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Co-Occurring Risk Factors for Arrest among Persons with Opioid Abuse and Dependence: Implications for Developing Interventions to Limit Criminal Justice Involvement

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Abstract

Persons who abuse opioids or are dependent on opioids are at elevated risk for arrest. Co-occurring behavioral health problems may exacerbate that risk, although the extent of any such increase has not been described. This study examines such risk factors among 40,238 individuals with a diagnosis of opioid abuse or dependence who were enrolled in the Massachusetts Medicaid program in 2010. Medicaid data were merged with statewide arrest data to assess the effects of co-existing mental illness, substance abuse, and previous arrests on arrest during 2010. Persons with serious mental illnesses (psychotic and bipolar disorders) and those with two or more pre-2010 arrests had significantly increased greater odds of arrest. We believe this to be the first study examining effects of co-occurring risk factors on arrest in a large population with opioid dependency/abuse. These findings identify predictors of arrest that could be used to design interventions targeting specific co-occurring risk factors.

Keywords

Opioid dependency and abuse; criminal justice involvement; co-occurring psychiatric illness

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1. Introduction

1.1. Risk of arrest for persons using opioids

Criminal justice involvement is among the many negative outcomes experienced by persons who abuse and/or become dependent on opioids, such as heroin and prescription pain killers. The baseline risk for arrest in this population is high (White, 2000); a recent study observed a two-year arrest rate of 38% in a sample of individuals who had been treated with buprenorphine (Harris, Jacapraro & Rastegar, 2012). A variety of causal relationships linking substance abuse and offending have been posited over the years. Nurco and colleagues observed, for example, that offending among heroin addicts could, broadly speaking, be attributed almost entirely to the need to obtain drugs, although the specific offense patterns associated with this goal varied considerably. They also noted that longitudinal data on offending and drug use suggest that criminal activity is greatest during active periods of abuse (Nurco, Shaffer, Ball, et al.,1988; Nurco, Ball, Shaffer & Hanlon, 1984). Other researchers report data suggesting that criminal offending and substance abuse may jointly cause one another, and that criminal involvement may, in fact, be a better predictor of drug use than drug use is of criminal behavior (Hammersley, Forsyth Morrison et al., 1989). This relationship has been further elaborated by Mueser and colleagues, who examined drug use among persons with mental illness and found that early drug use and criminal behavior could be the joint product of conduct disorder and later antisocial personality disorder (Mueser, Crocker, Frisman et al., 2006).

Determining the temporal order of substance use and offending is interesting theoretically and perhaps important in developing prevention protocols, but focusing on this linkage alone ignores potential variation attributable to a host of other potential risk factors that may co-occur and interact with opioid use (White & Gorman, 2000). This paper examines a set of such factors. Using substance abuse treatment and arrest data on a large statewide sample of persons with clinically diagnosed opioid abuse and dependence, this paper explores the effects of co-occurring mental illnesses, the use of other drugs, alcohol, and prior arrest history on (a) the likelihood of arrest in a single 12-month period and (b) patterns of offenses among individuals with different combinations of risk factors.

To our knowledge this is the first large-scale study examining these factors in a group consisting solely of persons diagnosed with opioid abuse and dependence. Our approach differs in a number of ways that adopted in many previous studies examining the correlation between substance abuse, psychiatric illnesses and criminal justice involvement. First, we begin with a population of individuals with medical claims-based diagnoses of opioid abuse and dependence, and treat psychiatric illnesses as co-occurring conditions, in contrast to the opposite perspective typically taken in the psychiatric literature (e.g., Fisher, Wolff, Grudzinksas, 2007; Drake, Wallach &, McGovern, 2005; Mueser, Crocker, Frisman et al., 2006). Also, unlike studies that begin with a justice - involved population and retrospectively assess substance patterns (e.g., James & Glaze, 2006; Nurco et al., 1985; Nurco et al., 1984), we begin with a population of individuals of persons who are addicted to or abuse opioids and who may or may not have additional co-occurring disorders, in

particular a severe mental illness, and model criminal justice involvement within that population.

2. Methods

2.1 Approach

This study examines the prevalence of offending in the year 2010 among individuals who were enrolled in the Massachusetts Medicaid (MassHealth) program in that year (N=40,238) and who had any diagnosis of opioid dependence or abuse (ICD-9 codes 304.0, 304.7 and 305.5). Specifically, we examine the association between risk for an arrest in 2010 and co-occurring mental health conditions, use of substances other than opioids, and pre-2010 arrest history in a multivariable framework. (We should note that in using the term "arrest" here we refer to a process that includes detention by police and subsequent court arraignment, which is mandatory in Massachusetts.) We do not describe patterns or rates of conviction. Some of the arrests and charges we include in our analyses will likely be dropped once defendants are processed by the court, and in others cases defendant may be found "not guilty. We gain additional detail on the types of offenses displayed by persons with opioid abuse/dependence alone and those with co-occurring risk factors by examining the charges associated with arrests occurring in 2010.

2.2 Data

The dataset used in this study consists of MassHealth enrollment, medical claims and encounter data merged with the arrest records of identified MassHealth recipients provided by the Massachusetts Criminal Offender Record Information (CORI) system, the Commonwealth's official repository of data on arrests occurring within the state. The CORI data include all adult arrests/arraignments (i.e., those occurring from age 18 onward) up to the point of the data request (in this case, June 2011). Arrests occurring outside of the Commonwealth are not included in the data set and are thus not available for analysis.

2.3 Human Subjects Approval

This study was approved by the institutional review boards of the University of Massachusetts Medical School and the Massachusetts Department of Public Health.

2.4 Behavioral Health Conditions

Four categories of mental illness were identified based on ICD-9 codes in the MassHealth data: "None" "Severe Mental Illness (SMI)," which included schizophrenia, bipolar disorder and other psychoses; "Major Depression" and "Other," which included anxiety disorders and a range of low-prevalence mental health disorders. These categories are mutually exclusive; persons with multiple psychiatric diagnoses were assigned to categories based on the most serious of their diagnoses, in the order presented above. Co-occurring substance use categories included "None," "Alcohol" and "Other Drugs."

2.5 Offense categories

The large number of charges appearing in the CORI data on which individuals in the sample were arraigned, coupled with the goal of comparing these charges across the categories of

persons with various risk factors, required that we collapse them into a manageable number of categories. In doing so we drew on a taxonomy developed in a study of arrest patterns among a cohort of persons with severe mental illnesses (Fisher et al, 2006; 2007). For the present study we created the following categories that subsumed the principal charges observed in our data: 1) *Crimes Against Persons* (aggravated assault, forced sex, robbery, kidnapping, homicide); *Property Crimes* (arson, burglary, forgery, fraud, motor vehicle theft, larceny, (a general, non-specific term that refers to the taking of property belonging to others in a non-violent fashion, as opposed to robbery, which involves a physical confrontation), receiving stolen property and vandalism); *Drug Offenses* (drug/paraphernalia possession, distribution); motor vehicle offenses (motor vehicle violations; operating under the influence of drugs or alcohol); *Public Order Offenses* (disorderly conduct; drinking in public; liquor law violation); and *Non-Violent Sex – related offenses* (non-forced sex & prostitution). An "O*ther*" category was also created for various low-incidence, low-level offenses. All arrests included in our analyses occurred in 2010.

2.6. Demographic covariates

A sizeable body of research as well as official statistics has demonstrated a link between age, gender, and propensity to offend, such that males and persons between the ages of 16 and 34 are among the demographic groups at greatest risk for arrest (Snyder, 2012). To adjust for these factors we include them in our models as covariates. Race/ethnicity has also been shown to have a similarly strong relationship with offending, but reliable data on these factors were not available in either of the data sets used in this study.

2.7. Statistical analysis

Multivariable logistic regression was used to model risk of arrest as a function of the factors described above. Analyses were carried out using SAS, version 9.

3. Results

3.1 Sample characteristics

As indicated in Table 1, the sample included more males than females, and had a mean age in the mid-30s. Roughly 70% of the cohort had a co-occurring psychiatric diagnosis, of which SMI (schizophrenia and bipolar disorder) was the most common. Nearly 60% had diagnoses of other drug or alcohol abuse or dependence. The group had significant criminal justice involvement; the overall one year incidence of arrest in 2010 was 30.7 per 100 persons. Roughly one quarter of the cohort had at least one arrest, and 10.5% two or more during that year. More than three-quarters of the 2010 cohort had at least one previous arrest, with the majority having had multiple prior arrests.

3.2 Multivariable analysis

Results of a multivariable logistic regression model assessing the odds of at least one arrest in 2010 are shown in Table 2. Male gender and younger age were significant positive risk factors. SMI was associated with nearly 29% greater odds of an arrest compared to those with no history of mental illness (OR = 1.29, 95% CI =1.21, 1.38, p<.001). The odds ratio associated with major depression was statistically significant, but compared with other

observed effects was relatively small (OR =1.11, 95% CI 1.04, 1.18, p<.01). On the other hand, persons with diagnoses involving dependence on or abuse of "other substances" in addition to opioids were at much greater risk of arrest, compared to those without such diagnoses (OR=1.50, 95% CI = 1.42, 1.59, p<.001). In particular, co-occurring alcohol use/ abuse nearly doubled the odds of arrest (OR=1.95, 95% CI=1.82, 1.19, p < .001) and had the largest effect on arrest likelihood of all the behavioral health conditions. The strongest risk factors were previous arrests; as compared to persons without a pre-2010 arrest history, those with one prior arrest were more than three times as likely (OR = 3.47, 95% CI = 3.08, 3.90, p < .001) and those with two or more nearly seven times as likely to be arrested in 2010 (OR= 6.70, 95% CI = 6.16, 7.28).

3.3 Offense types

The arrestees in our sample were arraigned on a wide range of charges. In the overall sample, property offenses were the most common charge categories (70%), followed by motor vehicle offenses (39.4%). Percentages of individuals charged with crimes against persons and drug related offenses were roughly equivalent, (29.0% and 30.7% respectively.) (Percentages can exceed 100% because many individuals experienced multiple arrests and were could have been charged with offenses falling into multiple categories.) Larceny was the most common property offense and aggravated assault the most common of the "crimes against persons." Among drug – related charges two thirds were for possession of drugs and related paraphernalia, and one third for distribution/manufacturing. This pattern of relative frequencies was consistent across subgroups characterized by the presence of various types of co-occurring disorders.

3.4. Demographic effects

Age and gender were both statistically significant, although only male gender had a reasonable effect size, such that males were 1.30 times as likely to experience an arrest than females with other risk factors included in the model.

4. Discussion

4.1. The effects of mental illness, substance abuse and arrest history

The results of the multivariable analyses indicate that a number of factors interact with opioid abuse and dependence to increase the already substantial arrest rate observed among persons with this disorder. As we noted earlier, a sizeable psychiatric literature on co-occurring mental illness and substance abuse suggests that substance use increases risk for arrest among persons with severe mental illnesses (Swartz & Lurigio, 2007). Data presented here suggest that the reverse is also true with respect to persons with opioid dependence. Indeed, the category we identified as "severe mental illnesses," which included only schizophrenia and bipolar disorder and excluded major depression and post-traumatic stress disorders, was the most prevalent of the mental disorder categories and also had the strongest effect on arrest of any of the co-occurring behavioral disorders. We would, though, add a note of caution. The effect we are reporting --- an odds ratio of 1.29, is significant but modest. Moreover, it must be kept in mind that psychiatric diagnosis can be a difficult process with persons in the throes of opioid abuse. This is especially true in the case of

bipolar disorder, which is often used to explain the mood instability frequently observed in this population (Goldberg et al., 2008).

The use of alcohol and other substances also interacts with opioid use to increase risk of arrest. Indeed, these data indicate that co-occurring alcohol abuse, which nearly doubles the likelihood of arrest, is an important additional factor that warrants attention in the design of interventions for treating opioid dependence.

By far the strongest of the predictors of arrest was arrest history. Having any such history, even one prior arrest, elevated risk for arrest in 2010, but, adjusted for age and thus to some extent time at risk, this likelihood was three times that of those with no previous arrests and for those with two or more nearly seven times. We did not have available information on the recency of arrests, which some studies have shown to add predictive value to arrest histories. Harris and colleagues (2012) observed that having been arrested in the previous two years was associated with current charges, but that charges experienced more than two years ago were not.

Consistent with earlier studies (Nurco et al., 1984, 1988), our data also suggest that persons with opioid dependence are arrested on a broad spectrum of charges, including serious violent crimes such as aggravated assault and, interestingly, motor vehicle offenses, that extend well beyond the property crimes and sex for hire offenses that might be expected to be quite common among persons with opioid dependence and abuse.

In this analysis age and gender were included mainly to adjust for their effects. It is noteworthy, though, that in a model that includes major co-occurring behavioral health factors as well criminal history, both variables were statistically significant, although the effect size for male gender was much more pronounced. This is consistent with a vast criminologic literature as well as official arrest statistics cited earlier indicating that being male, apart from other criminogenic risk factors, is itself a risk factor for arrest, and appears to be particularly so in this population.

We have argued from the outset that justice system involvement is one of the least desirable outcomes associated with opioid use and dependence. One outcome of such involvement is the potential for a criminogenic "downward spiral," marked by spells of confinement in prisons or jails, which house large numbers of individuals with drug habits of various kinds. These episodes of incarceration and associated interactions with other inmates may increase individuals' probability of further criminal involvement. This may, in fact, explain in part our finding that having two or more pre-2010 arrests is a strong predictor of arrest during 2010. Indeed, the fact that the odds ratio associated with this factor also lends support to the suggestion of a "criminogenic downward spiral." Developing interventions that break or prevent the development of such patterns thus might prove worthwhile. This argues for understanding the nature of long term offending patterns in this population -- how they evolve, how they are correlated with broader patterns and types of offenses, and how opioid abuse/dependence and co-occurring SMI may affect them.

4.2. Implications for designing treatment interventions

Preventing criminal justice system involvement among persons involved with opioids benefits the individuals themselves and enhances public safety. Moreover, with one exception (Harris et al. 2012), studies of cost savings associated with providing treatment find them to be effective in reducing criminal justice expenditures to an extent that significantly exceeds the cost of treatment (Volkow, 2008; Ehlers. Scott & Zeidenberg, 2006; Ettner, Huang, Evans et al., 2006: Luchansky, Nordlund, Estee et al. (2006); Butzin, O'Connell, Martin et al., (2006); Koenig, Siegal, Harwood et al., 2005; McCollister, French, Inciardi et al., 2003). For at least one segment of our population, however, those with significant criminal histories (here categorized as those with two or more prior arrests) substance abuse treatment may be necessary but not sufficient to curb future offending. Preventing re-offending among the this group likely requires not only treatment of substance abuse and psychiatric disorders, but also what criminologists refer to as "criminogenic risk factors" such as those subsumed under the major predictors of criminal behavior referred to as the "Central Eight." These include history of antisocial behavior, antisocial personality disorder, antisocial cognitions and associates, substance abuse, poor family/marital relationships, poor performance in school or work and lack of involvement in pro-social activities (Andrews, Zinger, Bonta, et al., 1990). Focusing on these issues, a treatment framework, termed "Risk, Needs, Responsivity" (RNR) has been developed that has guided interventions for offenders with specific needs (Andrews, Zinger, Hoge et al., 1990). Recent studies suggest that a program with high fidelity to the RNR model and delivered in a community residential, as opposed to a correctional setting, can double the effectiveness of the program with respect to reducing recidivism (Andrews & Bonta, 2006; Andrews, Bonta & Wormith, 2006). The data we present here suggest that careful identification of co-occurring behavioral health factors among persons addicted to opioids and providing treatment in the context of an RNR framework that also considers criminogenic risk factors might be tested as a means of reducing both opioid dependence and associated criminal justice outcomes.

As we noted earlier, this study is, to our knowledge, the first to examine the criminal justice effects of co-occurring alcohol abuse and, psychiatric illnesses in a large statewide sample of persons who abuse and/or are dependent on opioids. But clearly there are shortcomings. In reviewing our findings it is important to keep in mind that our sample consists of persons who are likely to have received at least some treatment for their opioid dependence. How the patterns observed in this sample might differ from the full universe of persons who use or are dependent on opioids but have never touched the treatment system cannot be determined. In addition, diagnostic coding does not provide information on stage or clinical severity of a person's abuse/dependence and psychiatric illness. As a result, this sample potentially includes persons ranging from those with unstable, active abuse and dependence and alcohol use to those in long-term recovery and remission. These problems are endemic to the use of large administrative data sets, and represent the trade -offs of potential biases of various kinds with the ability to study large samples.

4.3 Conclusion

The findings of this study suggest that persons who are addicted to or dependent on opioids present a complex array of clinical and behavioral comorbidities that increases the probability of their arrest beyond the already high level of risk that accompanies involvement with illicit drugs. While numerous studies cited here suggest that substance abuse treatment is effective in reducing risk of criminal justice involvement, addressing of individuals' behavioral health comorbidities and criminogenic risk factors in integrated treatment protocols plan might lead to these programs' achieving even better results.

Acknowledgments

References

Andrews, DA.; Bonta, J. The psychology of criminal conduct. 4. Newark, NJ: LexisNexis; 2006.

Andrews DA, Bonta J, Wormith SJ. The recent past and near future of risk and/or need assessment. Crime and Delinquency. 2006; 52:7–27.

Andrews DA, Zinger I, Hoge RD, Bonta J, Gendreau P, Cullen FT. Does correctional treatment work? A psychologically informed meta analysis. Criminology. 1990; 28:369–404.

Butzin CA, O'Connell DJ, Martin SS, Inciardi JA. Effect of drug treatement during work release on new arrests and incarceration. Journal of Criminal Justice. 2006; 34:557–565.

Drake RE, Wallach MA, McGovern MP. Future directions in preventing relapse to substance abuse among clients with severe mental illnesses. Psychiatric Services. 2005; 56:1297–1302. [PubMed: 16215199]

Ehlers, S.; Zeidenberg, J. Proposition 36: Five Years Later. Washington DC: Justice Policy Institute; 2006.

Ettner SL, Huang D, Evans EE, Rose Ash D, Hardy M, Jourabcjo M, Hser Y-I. Benefit – cost in the California Treatment Outcome Project: Does substance abuse treatment "pay for itself"? Health Services Research. 2006; 41:193–213.

Fisher WH, Roy-Bujnowski K, Grudzinskas AJ, Clayfield JC, Banks S, Wolff N. Patterns and prevalence of arrest in a statewide cohort of mental health care consumers. Psychiatric Services. 2006; 57:1623–1628. [PubMed: 17085611]

Fisher WH, Wolff N, Grudzinskas AJ, Roy-Bujnowski K, Banks S, Clayfield J. Drug arrests in a cohort of mental health service recipients. Psychiatric Services. 2007; 58:1448–1453. [PubMed: 17978255]

Goldberg JF, et al. Overdiagnosis of bipolar diagnosis among substance use disorder inpatients with mood instability. Journal of Clinical Psychiatry. 2008; 69:1751–1757. [PubMed: 18945397]

Harris EE, Jacapraro JS, Rastegar DA. Criminal charges prior to and after initiation of office-based buprenorphine treatment. Substance Abuse Treatment, Prevention, & Policy. 2102; 7:10.

James, DJ.; Glaze, LE. Mental health problems of prison and jail inmates. Washington DC: U.S. Department of Justice, Government Printing Office; 2006.

Koenig L, Siegal JM, Harwod H, Gilani J, Chen Y-I, Leahy P, Stephens R. Economic benefits of substance abuse treatment: Findings from Cuyahoga County, Ohio. Journal of Substance Abuse Treatment. 2005; 28:S41-S-50. [PubMed: 15797638]

Luchansky B, Nordlund D, Estee S, Krupski A, Stark K. Substance abuse treatment and criminal justice involvement for SSI recipients: Results from Washington State. American Journal on Addictions. 2006; 15:370–379. [PubMed: 16966193]

McCollister KE, French MT, Inciardi JA, Butzin CA, Martin SS, Hooper RM. Post- release substance abuse treatment for criminal offenders: A cost-effectiveness analysis. Journal of Quantitative Criminology. 2003; 19:389–407.

Mueser KT, Crocker AG, Frisman LB, Drake RE, Covell NM, Essock SM. Conduct disorder in persons with severe psychiatric and substance abuse disorders. Schizophrenia Bulletin. 2006; 32:626–636. [PubMed: 16574783]

Nurco DN, Hanlon Thomas E, Kinlock Timothy W, Duszynski Karen R. Differential criminal patterns of narcotic addicts over an addiction career. Criminology. 1988; 26:407–423.

Nurco DN, Shaffer JC, Ball JC, Kinlock TW. Trends in the commission of crime among narcotic addicts over successive periods of addiction. American Journal of Drug and Alcohol Abuse. 1984; 10:481–489. [PubMed: 6534180]

Snyder, HN. Arrest in the United States, 1990–2010. Washington, D.C: Bureau of Justice Statistics; 2012.

Swartz J, Lurigio A. Serious mental illness and arrest: The generalized mediating effect of substance abuse. Crime and Delinquency. 2007; 53:581–604.

Volkow, N. Substance Abuse Treatment and Public Safety. Washington, D.C: Justice Policy Institute; 2008.

White HR, Gorman DM. Dynamics of the drug-crime relationship. Criminal Justice. 2000; 1:155–218.

Table 1

Characteristics of arrestees and non-arrestees among MassHealth members with opioid use disorders in 2010

		Number of arrests in 2010		
	Total[1]	0	1	2+
Characteristic	(N=40,238)	(N=29,676)	(N=6,315)	(N=4,247)
Age, mean (SD)	36.29 (10.9)	37.47 (11.1)	33.68 (9.6)	31.89 (8.83)
Gender, n (%)				
Female	17,045 (42.4)	13,233 (44.6)	2,392 (37.9)	1,420 (33.4)
Male	23,193 (57.6)	16,443 (55.4)	3,923 (62.1)	2,827 (66.6)
Co-occurring mental illness, n (%)				
None	12,343 (30.7)	9,502 (32.0)	1,770 (28.0)	1,071 (25.2)
Serious mental illness	11,472 (28.5)	7,868 (26.5)	2,043 (32.4)	1,561 (36.8)
Major depression	5,389 (13.4)	4,154 (14.0)	800 (12.7)	435 (10.2)
Other mental illness	11,034 (27.4)	8,152 (27.5)	1,702 (27.0)	1,180 (27.8)
Co-occurring substance use disorder, n (%)				
None	16,724 (41.6)	13,475 (45.4)	2,135 (33.8)	1,114 (26.2)
Other drug	8,493 (21.1)	5,597 (18.9)	1,590 (25.2)	1,306 (30.8)
Alcohol	15,021 (37.3)	10,604 (35.7)	2,590 (41.0)	1,827 (43.0)
Arrests prior to 2010, n (%)				
None	9,468 (23.5)	8,765 (29.5)	498 (7.9)	205 (4.8)
1	3,000 (7.5)	2,297 (7.7)	483 (7.6)	220 (5.2)
2 or more	27,770 (69.0)	18,614 (62.7)	5,334 (84.5)	3,822 (90.0)

Table 2

Multivariable analysis of factors related to arrests among Medicaid members with opioid use disorders

Factor	Arrest in 2010 Odds ratio (95% CI)
Age in 2010	0.95 (0.95, 0.95)***
Gender	
Female	Reference
Male	1.31 (1.24, 1.38)***
Co-occurring mental illness	
None	Reference
Serious mental illness	1.29 (1.21, 1.38)***
Major depression	1.11 (1.04 1.18)**
Other mental illness	1.10 (1.01, 1.19)*
Co-occurring substance use disorder	
None	Reference
Other drug	1.50 (1.42, 1.59)***
Alcohol	1.95 (1.82, 2.08)***
Arrests prior to 2010	
None	Reference
1	3.47 (3.08, 3.90)***
2 or more	6.70 (6.16, 7.28)***

*
Significant at p < .05

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Significant at p < .01

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Significant at p < .001