n	942		662	
McFadden's-R^2	0.096		0.11	
Model χ^2	71.29***		39.39***	

Notes: [a]Model is clustered by arresting agency. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table III.
Predicting resistance to arrest

terms, arrestees with mental health problems were much more likely to resist against police, compared to other arrestees. Other predictors of resistance during the current arrest include younger age (Exp(b) = 1.82), prior arrests in the past year (Exp(b) = 2.67), and violent offense in the current arrest (negatively associated with resistance, Exp(b) = 0.60). Obtaining illegal income (Exp(b) = 2.99) and "other" arrestee race/ethnicity (Exp(b) = 2.81) were also significant in the prior contact model.

Table IV shows the regression models predicting police use of force. It is important to note that the dependent variable for the models in Table III – suspect resistance – now becomes a covariate in the models in Table IV. The first current arrest model (with the dichotomous use of force outcome) shows that, when controlling for other factors, arrestees with mental health problems are no more likely than other arrestees to experience police use force. There are a number of other variables that are significant predictors of any police use of force, including suspect resistance (Exp(b) = 1.67), testing positive for alcohol and drugs (Exp(b) = 1.55 and 1.51, respectively), felony and violent charges in the current offense (Exp(b) = 2.02 and 1.96, respectively), and prior arrests (Exp(b) = 1.85). Additionally, there are several variables of note that are not significant. These include extra-legal factors such as sex, race/ethnicity, age, and social status variables (education and employment), which have been identified as predictors of police use of force in prior research (e.g. Terrill and Mastrofski, 2002).

In the current arrest model with an ordinal level measure of force (none, physical, weapon), results indicate that arrestees with mental health problems are at greater risk of experiencing use of force by police (Exp(b) = 1.74), even when controlling for resistance and other relevant factors. The significance of the mental health variable is tied to incidents where police use weapon force (e.g. baton, TASER). Even though police use of weapons is uncommon (reported in 11.5 percent of all arrests), when officers do use this level of force it is significantly more likely to be against arrestees with mental health problems. In addition, many of the variables significant in the previous model remain significant here, including suspect resistance (Exp(b) = 1.59), testing positive for alcohol and drugs (Exp(b) = 1.52 and 1.50, respectively), felony and violent charges in the current offense (Exp(b) = 2.05 and 2.14, respectively), and prior arrests (Exp(b) = 1.85). The notable extra-legal factors also remain non-significant (race/ethnicity, sex, age, employment, and education). The final model examines police use of force in a prior encounter, and the arrestee mental health problem variable is not significant.

Discussion

The link between mental health problems and increased resistance

Arrestee mental health problems were a strong predictor of resistance against police, even when controlling for other risk factors such as substance abuse and prior criminal history. There are several aspects of this finding, however, that mitigate the conclusions that can be drawn regarding mental health problems and increased violence toward police. First, the current study focusses on a very specific and small percentage of the population of PMIs. This sample is defined by two important characteristics:

(1) they engaged in behavior that drew the attention of police; and

(2) the incident ended with their arrest.

There is a much larger population of individuals who live with mental illness but who likely never come to the attention of the police. Moreover, it is unknown how many

Table IV.
Predicting use of force controlling for resistance

	Current arrest[a]		Current arrest[a] (ordinal)		Past year contact	
	b (SE)	Exp(*b*)	*b* (SE)	Exp(*b*)	*b* (SE)	Exp(*b*)
Resistance to arrest	0.512 (0.229)	1.67*	0.463 (0.227)	1.59*	0.539 (0.259)	1.71*
Mental health problem						
Current	0.581 (0.308)	1.79	0.554 (0.248)	1.74*	–	–
Last 12 months	–	–	–	–	0.154 (0.259)	1.17
Sex (males reference)	−0.164 (0.158)	0.85	−0.252 (0.132)	0.78	−0.639 (0.261)	0.53*
Race or ethnicity						
White (referent)	–	–	–	–	–	–
Black or African-American	−0.094 (0.210)	0.91	−0.014 (0.214)	0.99	0.119 (0.260)	1.13
Hispanic or Latino	0.082 (0.227)	1.09	0.092 (0.208)	1.10	−0.055 (0.251)	0.95
Other	−0.065 (0.225)	0.94	−0.021 (0.197)	0.98	0.342 (0.380)	1.41
Age 25 and under	0.049 (0.131)	1.05	0.035 (0.123)	1.04	0.311 (0.199)	1.36
Level of education						
Did not graduate high school (referent)	–	–	–	–	–	–
High school graduate	0.106 (0.236)	1.11	0.106 (0.234)	1.11	0.193 (0.212)	1.21
Employment status						
Not employed (referent)	–	–	–	–	–	–
Legal employment	0.234 (0.163)	1.26	0.203 (0.144)	1.23	−0.217 (0.220)	0.81
Illegal income	0.392 (0.233)	1.48	0.461 (0.205)	1.58*	−0.051 (0.333)	0.95
Substance use						
Current alcohol	0.438 (0.110)	1.55***	0.417 (0.097)	1.52***	−0.182 (0.200)	0.83
Current drug (any)	0.410 (0.172)	1.51*	0.404 (0.168)	1.50*	0.302 (0.205)	1.35
Arrest charges						
Felony	0.705 (0.225)	2.02***	0.720 (0.251)	2.05***	0.405 (0.202)	1.50*
Violent offense	0.674 (0.129)	1.96***	0.763 (0.152)	2.14***	−0.005 (0.255)	0.99
Prior arrests (12 months)	0.599 (0.107)	1.85***	0.616 (0.109)	1.85***	0.417 (0.206)	1.52*
Homeless	0.304 (0.201)	1.16	0.147 (0.222)	1.15	0.296 (0.321)	1.35
n	942		942		662	
McFadden's-R^2	0.091		0.076		0.078	
Model χ^2	89.018***		95.09***		32.26**	

Notes: [a]Model clustered by arresting agency. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

times individuals with mental illness interacted with police and the officer resolved the encounter through other means (informally or drop-off at a psychiatric care facility). Second, a comparison of current charge type shows that arrestees with mental health problems were no more likely than other arrestees to be charged with violent (25.0 and 20.9 percent) or felony offenses (52.8 and 47.0 percent). Third, the authors took a closer look at the level of resistance offered by suspects and developed two resistance categories: low (verbal, fleeing, passive) and high (physical aggression and weapon, threatened or used)[8]. Though arrestees with mental health problems were more likely than other arrestees to engage in high-level resistance, the overall rate is still quite low (6.9 v. 1.4 percent), as most arrestees with mental health problems engaged in either low-level resistance (22.2 percent), or no resistance at all (70.8 percent).

Police use of force in arrests of PMIs

The findings regarding mental health problems and use of force were mixed. On the one hand, when use of force was measured generally (no, yes), arrestees with mental health problems were no more likely than other arrestees to experience force. This finding held for both the current arrest and a prior encounter. However, when a more specific, ordinal measure capturing different levels of force was used, arrestee mental health problems emerged as significant, specifically in cases where officers resorted to higher levels of force (when controlling for resistance level and other factors). These findings have a number of implications.

First, the non-significance of arrestee mental illness for use of force generally, and for lower level force, is consistent with the few prior studies that have examined this question (Johnson, 2011; Kaminski *et al.*, 2004; Terrill and Mastrofski, 2002). Moreover, several early police scholars highlighted the importance of empathy and tolerance when interacting with individuals suffering from mental illness, and the findings here are consistent with that line of research (Bittner, 1967a; Muir, 1977). Second, the findings may also reflect police efforts to improve their response during encounters with mentally ill citizens. For example, CIT training has been offered to police in Maricopa County, Arizona since the early 2000s, and thousands of officers have participated in this training. CIT training has been shown to effectively reduce violence (Dupont and Cochran, 2000), and the results from the current study may indicate that those effects are now being realized in Maricopa County.

The significant relationship between mental health problems and higher levels of force, however, is not consistent with this evidence. Drawing again on the work of early police scholars, the seemingly incongruous findings regarding weapon force and mental health problem may be explained by Van Maanen's (1978) police typology of citizens. Van Maanen (1978) noted that when a citizen commits an affront against police, the officer goes through a process to determine the appropriate remedy to that affront, and that process hinges on two important questions: did the person know what he was doing? And could the person have acted differently? Van Maanen (1978) focussed specifically on the group of people for whom the answer to both of these questions is "yes" (he referred to them as "assholes"). But the category of individuals more relevant for the current discussion are those for whom the answer to both of these questions is "no." Citizens who have mental health problems fall into this category. Van Maanen (1978, p. 325) noted that for these individuals, the police consider the affront "to lie beyond the responsibility of the actor [...] the moral indignation felt by police is tempered by the understanding that the person is not aware nor could be easily made aware of the rule-breaking nature of his actions." This framework is consistent with

the first set of use of force findings from the current study – as arrestees with mental health problems who engaged in low-level resistance were no more likely to experience use of force by police.

But the association between arrestee mental illness and higher degrees of force suggests that there may be another level to this dynamic. In Van Maanen's (1978) terms, what if the individual with a mental health problem escalates his or her behavior beyond those low-level affronts? Are there limits to what an officer will write off as "tolerable?" Simply put, there may be a threshold effect for affronts committed by suspects with mental health problems. Officers may be willing to accept certain types of disruptive behaviors and affronts from persons with mental health problems – affronts they will not tolerate from others – but once their tolerance level has been reached, they also will be more likely to escalate their own coercive responses to end the encounter quickly and forcefully. In effect, when dealing with PMIs, police may have greater tolerance for low-level affronts and less tolerance for high-level affronts. This potential relationship should be explored further as it represents a double-edged sword for the police and for PMIs.

Other arrestee attributes

Consistent with prior research, the current study highlights a number of important predictors of police use of force including suspect resistance, violent and felony charges, prior arrest histories, and substance use (Garner *et al.*, 1996; Paoline and Terrill, 2007). Alternatively, prior research has identified a link between a number of extra-legal factors and police use of force. For example, Terrill and Mastrofski (2002, p. 215) found that "male, nonwhite, poor, and younger suspects were all treated more forcefully, irrespective of their behavior." The persistence of elevated rates of use of force by police against minorities, the young and the disenfranchised has been a disturbing trend, suggesting that decisions by police to draw on this most important aspect of their authority continue to be influenced by skin color and social standing. However, the current study found that race/ethnicity, sex, age, educational level, and employment status (legal) were all unrelated to use of force by police. The non-significance of these extra-legal factors may signify positive developments in this critically important area of police field behavior.

The current study suffers from several limitations. First, though the authors argue that arrestee self-report is a valid method for capturing mental health problems, Klinger (2008) has questioned the use of arrestee interviews to capture information on use of force by police, suggesting a tendency to over-report such behavior. Second, this study examines only those incidents that resulted in arrest in Maricopa County, Arizona. The extent to which the findings here can be generalized to non-arrest incidents and to other jurisdictions remains unknown. Third, the mental health items employed here do not reflect a clinical diagnosis, nor do the items necessarily capture the arrestee's mental health status at the time of arrest. Rather, the measures document more formal, generalized indications of mental illness. Last, the authors acknowledge that the explanatory power of the multivariate models reported in Tables III and IV is low, indicating that there is a good deal of unexplained variance.

Nevertheless, the current study offers insights on the dynamics of formal arrest encounters of suspects who are mentally ill. These encounters differ from arrests of non-mentally ill suspects in distinctive ways, including a greater likelihood of suspect resistance and, although rare, greater use of weapon force by police. This last finding may suggest that police respond to the affronts by PMIs differently than affronts

from other suspects. Given the consequences surrounding poor police responses in encounters with PMIs, as well as the concerns over use of force, future research should continue to explore these questions.

Notes

1. Prior research has identified three sets of variables that influence police use of force: environmental or community level variables, organizational variables, and situational attributes. For discussion of this literature, see: Fyfe (1988), Terrill and Mastrofski (2002), and White and Klinger (2012).
2. The vast majority of research described here relied on either officer perceptions of impairment (drug, alcohol, mental), or the perceptions of trained research observers.
3. Arrestees who had been in custody longer than 48 hours were ineligible for participation in AARIN because of time limitations associated with urinalysis testing. The urinalysis tested for four different drugs: marijuana, cocaine, opiates, and methamphetamine. The test is calibrated to detect drugs ingested within 72 hours of the interview and to keep false positives to no more than two per 100 (Visher, 1991). As a reliability check, all specimens that test positive with EMIT methods are retested using Gas Chromatography with Mass Spectrum detection.
4. These same criteria have been used in the Survey of Inmates in State and Federal Correctional Facilities, the Survey of Inmates in Local Jails, and the Survey of Adults on Probation, as reported by the Bureau of Justice Statistics special report on mental health (Ditton, 1999).
5. The overall goal of the paper is to examine the dynamics of police encounters with arrestees who suffer from mental health problems. Our broader, past 30-day measure is intended to capture more accurate indicators of mental health problems through a reporting of clinical interventions. The prevalence rates of these clinical interventions during a more immediate timeframe would likely be very low (e.g. questions such as "have you been hospitalized or medicated in the hours before your arrest?").
6. The addendum is similar in design and format to the Bureau of Justice Statistics' Police-Public Contact Survey. As an example, the survey asks: "Did you argue with or disobey the officer for any reason? Curse at, insult or call the officer an offensive name? Say something threatening to the officer? Resist being handcuffed or arrested? Resist being searched, or having your vehicle searched? Try to escape by hiding, running, or engaging in a vehicle chase? Grab, push, hit, or physically fight with the officer? Use a weapon to threaten the officer? Use a weapon to assault the officer?"
7. The authors attempted to create an ordinal measure of suspect resistance for the current arrest, but there was insufficient variation in the variable to create this more nuanced measure. The authors were faced with the same problem when examining resistance and use of force reported in the prior police encounter. As a result, the dichotomous, composite measures are employed for these models.
8. Recall that there was not enough variation in the resistance outcome measure to support an ordinal-level regression.

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