CHARACTERISTICS OF ARRESTEES AT RISK FOR CO-EXISTING SUBSTANCE ABUSE AND MENTAL DISORDER

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Abstract

Recent research indicates that persons with co-existing mental illness and substance abuse are disproportionately represented in local jails. Those with co-existing disorder are reported to be at higher risk for arrest and to be arrested for less serious offenses. Although studies have been conducted to determine prevalence rates of co-existing disorder amongst arrestees, few studies have examined in any detail the discriminating characteristics of this group. In particular, little is known about how those presenting with dual symptoms differ from those who display only mental health symptoms or substance disorder symptoms. This study was conducted as a supplemental study to the Cleveland/Cuyahoga County ADAM (Arrestee Drug Abuse Monitoring) program in order to determine the characteristics of adult arrestees with mental health and/or substance disorders. In a sample of 311 adult arrestees, one-third (29%) scored at no risk for either mental health or substance disorders based on a screening instrument. Seventeen percent (17%) scored at risk for substance disorder with no symptoms of active mental disorder. Eighteen percent (18%) scored at risk for active mental disorder without substance abuse risks. Thirty five percent (35%) scored at risk for both mental disorder and substance disorder. Using multinomial logistic regression, those in the dual risk group were more likely to lack stable housing, to lack insurance, to have a history of substance abuse treatment and to test positive for cocaine use. Classification into the mental disorder risk only group was predicted by a personal and family history of mental illness. Members of the substance disorder risk only group were less likely to have health insurance and more likely to have a personal history of substance abuse treatment. This study supports the need for the development of an efficient means for identifying arrestees with dual risk and linking these clients to case management services, particularly to housing.

Introduction

The need to divert people with co-occurring substance abuse and mental health disorder from the criminal justice system to treatment is apparent. Recent research indicates that the majority of arrestees with severe mental disorder have a co-existing substance use disorder. The inability of jails to divert these offenders contributes substantially to the cycle of offense and incarceration.

This study was conducted to identify the characteristics of adult arrestees at risk for dual disorder, particularly as distinguished from those who have no risk, risk only for mental disorder or risk only for substance use disorder. Predictor variables examined in this study included gender, stable housing, insurance, employment, education, history of illness and treatment, results of urine drug testing and primary arrest charge. A secondary purpose of the study was to develop a dual risk screening interview that might be useful for jails to use at the time of booking in order to link clients to assessment services.

Literature Review

Current prevalence estimates of severe mental illness in prisons ranges between 6 and 15% and estimates are much higher for jails (Lamberti, Weisman, Schwarzkopf, Price, Ashton, & Trompeteer, 2001). The National Gains Center reports that persons with co-existing mental illness and substance abuse are disproportionately represented in local jails (GAINS, 2004). Abram and Teplin (1991) report that among jail detainees

with a severe mental disorder, 72 percent have a co-occurring substance use disorder. Prevalence rates for severe mental illness at jail entry are reported to be higher for females than for males (GAINS, 2002). Other studies have reported higher risk for substance use disorder for females in jail (Alemagno and Dickie, 2002; Abram, Teplin, & McClelland, 2001).

Jails and prisons today have been described as surrogate mental hospitals because of "the profound failure of the public mental health system to provide appropriate community-based services following institutionalization" (Godley, Finch, Dougan, McDonnell, McDermeit, and Carey, 2000: 137-138). This has been labeled as the criminalization of mental illness. In fact, some studies have reported that those at risk for dual disorder tend to be arrested for less serious offenses. Harry and Steadman (1988) found that arrest rates for mentally ill individuals were .76 to 1.96 times higher than for the general population. Teplin and Pruett (1992) report that mentally ill suspects had arrest rates nearly double those of suspects without mental illness. These authors observed that the dual risk clients were more likely to end up in the criminal justice system since they did not fit psychiatric programs reluctant to accept someone under the influence of a substance or detoxification programs reluctant to accept someone with a psychiatric disorder.

Currently, there are no universally agreed upon standards of evaluation for dual diagnosis (Kanwischer, 2001) so it is difficult to criticize jails for not implementing screening programs. Further, due to the heterogeneity of the population, effective screening practices have been difficult to implement (Lehman, 1996). Even so, Minkoff (1998) has suggested that dual diagnosis should be the expectation rather than the

exception. Once identified as in need of mental health services, there is often little to no treatment available in jails (Teplin, Abram and McClelland, 1997). This is further complicated by reports that, even with effective screening and linkage to treatment, individuals with comorbid substance abuse or dependence and psychiatric disorders have a poor prognosis (Drake, McHugo, and Noordsy, 1993).

There is a clear need to examine the profile of offenders presenting with dual symptoms. The purpose of this supplemental study was to identify characteristics of arrestees presenting with risk factors for current mental illness and/or current substance abuse or dependence.

Methodology

This study was conducted as a supplemental study to the Cleveland/Cuyahoga County ADAM (Arrestee Drug Abuse Monitoring) program (NIJ, 2003) in the second quarter of 2003 (April-June). The ADAM program collects interview and urine data on anonymous arrestees within 48 hours of arrest. Data include detailed demographic information, criminal justice involvement, personal drug use, treatment history and market use. Cleveland/Cuyahoga County was one of 35 jurisdictions across the United States participating in the ADAM program until the program was ended in 2003. In Cleveland, the ADAM sampling process included dividing booking facilities into two strata including the city of Cleveland and the other 65 booking sites located throughout Cuyahoga County, Ohio. The second strata were further divided into east side and west side booking facilities. Two sites were selected from each geographical area making for a total of 6 sites. In addition, data for female arrestees was collected at the Cuyahoga

County Jail. A detailed plan to access both stock and flow of arrestees was implemented to address the 24-hour representativeness of the sample.

A risk screening instrument developed within a previous study (Alemagno and Dickie, 2002) was implemented to classify Cleveland/Cuyahoga County arrestees into four analytical groups: arrestees at no risk for substance abuse or dependence or mental disorder; arrestees at risk for substance abuse or dependence with no risk for mental disorder; arrestees at risk for mental disorder with no risk for substance abuse or dependence; and arrestees at risk for both mental disorder and substance abuse or dependence. The risk screening instrument consists of twelve questions that have been derived by factor analysis. These questions are shown in Exhibit 1. Copies of the ADAM instrument and dual diagnosis supplement are attached in Appendix 1.

Exhibit 1: Risk Screening Instrument

(MENTAL DISORDER RISK)

1. Do your thoughts go so fast you are unable to think clearly about things or plan activities?
2. Do people tell you that they can't understand what you are saying even though it makes sense to you?
3. Are you hearing or seeing things that people say they cannot see or hear?
4. Do your emotions or feelings make it hard for you to do the normal day to day activities that you need or want to do?
5. Do you feel depressed and hopeless most of the time?
6. Have you been thinking about hurting yourself or committing suicide?

(SUBSTANCE ABUSE RISK)

1. Do you feel that you drink too much too much alcohol or use too much drugs?
2. Has drinking or drug use recently caused problems between you and your family or friends?
3. Have you recently been arrested due to your alcohol or drug use?
4. Have you needed to drink more or use more drugs to get the effect that you want?
5. Do you spend a lot of time thinking about or trying to get alcohol or drugs?
6. Do you feel bad or guilty about your drinking or drug use?

Note: A positive response to one ore more mental disorder risk AND one or more substance abuse risk questions indicates a risk for dual disorder.

Results

A total of 311 arrestees were interviewed and provided a urine sample submitted for testing. The Enzyme Multiplied Immunoassay Test (EMIT) screens for 10 drugs: amphetamines, barbiturates, benzodiazepines, marijuana, cocaine, methadone, opiates,

phencyclidine (PCP), methaqualone and propoxyphene (Darvon). All positive results for amphetamines are confirmed by gas chromatography (GC) to eliminate any over-the-counter medications. Of the respondents, 65% were male, 81% African-American, 87% had a previous arrest history, and 12% had no stable housing. About one-third (35%) reported having had previous substance abuse treatment and 26% reported having had previous mental health treatment. In terms of offense (primary offense), 35% were under arrest for a drug charge (drug possession or drug sale), 16% for a property crime, 14% for flight or probation violation, 10% for a violent crime, and 9% for domestic violence.

Examining risks related to current substance abuse or dependence and mental disorder using the risk screening instrument, about one third (n=93) of the sample scored at no risk. Seventeen percent (n=53) scored at risk for substance abuse or dependence with no current symptoms of active mental disorder. Eighteen percent (n=57) scored at risk for active mental disorder without substance abuse or dependence. Finally, about one third (n=108) scored at risk for both active mental disorder and substance abuse or dependence.

First, a series of bivariate contingency table analyses were conducted using chi-square on each of the predictor variables with the categorical variables indicating risk classification. Table 1 presents data by gender, race and education. Females were significantly more likely to be at risk for dual disorder (40.7% vs. 31.5%) or for mental disorder only (23.1% vs. 15.8%), while males were more likely to be classified as substance abuse risk only (19.2% vs. 13%) or no risk (33.5% vs. 23.1%). Differences in proportions by race and education are non-significant.

Table 1
Demographics by Risk Classification
(n= 311)

	Gender*				Race/Ethnicity				High School (GED)			
	Female		Male		Nonwhite		White		No		Yes	
	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)
Dual Risk	40.7	(44)	31.5	(64)	32.7	(82)	42.2	(25)	39.6	(57)	30.5	(51)
Mental Disorder Risk Only	23.1	(25)	15.8	(32)	17.9	(45)	20.3	(12)	18.1	(26)	18.6	(31)
Substance Abuse Risk Only	13.0	(14)	19.2	(39)	16.3	(41)	20.3	(12)	14.6	(21)	19.2	(32)
No Risk	23.1	(25)	33.5	(68)	33.1	(83)	16.9	(10)	27.8	(40)	31.7	(53)

Note: All percentages adjusted for missing data
*p<.05

Table 2 presents data related to employment, insurance and housing. Those who were employed full-time were more likely to be classified as no risk (33% vs. 26%) or at risk for mental disorder only (22.3% vs. 13%). Unemployed individuals, on the other hand, were at greater risk for substance abuse only (20.6% vs. 14.5%) or for dual risk (40.5% vs. 30.2%). Those who lacked insurance were more likely to be classified as substance abuse risk only (22.4% vs. 9.4%) or for dual risk (37.7% vs. 29.9%). The greatest proportional differences were observed related to housing, with those without stable far more likely to be classified as at risk for dual disorder (68% vs. 31.8%).

Table 2
Employment, Housing and Health Insurance by Risk Classification
(n= 311)

	Employed Full Time*				Stable Housing**				Health Insurance**			
	No		Yes		No		Yes		No		Yes	
	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)
Dual Risk	40.5	(53)	30.2	(54)	68.0	(17)	31.8	(91)	37.7	(69)	29.9	(38)
Mental Disorder Risk Only	13.0	(17)	22.3	(40)	12.0	(3)	18.9	(54)	15.8	(29)	22.0	(28)
Substance Abuse Risk Only	20.6	(27)	14.5	(26)	12.0	(3)	17.5	(50)	22.4	(41)	9.4	(12)
No Risk	26.0	(34)	33.0	(59)	8.0	(2)	31.8	(91)	24.0	(44)	38.6	(49)

Note: All percentages adjusted for missing data
*p<.05
**p<.01

This study also examined treatment history and family history of mental disorder or substance abuse. These results are presented in Table 3. Those who reported a history of treatment for mental health disorder were more likely to be classified as at risk only for mental disorder risk (23.8% vs. 16.5%) or dual risk (63.8% vs. 24.8%). The same relationship was true for those reporting a family history of mental disorder; however, the differences are not as pronounced for the dual risk classification (48.1% vs. 30.4). Those reporting a personal history of substance abuse treatment were more likely to be classified as being at risk for either substance abuse only (28.4% vs. 11.1%) or dual risk (50.5% vs. 26.6%). Those reporting a family history of substance abuse were more likely to be classified as at risk for dual diagnosis (43.8% vs. 22.7%) and less likely to be classified as a risk for substance abuse only (12.4% vs. 23.4%).

Table 3
Personal and Family Treatment by Risk Classification
(n=311)

	Ever Treated for Mental Problems**		Family History of Mental Problems**		Ever Treated for Substance Abuse**		Family History of Substance Abuse**	
	No % (n)	Yes % (n)	No % (n)	Yes % (n)	No % (n)	Yes % (n)	No % (n)	Yes % (n)
Dual Risk	24.8 (57)	63.8 (51)	30.4 (68)	48.1 (38)	26.6 (53)	50.5 (55)	22.7 (29)	43.8 (78)
Mental Disorder Risk Only	16.5 (38)	23.8 (19)	15.6 (35)	25.3 (20)	22.1 (44)	11.0 (12)	17.2 (22)	19.1 (34)
Substance Abuse Risk Only	20.0 (46)	8.8 (7)	20.1 (45)	10.1 (8)	11.1 (22)	28.4 (31)	23.4 (30)	12.4 (22)
No Risk	38.7 (89)	3.8 (3)	33.9 (76)	16.5 (13)	40.2 (80)	10.1 (11)	36.7 (47)	24.7 (44)

Note: All percentages adjusted for missing data
** p<.01

Results for criminal history and for urine testing for the two most prevalent drugs in our sample- marijuana and cocaine- are shown in Table 4. Individuals reporting having been in jail for more than 24 hours in the past were more likely to be classified as at risk for dual disorder (37.8% vs. 14.6%) or at risk only for substance abuse (18.9% vs. 4.9%). Additionally, those testing positive for cocaine were more likely to be classified as at risk for dual disorder (49.7% vs. 21%) or at risk for substance abuse (20.8% vs. 13.6%).

Table 4
History of Incarceration, Positive Marijuana and Positive Cocaine by Risk Classification
(n= 311)

	Ever in Jail > 24 Hours**		Positive for Marijuana		Positive for Cocaine**	
	No % (n)	Yes % (n)	No % (n)	Yes % (n)	No % (n)	Yes % (n)
Dual Risk	14.6 (6)	37.8 (102)	31.3 (61)	40.5 (47)	21.0 (34)	49.7 (74)
Mental Disorder Risk Only	31.7 (13)	16.3 (44)	20.5 (40)	14.7 (17)	24.1 (39)	12.1 (18)
Substance Abuse Risk Only	4.9 (2)	18.9 (51)	18.5 (36)	14.7 (17)	13.6 (22)	20.8 (31)
No Risk	48.8 (20)	27.0 (73)	29.7 (58)	30.2 (35)	41.4 (67)	17.4 (26)

Note: All percentages adjusted for missing data
**p<.01

Examining primary offense by risk classification, there were no significant relationships. These results are presented in Table 5.

Table 5
Primary Offense by Risk Classification
(n=311)

	Violence Offense		Property Offense		Drug Offense		Domestic Violence	
	No % (n)	Yes % (n)	No % (n)	Yes % (n)	No % (n)	Yes % (n)	No % (n)	Yes % (n)
Dual Risk	35.4 (97)	29.7 (11)	35.0 (91)	33.3 (17)	31.1 (59)	40.5 (49)	34.6 (98)	35.7 (10)
Mental Disorder Risk Only	17.2 (47)	27.0 (10)	18.8 (49)	15.7 (8)	21.6 (41)	13.2 (16)	17.0 (48)	32.1 (9)
Substance Abuse Risk Only	18.2 (50)	8.1 (13)	15.8 (41)	23.5 (12)	17.9 (34)	15.7 (19)	18.4 (52)	3.6 (1)
No Risk	29.2 (80)	35.1 (13)	30.4 (79)	27.5 (14)	29.5 (56)	30.6 (37)	30.0 (85)	28.6 (8)

Note: All percentages adjusted for missing data

In a final analysis, significant predictors (presented in the tables above) were entered into a multinomial logistic regression model (using the SPSS for Windows 11.5 application) with the four risk classifications as the outcome variables. The no risk classification is designated as the reference category for this analysis, therefore significance tests, betas and odds ratios are interpreted as the difference between the no risk group and the group with the reported value. The summary table is presented in Table 6.

Membership in the classification of dual risk is predicted by lack of stable housing (b=-2.520; p=.024) and insurance (b=-916; p=.014). Also, those in the dual risk category are more likely to have a history of mental health treatment (b=3.329;p=.000), more likely to have a family history of substance abuse treatment (b=.849;p=.025), and

more likely to test positive for cocaine (b=1.432; p=.000). Classification into the mental risk only classification is predicted by a greater likelihood of having a personal history (b=2.851; p=.000) and family history (b=.925; p=.038) of treatment for mental illness. Finally, members of the substance abuse only risk group were less likely to have health insurance (b=-1.228; p=.004) and more likely to have a personal history of substance abuse treatment (b=1.941; p=.000).

Table 6. Multinomial Logistic Regression Model Predicting Risk Classification

	Risk for Dual Diagnosis†				Risk for Only Mental Illness Diagnosis†				Risk for Only Substance Abuse Diagnosis†			
			95% CI for Exp(B)				95% CI for Exp(B)				95% CI for Exp(B)	
	B	Exp(B)	Lower	Upper	B	Exp(B)	Lower	Upper	B	Exp(B)	Lower	Upper
Intercept	.461				.898				-.642			
Stable Housing	-2.520*	.080	.009	.718	-1.702	.182	.017	1.909	-.932	.394	.035	4.378
Currently Insured	-.916*	.400	.193	.828	-.357	.700	.335	1.460	-1.228**	.293	.126	.680
Personal History of Mental Health Problems	3.329**	27.921	6.166	126.433	2.851**	17.307	3.677	81.451	1.478	4.383	.812	23.664
Family History of Mental Health Problems	.643	1.901	.774	4.668	.925*	2.521	1.054	6.034	.054	1.055	.345	3.232
Family History of Substance Abuse	.849*	2.337	1.110	4.921	.264	1.303	.615	2.757	-.453	.636	.283	1.427
Personal History of Substance Abuse Treatment	.788	2.199	.899	5.377	.214	1.239	.434	3.539	1.941**	6.965	2.706	17.926
Served More than 24 Hours in Jail	.408	1.504	.480	4.712	-.368	.692	.276	1.737	.767	2.152	.436	10.628
Positive for Cocaine	1.432**	4.186	1.964	8.919	-.015	.986	.431	2.253	.589	1.802	.789	4.116

†*Compared to No Risk Reference*
*p<.05
**p<.01

FINDINGS AND DISCUSSION

There are several important limitations to the work presented here. The supplement was conducted during one ADAM quarter only; therefore, there may be concerns regarding the seasonal variation of substance abuse or mental disorder. The data is based on self-report of respondents. Further, this study does not report on

diagnoses, but instead on risk factors for mental disorder and substance abuse that have discriminated these clients in previous studies. To support the results of this study, a more extensive study would be required that would allow for comprehensive diagnostic assessment and a more detailed examination of the temporal order of variables.

Nevertheless, there are important policy implications of this study. First, it is clear that the overlap between substance disorder and mental disorder is substantial. For clients at risk, jails may be well advised to consider dual risk to be the norm, rather than the exception as recommended by Minkoff (1998). In this pilot, we find one-third of arrestees indicating at least one risk factor for mental disorder and one risk factor for substance disorder. Given that there are no accepted standards for evaluation for dual diagnosis (Kanwischer, 2001), the system may be misdiagnosing a substantial number of clients who are disproportionately sent to either mental health services or substance abuse services that are not prepared for clients with dual diagnosis.

Furthermore, in this study several factors distinguished those at dual risk. Given that dual risk clients tended to be significantly more likely to be homeless, unemployed or uninsured, sending an offender back to the community with a script for outpatient treatment may be insufficient. Dual risk clients are in need of comprehensive and coordinated case management, with linkage to appropriate housing and resources to achieve positive treatment outcomes. Yet, there is a reliance on outpatient services for the majority of clients.

This study supports previous research indicating the importance of family history as a potential risk factor. Since those at dual risk are more likely to have family histories of mental disorder and substance abuse, this may be important information for early

intervention programs. Programs that target children of those with mental disorder and substance abuse should be considered. Waiting for these children to enter the juvenile system may be too late, given that by this time these juveniles already have manifested addiction and mental disorder.

This study supports a strong link between cocaine use and dual risk. In this sample, almost half of the cocaine users scored at dual risk. If this relationship is supported in future diagnostic research, the implication is that effective treatment for cocaine addiction will likely need to include comprehensive services for dual disorder.

Finally, in this sample, the majority of dual risk clients reported previous treatment history. Half of the dual risk group reported previous substance abuse treatment and almost two-thirds reported previous mental health treatment. Clearly, this group represents the treatment segment which is using the greatest portion of public treatment services while cycling through the criminal justice system as well.

A draft dual risk screening instrument is presented in Exhibit 2. Future research will be dedicated to examining the predictive validity of the proposed instrument. With the preliminary indication that up to one third of arrestees may be at dual risk, it will be critical to develop effective and efficient means to link these clients to appropriate diagnostic and treatment services.

Cleveland Dual Diagnosis Screening Instrument

I am going to ask you a few questions about how you have been feeling recently. By recently, I mean the past 30 days or past month.

Need for Mental Health Services		Score
Do your thoughts go so fast that you are unable to think clearly about things or plan activities?	Yes = 1 No = 0	
Do people tell you that they can't understand what you are saying, even though it makes sense to you?	Yes = 1 No = 0	
Are you hearing or seeing things that people say they cannot see or hear?	Yes = 1 No = 0	
Do your emotions or feelings make it hard for you to do the normal day to day activities that you need or want to do?	Yes = 1 No = 0	
Do you feel depressed and hopeless most of the time?	Yes = 1 No = 0	
Have you been thinking about hurting yourself or committing suicide?	Yes = 1 No = 0	
Mental Health Services Need Total		

Need for Alcohol or Drug Addiction Services		Score
Have you felt that you drink too much alcohol or use too much drugs?	Yes = 1 No = 0	
Has drinking or other drug use caused problems between you and your family or friends?	Yes = 1 No = 0	
Have you been arrested due to your alcohol or drug use?	Yes = 1 No = 0	
Have you needed to drink more or use more drugs to get the effect that you want?	Yes = 1 No = 0	
Do you spend a lot of time thinking about or trying to get alcohol or drugs?	Yes = 1 No = 0	
Do you feel bad or guilty about your drinking or drug use?	Yes = 1 No = 0	
Alcohol and Drug Addiction Services Total		

If this Total is 1 or more **AND** **If this Total is 1 or more**

Additional Questions		Score
Has anyone in your family ever had a mental illness?	Yes = 1 No = 0	
Has anyone in your family ever had a drinking or drug problem?	Yes = 1 No = 0	
Have you ever been treated by a counselor, social worker or doctor for a mental health problem?	Yes = 1 No = 0	
Have you ever been treated for alcohol or drug abuse or for detox?	Yes = 1 No = 0	
Do you have health insurance?	Yes = 0 No = 1	
Have you been living on the street or in a shelter?	Yes = 1 No = 0	
Other than this time, have you ever been in jail?	Yes = 1 No = 0	
In the past 30 days, have you been unemployed?	Yes = 1 No = 0	
Additional Total		

Mental Health Services Need Total

Alcohol and Drug Addiction Services Need Total

Need for Additional Services Total

Dual Services Need Total

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APPENDIX