

# Prevalence of Criminal Behaviors in an Internal-Medicine-Resident Clinic Population

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**Objective:** Few, if any, US studies have examined rates of criminal behaviors among patients in clinical samples. According to findings from non-US studies, mostly in psychiatric samples, rates of criminal behavior are higher than in the general population. In this study, we examined the prevalence of criminal behaviors in an internal medicine outpatient sample from a resident-provider clinic.

**Method:** In a consecutive sample of internal medicine outpatients, 380 participants were surveyed in October of 2010 regarding 27 criminal offenses as delineated by the crime categorization schema used by the Federal Bureau of Investigation.

**Results:** In this sample, 22.1% reported at least one criminal charge. The most commonly self-reported criminal charge was driving under the influence of alcohol or drugs (10.3%), followed by disorderly conduct (7.1%), drug abuse violations (5.8%), simple assault (5.3%), drunkenness (4.5%), and aggravated assault (3.2%).

**Conclusions:** Like previous non-US studies among psychiatric samples, there *appears* to be a higher prevalence of criminal behavior among outpatients in an internal medicine training clinic than in the general population. These behaviors may be inter-related through alcohol/substance-use disorders.

**Key Words:** crime, criminal behavior, primary care, resident, resident clinic

According to crime summaries prepared by the Federal Bureau of Investigation for the year 2009, 0.4% of US individuals were victimized by violent crime and 3.0% by

property crime.<sup>1</sup> In this same year, there were more than 13 million arrests, excluding traffic violations.<sup>1</sup> Findings indicate that criminal behavior affects and is perpetrated by a substantial minority of US citizens.

Rates of criminal behavior have been previously examined in clinical populations, but seemingly exclusively in psychiatric samples. For example, in a 1996 study, Modestin and colleagues examined 360 Swiss inpatients with alcoholism and compared them with a general-population sample; in this study, the clinical sample was twice as likely to evidence a criminal record (68% versus 37%).<sup>2</sup> In a 1996 study, Modestin and colleagues compared 282 Swiss males with schizophrenia to healthy controls, and determined that the patient sample was 5 times more likely to have been convicted of violent crimes.<sup>3</sup> In this same sample, patients were 2.5 times more likely to have been convicted of property crimes and 3 times more likely to have violated drug laws. In a 1997 study, Modestin and colleagues examined criminal behavior in Swiss male psychiatric inpatients with mood disorders.<sup>4</sup> In this study, 42% of patients and 31% of controls had a criminal record; criminality was particularly higher in bipolar patients. In a 2001 Canadian study, Crisanti and Love compared involuntary psychiatric inpatients to voluntary psychiatric inpatients, and determined that the former cohort was significantly more likely to have had contact with the criminal justice system.<sup>5</sup> Finally, in a 2002 Swiss study of patients with unipolar depression, researchers found that 40% of male patients and 7% of female patients were criminally registered.<sup>6</sup>

In a 2005 study, Modestin and colleagues examined the effects of substance abuse in relationship to criminal behavior in both schizophrenic and mood-disordered patients.<sup>7</sup> In this study, substance abuse nearly doubled the rate of criminal

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The authors have no financial relationships to disclose and no conflicts of interest to report.

Accepted June 1, 2011.

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0038-4348/0-2000/104-695

DOI: 10.1097/SMJ.0b013e31822ceffid

## Key Points

- In an internal medicine outpatient clinic, we found that 22.1% of patients reported being charged with a crime.
- The most frequently reported criminal charges were driving under the influence of alcohol or drugs (10.3%), disorderly conduct (7.1%), drug abuse violations (5.8%), simple assault (5.3%), drunkenness (4.5%), and aggravated assault (3.2%).
- The preceding charges may be inter-related through alcohol/substance abuse.

behavior in both the schizophrenic subsample (23% versus 46%) and mood-disordered subsample (29% versus 53%).

In contrast to the preceding findings, there is one Canadian study from 1987 that reported no difference in rates of criminality between patients with schizophrenia ( $n = 42$ ) and hospitalized medical patients<sup>8</sup>; however, sample sizes were especially small.

In addition to studies examining rates of criminal activity among select populations, several studies have also followed patients after treatment and determined rates of subsequent criminal activity—all higher than population norms.<sup>9–13</sup> These studies consisted of Norwegian psychiatric inpatients,<sup>9</sup> Finnish patients with schizophrenia,<sup>10</sup> Swedish patients with substance abuse,<sup>11</sup> German patients with affective disorders,<sup>12</sup> and US adolescents with substance abuse.<sup>13</sup> For example, in the Finnish study of patients with schizophrenia, investigators determined the subsequent prevalence rate of criminality in this population at 9.4%.<sup>10</sup>

What do these data tell us? First, in these various non-US psychiatric samples, rates of criminality appear to exceed rates in the general population. Second, rates of criminality have largely been assessed in various types of psychiatric samples. Third, there are apparently few US studies of criminality in clinical populations.

Why are such studies relevant? Determining the criminal prevalence in a given clinical population may help define the psychosocial needs of a given population, indicate degree of provider risk in working with that population, direct facility management around proactive means to protect employees, and/or possibly suggest comorbid clinical issues such as substance abuse. In the following study, we examined rates of criminal arrests in a US internal medicine outpatient clinic, which is predominantly composed of patients being seen by resident-providers.

## Method

### Participants

Participants were males and females, between the ages of 18 and 65 years, who were being seen at an outpatient internal medicine clinic for non-emergent medical care. This outpatient clinic is staffed by both faculty and residents in the department of internal medicine and is located in a mid-sized, mid-western city. However, resident providers constitute the majority of treatment providers. We excluded individuals with compromising medical (eg, dementia, pain), intellectual (eg, mental retardation), or psychiatric conditions (eg, psychotic)—ie, those individuals who might not be able to successfully complete a survey.

To characterize this clinic, during the year 2008, 64% of the consultations were for females; 30% of patients were between the ages of 15–44 years, 45% between the ages of 45–64 years, and 25% age 65 or older; 8% were self-pay, 49% had government insurance (Medicare/Medicaid), and 43% had

private insurance. The most common clinical diagnoses were hypertension (8.7%), hyperlipidemia (6.1%), diabetes (5.4%), allergies (4.7%), and hypothyroidism (2.3%).

A total of 471 patients were approached to participate in this study; 417 patients agreed, for a response rate of 88.5%. However, only 380 completed the list of illegal behaviors. Of these 380 respondents, 131 (34.5%) were male and 249 were female (65.5%). Participants ranged in age from 19 to 97 years (mean = 50.33, SD = 15.43). Most respondents (88.2%) were white, followed by African American (7.6%), Other (2.1%), Hispanic (1.3%), and Asian (0.8%). With regard to highest level of educational attainment, all but 6.4% of respondents reported having at least attained a high school diploma, with 14.6% of the sample attaining a bachelor's degree and 13.8% earning a graduate or professional degree.

### Procedure

During clinic hours, one of the authors (C.L.) positioned herself in the lobby of the outpatient internal medicine clinic, approached incoming patients, and informally assessed exclusion criteria. With potential candidates, the recruiter reviewed the focus of the project and invited each to participate. Each participant was asked to complete a 5-page survey, which took approximately 10 minutes. Participants were asked to place the completed surveys into sealed envelopes and then to place these into a collection box in the lobby.

The survey consisted of two core sections. The first section was a demographic query, in which we asked participants about their sex, age, marital status, racial/ethnic origin, and educational level. The second section of the survey queried participants about their histories of illegal behavior using the crime classification schema utilized by the Federal Bureau of Investigation.<sup>14</sup> Specifically, respondents were presented with a list of 27 illegal behaviors and asked, “Have you *ever* been *charged* with (not necessarily convicted of) any of the following crimes?” (italics in the original). Respondents checked “Yes” or “No” next to each listed behavior (Table 1 for the specific crimes).

### Results

Overall, 22% of the sample reported at least one criminal charge. The prevalence rates of specific criminal charges in this study population are shown in Table 1. The total number of different illegal behaviors reported by participants ranged from 0–13, with a mean of 0.56 (SD = 1.62). Of the 27 illegal behaviors, only 6 were reported by at least 3% of the sample, and these were related to substance abuse, disorderly conduct, and assault.

The total number of illegal behaviors endorsed was weakly related to age ( $r = -0.17$ ,  $P < 0.01$ ) such that younger respondents were somewhat more likely to report having had a greater number of different charges. With regard to male-female comparison, males (mean = 0.95, SD = 2.19) reported a greater number of different types of criminal charges compared to

**Table 1. Frequency of illegal behaviors in an internal medicine outpatient sample (n = 380) of individuals from a resident clinic**

Form of illegal behavior	n	%
Aggravated assault (ie, assault with a weapon)	12	3.2
Arson	1	0.3
Simple assault (ie, assault with no weapon)	20	5.3
Burglary (ie, unlawful entry to commit a felony or theft)	6	1.6
Disorderly conduct	27	7.1
Driving under the influence of alcohol or drugs	39	10.3
Drug abuse violations (eg, possession, sale, use of illegal drugs)	22	5.8
Drunkenness (eg, public intoxication)	17	4.5
Embezzlement	0	0.0
Forgery or counterfeiting	3	1.8
Fraud	0	0.0
Gambling (eg, promoting or engaging in illegal gambling)	8	2.1
Hate crime	1	0.3
Larceny theft (eg, shoplifting, pocket picking, purse snatching, thefts from motor vehicles, bicycle thefts)	9	2.4
Liquor law violations	8	2.1
Manslaughter by negligence	0	0.0
Motor-vehicle theft	3	0.8
Murder	0	0.0
Nonforcible rape	1	0.3
Offenses against family/children (eg, nonsupport, neglect, abuse)	4	1.1
Prostitution	2	0.5
Rape	1	0.3
Robbery	1	0.3
Sex offenses (eg, statutory rape, voyeurism, public nudity, fondling)	3	0.8
Buying, receiving, or possessing stolen property	9	2.4
Vandalism	10	2.8
Weapons law violations (eg, carrying or concealing weapons, illegal selling or possession of weapons)	6	1.6

females (mean = 0.36, SD = 1.18),  $F(1,378) = 11.66$ ,  $P < 0.01$ . Similarly, a greater percentage of males (31.3%) compared to females (15.7%) indicated at least one prior criminal charge,  $\chi^2 = 12.63$ ,  $P < 0.01$ .

## Discussion

In this study population, the overall prevalence of self-reported criminal behavior (22%) appears to be higher than what one would anticipate in a general population sample, which is in line with data collected by other investigators in non-US psychiatric samples. Indeed, this is especially likely given that arrest rates are traditionally higher for youth (the mean age in this sample was 50.33), males (only 34.5% of this sample), and minorities (11.8% in this sample)<sup>15</sup>—patterns that are also somewhat reflected in our data. It is likely that comparison of this sample with a control population of similar demographics would demonstrate a greater difference, with higher rates of arrests in the clinical sample.

The impression of higher rates of arrest in the present sample is reinforced by a comparison of study data from the 2007 criminal offense statistics reported by the city in which the study was undertaken (Table 2).<sup>16</sup> (Note that the majority of crime categories in the study sample demonstrate higher prevalence rates than those reported in the one-year data by the city.) Importantly, the data in Table 2 reflect one-year prevalence rates whereas the data reported by participants represent lifetime prevalence, so exact comparison is not possible.

According to findings, the most commonly reported criminal offense in this study population was driving under the influence of alcohol or drugs (10.3%), followed by disorderly conduct (7.1%), drug abuse violations (5.8%), simple assault (5.3%), drunkenness (4.5%), and aggravated assault (3.2%). One possible clinical link among these preceding behaviors is alcohol and/or substance use disorders. This possible explanation may partially relate to the high rate of indigence in the study population (nearly 50% of the sample was on government insurance). This potential association suggests that physicians treating such populations be alert to alcohol and/or substance use issues (eg, diagnosis, treatment triage, associated medical complications, legal issues) as well as possible erratic patient behavior related to such usage (eg, aggressive behavior, non-compliance with treatment, missed appointments).

While the findings of this study in a resident-provider clinic may appear intuitively evident (ie, that resident-provider clinics have relatively higher rates of patients with criminal histories), this is the one of the few studies to examine criminal behaviors in a clinical population and to establish percentages applying to such behavior (22%). In addition, while many types of criminal behavior are self-reported, a number may be inter-related through alcohol and substance abuse. Because of this potentially important association, clinics with these types of demographic profiles may benefit by proactively training clinicians about alcohol/substance abuse (eg, recognition and assessment) as well as providing them with a list of resources for treatment (eg, times/locations of Alcoholic Anonymous meetings, local outpatient and inpatient treatment resources). (We have these resources posted in our precepting room.)

**Table 2. Rates of specific crimes in Miamisburg, Ohio, during 2007<sup>15</sup>**

Form of illegal behavior	%
Aggravated assault	0.02
Simple assault	0.36
Burglary	0.68
Simple/larceny theft	2.82
Motor-vehicle theft	0.25
Robbery	0.05
Manslaughter	0.00
Murder	0.00
Rape	0.04

This study has a number of potential limitations. First, all data are self-report in nature; some participants may not have disclosed their full criminal histories due to embarrassment (eg, rape, manslaughter). If so, then the rates of criminal behavior that we report in Table 1 may be lower than actual rates. Second, these data are from a resident-provider clinic; findings may not generalize to other clinical settings such as private primary-care practices. Third, this study sample has demographics that are somewhat skewed from general population norms and may therefore under-detect criminal arrest rates (eg, high proportion of women, low rate of minorities).

Despite the preceding potential limitations, the sample in this study was consecutive, studies of criminal behavior in US clinical populations are scarce, and findings provide some insight into the psychosocial issues that might be anticipated in primary-care clinics. Findings suggest that in clinics with similar demographic profiles, there are likely to be higher rates of criminal behavior than in the general population, that these criminal behaviors may be mediated by alcohol and/or substance use disorders, and that providers need to be aware of the potential psychosocial implications in working with this type of population (eg, alert to the diagnosis and treatment of substance use disorders, associated medical complications, legal issues related to alcohol/substance use, possible drug-seeking behavior, erratic and impulsive behavior).

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