Chapter Three

Substance Abuse and Juvenile Justice

Symposium

Perspectives on Comorbidity and Children's Mental Health Services in the U.S.

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Symposium Introduction

Lynn A. Warner & Kathleen J. Pottick

This symposium used national data from the 1997 Client/Patient Sample Survey collected by the Center for Mental Health Services (CMHS; Milazzo-Sayre et al., 2001) to examine co-occurring psychiatric conditions among youth (ages 0-17) receiving mental health services in the United States. The presentations were supported with funding from the Annie E. Casey Foundation, and technical assistance from CMHS (Marilyn Henderson, Ronald Manderscheid, and Laura Milazzo-Sayre). The initial presentation reported on the sociodemographic characteristics of youth receiving psychotropic medication in the U.S. mental health service system, and examined whether the prevalence of medication use differed by number of diagnoses. This was followed by a presentation about age and gender differences in the prevalence of substance use conditions among youth with other psychiatric diagnoses. The final presentation included estimates of comorbidity among youth with the disruptive behavior disorders of conduct disorder (CD) and attention deficit/hyperactivity disorder (ADHD), and examined the presenting problems that differentially predicted CD, ADHD, and their co-occurrence for boys and girls. The symposium is responsive to last year's plenary charge, posed by SAMHSA's Administrator Charles Curie (2002), to provide empirical data on co-occurring disorders. The presentations established baseline data on the extent and nature of comorbidity among youth receiving mental health care, and identified implications for service delivery and prevention of chronic mental illness.

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Medication Use among Youth with Single and Dual Diagnoses in the U.S. Mental Health Service System

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Introduction

Prescription rates for psychotropic medications for youth have increased dramatically in recent years (Vitiello, 2001). However, compared to adults, the safety and efficacy of the use of psychotropic medications by youth are relatively unknown. Despite recognition that youth differ from adults with regard to developmental and neurobiological processes, decisions about dosage and type of medication for youth have been based on results from clinical trials with adults. It is estimated that 80% of all pediatric medications, including psychotropics, are currently "off-label" because their use for youth has not officially been approved by the Food and Drug Administration (American Academy of Pediatrics, 1995).

Studies on psychotropics that have been conducted thus far have mainly focused on the effects of a single medication prescribed for a single disorder. Much less is known about prescribing practices for youth with co-occurring disorders. Research suggests that youth with multiple diagnoses are more likely to receive medication, but treatment studies and clinical trials generally exclude children who have more than one disorder (Wasserman, Ko, & Jensen, 2001). Lack of attention to medication use by youth with co-occurring disorders is problematic for several reasons. First, a drug designed for one disorder may exacerbate symptoms of the co-occurring disorder. Second, if multiple drugs are prescribed, the combinations may not be efficacious or may yield side effects that are difficult to tolerate. Third, persons with co-occurring disorders are more likely to abuse alcohol and illicit substances, which typically interferes with adherence to prescribed regimens.

The purpose of this research is to examine the sociodemographic characteristics of youth receiving psychotropic medication in the U.S. mental health service system, and to determine if the prevalence of medication use differs with number and type of diagnoses. In the absence of a body of research on medication practices for youth with more than one psychiatric diagnosis, we generate models to test the relationship between number of diagnoses and receipt of medication, controlling on type of diagnosis and sociodemographic characteristics.

Method

Sample

Data are from the 1997 Client/Patient Sample Survey (CPSS; Milazzo-Sayre et al., 2001) collected by the Center for Mental Health Services (CMHS). Within 1,598 randomly selected treatment programs, detailed questionnaires were completed from medical records of randomly selected youth who were admitted to inpatient, outpatient or residential treatment facilities (unweighted N = 4,035) or who were under care in these organizations on May 1, 1997 (unweighted N = 4,014; see Milazzo-Sayre et al., 2001). The survey oversampled youth, thereby allowing reliable national estimates of mental health service utilization for different subgroups in the population for the first time.

This study is based on the under care sample of youth between the ages of 0 and 17, excluding youth in facilities in the U.S. territories of Puerto Rico, Guam, and the U.S. Virgin Islands (unweighted N = 3,995; weighted N = 559,769). Close to 43% of the sample was between the ages of 13 and 17 years, about half was between 6 to 12 years (50.3%), and the rest was younger than 6 (6.8%). The majority were boys (63.5%), and primarily non-minority (White = 61.4%; Black = 22.6%; Hispanic = 13.4%; other = 2.6%). Most youth were in outpatient services (91.9%), followed by residential (5.9%) and inpatient care (2.2%).

Measures

Diagnoses were based on DSM or ICD diagnostic classification schemes (American Psychiatric Association, 1994; World Health Organization, 1980, respectively), which were coded into eleven categories: attention deficit/hyperactivity (ADHD; 23.0%), conduct (CD; 19.2%), adjustment (15.8%), mood (14.7%), anxiety (7.9%), developmental or pervasive (6.2%), psychotic (1.3%), alcohol or drug abuse or dependence (2.4%) personality (1.5%), social conditions (V-codes; 3.3%), and other (0.1%). The number of diagnoses was constructed by examining whether a child had no assigned psychiatric diagnosis (4.6%), only a principal DSM or ICD diagnosis (36.7%), or both a principal and secondary or dual DSM or ICD diagnosis (58.7%). Psychotropic medication was one of many services that could have been received by youth under care, and was indicated with a dichotomous *yes* or *no* variable.

Analysis

Chi-squared analysis was used to test bivariate relationships, and logistic regressions were used to test multivariate relationships. Analyses were conducted with SUDAAN for PC-SAS to account for the complex survey design and provide two-tailed estimates of significance that are based on appropriately adjusted standard errors.

Results

About one third (32.5%) of the 559,769 youth (weighted) in the sample were treated with psychotropic medication (see Table 1). Medication rates differed significantly by sex (34.9% of boys versus 28.3% of girls; $\chi^2 = 6.42$, $p < .05$) and age (35.1%, 32.8%, and 13.3% of 13-17, 6-12 and 0-5 year olds, respectively; $\chi^2 = 24.5$, $p < .001$). The payment sources with the highest rates of medication were Medicaid (34.2%) and other public sources (41.0%), while no fee/charity care had the lowest (22.4%) ($\chi^2 = 15.3$, $p < .001$). Finally, medication rates differed significantly across service settings ($\chi^2 = 63.8$. $p < .001$): 76.2% in inpatient care, 59.2% in residential care, and 29.7% in outpatient care.

Medication rates varied depending on the number and type of diagnoses. Youth with two diagnoses (40.4%) had significantly higher rates of medication than youth with a single diagnosis (28.9%), and no psychiatric diagnosis (14.0%) ($\chi^2 = 30.95$, $p < .001$). Medication rates for principal diagnoses ranged from 4.8% (social conditions) to 65.9% (psychotic disorders). Table 2 shows medication usage for the five most common diagnoses in the sample, arranged from most to least prevalent. Diagnostic categories were disaggregated to present medication rates for the principal diagnosis when it was the *only* diagnosis (Column 1), and for the principal diagnosis when it was coupled with another diagnosis (Column 2). There was a strong pattern of higher medication rates among youth with two diagnoses compared to one; these differences are significant when one of the diagnoses is conduct or adjustment disorder. For example, of the youth who were diagnosed with CD only, 23.4% received medication, whereas 35.4% received medication when the diagnostic profile included both CD and another disorder ($\chi^2 = 5.45$, $p < .05$). The medication rate for adjustment disorder doubled with the number of diagnoses (12.2% versus 25.0% for one versus two diagnoses; ($\chi^2 = 4.23$, $p < .05$).

Two multivariate models were used to evaluate the association between number of diagnoses and medication use (not tabled). The first model included number of diagnoses with controls for age, sex, race, payment source, and program setting. Model fit significantly improved with the addition of type of diagnosis ($p < .0001$, -2 log likelihood change of 544.97). Overall, the multivariate results were largely consistent with results from the bivariate analyses. Although the magnitude of the effect of dual diagnosis decreased from Model I to Model II (odds ratio changed from 1.47 to 1.28), number of diagnoses remained a significant predictor of medication. The odds of medication receipt were significantly greater for members of the two older age groups compared to the youngest (*OR* = 2.26 for 6-12 year olds vs. 0-5 year olds; *OR* = 2.68 for 13-17

Table 1
Sociodemographic Characteristics of Youth Receiving Medication in Mental Health Services in the United States: 1997 National Estimates

Sociodemographic Characteristics	*National estimate of youth receiving medication*	*%*	*Standard Error*
Age group **			
0-5 years	5,046	13.3	2.8
6-12 years	92,317	32.8	2.0
13-17 years	84,368	35.1	2.3
Gender *			
Boys	123,871	34.9	2.0
Girls	57,860	28.3	2.1
Race-ethnicity[a]			
Whites	115,524	33.6	1.9
Blacks	36,337	28.7	3.0
Hispanics	23,755	31.7	4.1
All others	6,115	42.5	7.0
Payment source **			
Medicaid	105,168	34.2	2.1
Other public	31,824	41.0	3.7
No fee	7,373	22.4	5.2
Private insurance	25,443	25.9	3.0
Personal resources	11,923	27.7	4.2
Service setting **			
Inpatient	9,439	76.2	3.9
Outpatient	152,765	29.7	1.7
Residential care	19,527	59.2	4.1
Total	181,731	32.5	1.6

Note. Youth population includes all children and adolescents ages 0-17 years of age. This table represents 3,995 observations (559,769 weighted observations) from the 1997 Client Patient Sample Survey. US territories of Puerto Rico, Guam, and the US Virgin Islands were excluded.

[a] Whites, Blacks and All Others exclude Hispanics.

*$p < .05$; **$p < .001$

Table 2
Percentage of Youth Receiving Medication by Single and Dual Diagnoses for Five Most Prevalent Principal Psychiatric Diagnoses

	Medication Use			
	Single Diagnosis		*Dual Diagnosis*	
	%	*(SE)*	*%*	*(SE)*
Attention Deficit/Hyperactivity Disorder	48.4	3.6	56.4	4.0
Conduct Disorder *	23.4	3.2	35.4	4.2
Adjustment Disorder *	12.2	2.7	25.0	5.4
Mood Disorder	42.4	5.6	47.0	5.4
Anxiety Disorder	29.9	5.2	35.2	6.2

Note. Youth population includes all children and adolescents ages 0-17 years of age. This table represents 3,995 observations (559,769 weighted observations) from the 1997 Client Patient Sample Survey. US territories of Puerto Rico, Guam, and the US Virgin Islands were excluded. The diagnoses are listed in order of prevalence in the population: Attention deficit/hyperactivity (23.0%), conduct (19.2%), adjustment (15.8%), mood (14.7%), and anxiety (7.9%), representing 80.6% of the under care youth population.

* Rate of medication for dual diagnosis is significantly greater than rate for single diagnosis, $p < .05$

year olds vs. 0-5 year olds). Compared to youth in inpatient settings, the odds of medication receipt are significantly lower compared for youth in residential (*OR* = 0.38) and outpatient services (*OR* = 0.13). Payment source was significantly associated with medication use; examination of the range of possible contrasts shows private pay sources were about half as likely as Medicaid pay sources to receive medication. Compared to youth with a principal diagnosis of ADHD, youth with any other diagnosis were significantly less likely to receive medication (odds ratios range between 0.08 and 0.57 for substance use disorders and mood disorders compared to ADHD). The only exception was youth with psychotic disorder, who were equally likely to receive medication as youth with ADHD. Finally, sex and race were not significantly associated with medication.

Discussion

The results indicate that youth with more than one disorder are more likely to receive medication than those with a single diagnosis, regardless of principal diagnosis. Although the implications of this study are limited because the data do not include information about the specific type of psychotropic medication(s) the youth are receiving, the study nevertheless raises important concerns because we currently lack sufficient knowledge about the efficacy and safety of psychotropics when multiple illnesses are present.

Given the growing rate of psychotropic prescriptions for youth (Zito et al., 2002), more information is needed about the long-term consequences of medication use by children and adolescents, particularly those who are already at risk for substance abuse due to dual diagnosis. In the near term, it is important to design clinical trials that can generate much needed information about medication efficacy and safety when two distinct diagnoses co-exist.

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Co-occurring Substance Use and Psychiatric Disorder: Opportunities for Targeted Intervention

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Introduction

Substance abuse among adolescents with mental illness is often difficult to detect and assess, and it presents challenges to service providers who may not be located in systems that are prepared to attend to both issues. Nevertheless, accurate detection and assessment are critical because substance abuse is a strong predictor of chronic mental illness among persons with a psychiatric disorder, and substance use is highly prevalent in the general adolescent population. Research generally has found gender differences in the prevalence of co-occurring substance abuse and psychiatric disorders depending on the specific psychiatric disorder. For example, boys have a higher prevalence of conduct disorder and substance abuse than girls (Hovens, Cantwell, Kiriakos, 1994; Kessler, Avenevoli, & Merikanagas, 2001; Whitmore, et al., 1997), while girls have a higher prevalence of depression and substance abuse than boys (Grella, Hser, Joshi, & Rounds-Bryant, 2001; Kessler et al., 2001; Whitmore et al., 1997).

In addition to diagnostic differences between boys and girls, there are also differences in patterns of substance use experimentation. According to national on-going surveillance systems such as the National Household Survey on Drug Abuse and Monitoring the Future, boys report using illicit drugs and alcohol more frequently than girls (Johnston, O'Malley, & Bachman, 2003; Substance Abuse and Mental Health Services Administration, 2002), although girls tend to report higher rates of non-medical use of prescription drugs (National Institute on Drug Abuse, 2001). Studies restricted to youth in mental health services often show similar drug use prevalence for boys and girls, and similar onset ages (Costello, Erkanli, Federman, & Angold, 1999; Miller, Hoffmann, Ninonuevo, & Astrachan, 1997; Whitmore et al., 1997).

Nevertheless, information about the prevalence of co-occurring psychiatric problems and drug and alcohol use in the youth mental health service system is relatively modest. We know even less about gender and age differences. Knowledge about drug and alcohol abuse by boys and girls of different ages in the service population will enable us to make strategic programmatic interventions in service settings, and potentially design prevention programs targeted to youth who are most at risk of developing co-occurring disorders.

The present study examines substance use patterns among youth with psychiatric disorders who received care in the U.S. mental health service system in 1997. Specifically, we aim to estimate the

prevalence of substance use problems and disorders among boys and girls with other psychiatric diagnoses, and analyze their co-occurrence among boys and girls of different ages. This research improves upon former studies by using national service data that oversampled youth so that we have reliable estimates of the prevalence across the ages at which youth are most at risk of using substances.

Method

Sample

The 1997 Client/Patient Sample Survey (CPSS; Milazzo-Sayre et al., 2001) was used for this study. Data are from randomly selected case files of youth, ages 0 through 17, from randomly selected treatment facilities and constitute two distinct samples: youth admitted to inpatient, outpatient, and residential treatment facilities during 1997 (N = 4,035) and youth who were under care in these organizations on May 1, 1997 (N = 4,014). This study reports on the under care sample. Youth in facilities in the U.S. Territories (i.e., Guam, Puerto Rico, and the U.S. Virgin Islands) were excluded from analysis. Youth under the age of 11 were also excluded, because substance use presenting problems and diagnoses are infrequent prior to that age. All analyses were conducted on a weighted sample of 340,415 youth (unweighted N = 2,689) using SAS-SUDAAN to adjust for the complex sample design.

Measures

Diagnoses. Principal and secondary or dual ICD and DSM-based diagnoses (World Health Organization, 1980; American Psychiatric Association, 1994) were abstracted from medical records. If either the principal or secondary diagnosis was alcohol or drug abuse or dependence, the youth was counted as having a substance use disorder in addition to the psychiatric disorder.

Presenting problems. Information on presenting problems at the time of admission was gathered from a multiple item checklist of problems that included one item for alcohol use and one for drug use. For this analysis, youth identified as having an alcohol use presenting problem, drug use presenting problem, or both, were designated as having a co-occurring substance use presenting problem.

Co-occurring condition. Youth with a psychiatric disorder who had either a substance use diagnosis or presenting problem were counted as having a co-occurring substance use condition.

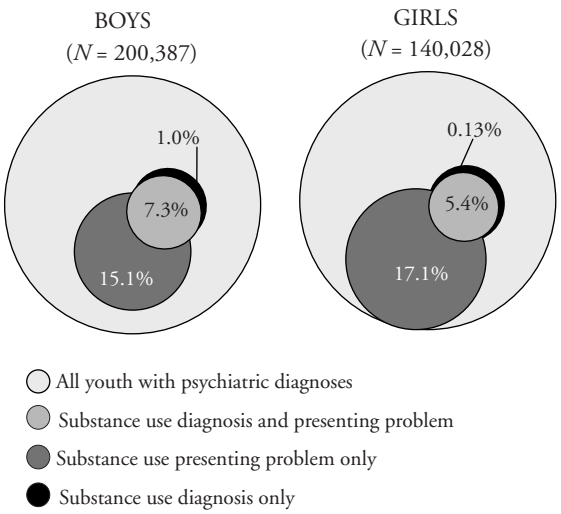
Psychiatric care setting. Care setting was divided into three categories: inpatient (weighted N = 9,975), residential (weighted N = 28,494), and less than 24-hour care (outpatient; weighted N = 301,946).

Global Assessment of Functioning (GAF). The GAF (American Psychiatric Association, 2000) scale takes into consideration the psychological, social, and occupational functioning of individuals that are not due to physical or environmental limitations. This scale ranges from 0 to 100 with a lower score indicating more functional limitations. For the present study, the scale was recoded into a dichotomous variable with scores less than or equal to 60 coded "1" (weighted N = 236,644), otherwise "0" (weighted N = 103,771).

Results

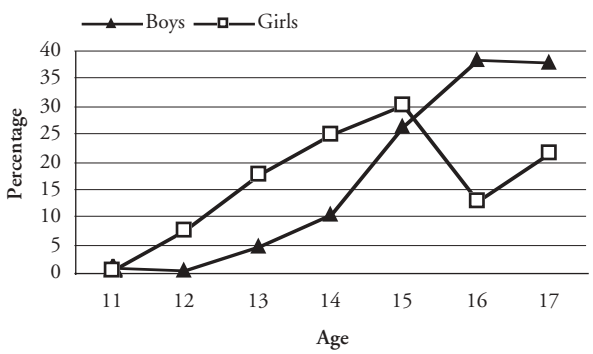
Figure 1 shows the distribution of substance use disorder and substance use presenting problems among boys and girls with a psychiatric diagnosis. Presenting problems related to substance use are more prevalent than substance use diagnosis for both boys and girls (15.1% versus 8.3% for boys; 17.1% versus 5.6% for girls), and there are no significant gender differences for any of the substance use measures. When the results are stratified by age, however, significant gender differences in substance use patterns emerge (see Figure 2). Before the age of 15, rates of substance use diagnoses and substance use presenting problems are higher for girls than boys. After the age of fifteen, however, the rates among boys are higher; the largest difference occurs at age 16 (38.4% among boys and 13.1% among girls).

Figure 1
Youth with a Substance Use Diagnosis, Presenting Problem or Both in Mental Health Services in the United States, 1997*



*Youth population includes all children and adolescents ages 11-17 years of age, and comprises 340,415 weighted observations from the 1997 Client Patient Sample Survey. US territories of Puerto Rico, Guam, and the US Virgin Islands were excluded. Four observations with missing substance use presenting problems were excluded.

Figure 2
Distribution of Substance Use Condition by Age and Gender among Youth in Mental Health Services in the United States, 1997*



*Youth population includes all children and adolescents ages 11-17 years of age, and comprises 340,415 weighted observations from the 1997 Client Patient Sample Survey. US territories of Puerto Rico, Guam, and the US Virgin Islands were excluded.

Multivariate logistic regressions were conducted to evaluate the effect of gender, age, and their interaction on the odds of having a substance use condition. Because of the non-linear age effect in the bivariate analysis, the regression models included a square term for age. Both the linear and non-linear measures of age were significant, as well as gender and the interaction of age and gender (see Table 1). The coefficients in Model 1 can be used to calculate the predicted odds (and probabilities) of having a substance use condition based on specific age and gender combinations. Results from these calculations are consistent with Figure 2 and show that girls are more likely to have a substance use condition than boys during early adolescence. For example, a girl at age 12 has a 7.5 % chance of developing a substance use condition, while the probability for a boy at the same age is 1%. With age, the difference between boys and girls decreases. By age fifteen, the probability of girls having a substance use condition begins to drop, while the probability for boys escalates. By age 17, the probability that a boy will have a substance use condition is 39.5 %, and the probability for a girl is 15%. The pattern is unchanged when controls for GAF and care setting were included (see Table 1, Model 2).

Table 1
Multivariate Predictors of Co-Occurring Substance Use Condition among Youth with Psychiatric Diagnoses in Mental Health Services in the United States, 1997 (log odds presented)

	Model 1	*Model 2*
Predictors	β	β
Intercept	-1.891***	-1.801***
Age (centered at age 14)	1.007***	0.996***
Age*Age	-0.173***	-0.160***
Gender (ref: male)	0.726**	0.820***
Age (ref:14 years)*Gender(ref:male)	-0.679***	-0.663***
GAF ≤ 60 (ref: GAF > 60)	–	0.733***
Care setting (ref: residential care)		
Inpatient care	–	-0.354
Outpatient care	–	0.817***

Note. Youth population includes all children and adolescents ages 11-17 years of age, and comprises 340,415 weighted observations from the 1997 Client Patient Sample Survey. US territories of Puerto Rico, Guam, and the US Virgin Islands were excluded.

The Wald test is used to examine whether a logistic coefficient is statistically significantly different from 0 in the logistic model, or whether an effect for the predictor is statistically significant.

*p < .05; **p < .01; *** p < .001

Discussion

These findings raise important questions about the mechanisms that account for the significantly different substance use patterns among boys and girls in mental health services. In particular, the higher rate of substance use problems among girls in early adolescence in comparison to boys, and the lower rate among girls in comparison to boys at older ages, merits further exploration. Further research must determine if these are true differences in substance use patterns, or whether they are due to parents' and providers' gender-based assumptions about youthful experimentation versus deviant behavior.

The results also have implications for prevention and treatment. Identification of age-related differences in patterns of substance use problems may help channel resources to youth who could be prevented from developing a substance use disorder. Moreover, the apparent gender differences in the developmental trajectories of substance use conditions suggest that prevention and treatment may be most effective if they are gender-specific.

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Comorbidity Patterns among Youth with Disruptive Behavior Disorder Diagnoses in the Mental Health Service System in the United States, 1997

Kathleen J. Pottick, Lynn A. Warner & Valentine Ortiz-Meyer

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Introduction

The term "disruptive behavior disorder" covers a range of discrete diagnostic classifications that generally include conduct disorders (CD) and attention deficit-hyperactivity disorders (ADHD). According to the Surgeon General's report on mental health (U.S. Department of Health and Human Services, 1999), youth with CD have persistent patterns of behavior in which they violate the rights of others, or violate norms or rules that are appropriate to their age. Their behaviors are more than mischievous pranks, and youth frequently have serious difficulties in school, at home, and in the community. Youth with ADHD have significant problems paying attention and concentrating, and frequently behave hyperactively and impulsively. Despite good intentions, youth have severe trouble listening to parents, getting along with peers, and following rules.

Girls are less likely than boys to have ADHD diagnoses (Biederman et al., 2002; Loeber & Keenan, 1994) and CD diagnoses (Cote, Zoccolillo, Tremblay, Nagin, & Vitaro, 2001; Stahl & Clarizio, 1999). However, criteria for ADHD and CD have been normed for boys, possibly leading to unreliable estimates of prevalence in the population. While most studies have excluded girls (Biederman et al., 2002), those that do include them highlight that boys and girls express behaviors—particularly aggression—in different ways so that clinical criteria may be differentially applied (Biederman et al., 2002; Cote et al., 2001; Newcorn et al., 2001; Stahl & Clarizio, 1999). While girls have lower prevalence of each disorder than boys, girls are more likely than boys to have both (Loeber & Keenan, 1994).

There is a high rate of comorbidity between ADHD and CD; it is estimated that between 30% and 50% of youth with ADHD meet the criteria for CD (Beauchaine, Katkin, Strassberg, & Snarr, 2001; Jensen et al., 2001). When these disorders co-occur, youth are at increased risk for future delinquent and antisocial behavior. Moreover, these two disorders in combination contribute to serious problems in peer and other interpersonal relationships, disruption in academic performance, substance abuse, and frequent legal troubles (Beauchaine et al., 2001; Keller et al., 1992; Loeber & Keenen, 1994; Lock & Strauss, 1994).

ADHD and CD are sometimes difficult to differentiate because similar behavioral problems are present in both diagnoses and rating scale criteria for the disorders often overlap (Burns, 2000; Lock & Strauss, 1994). Children with either disorder behave in disruptive ways (Beauchaine et al., 2001). Thus, estimating the prevalence of comorbidity of CD and ADHD is complicated because of overlapping symptoms.

The aim of our study is to describe the prevalence of CD, ADHD and their co-occurrence in the mental health service population. The data set includes presenting problems—a comprehensive list of behavioral problems identified at intake. These represent concerns identified by parents and clinicians that are not necessarily captured by diagnostic criteria. By assessing the associations between these presenting problems and the diagnoses, we pinpoint areas of overlap and uniqueness that may help guide new intervention targets. We estimate the prevalence of comorbidity by gender, and test whether the problem profiles for ADHD, CD and their co-occurrence vary.

Method

Sample

The 1997 Client/Patient Sample Survey (CPSS; Milazzo-Sayre et al., 2001) was used for this study. Data are from randomly selected case files of youth ages 0-17 years of age from randomly selected treatment facilities and constitute two distinct samples: youth admitted to inpatient, outpatient, and residential treatment facilities during 1997 (N = 4,035) and youth who were under care in these organizations on May 1, 1997 (N = 4,014). This study is based on the under care sample. Youth in facilities in the U.S. Territories (i.e., Guam, Puerto Rico, and the U.S. Virgin Islands) were excluded from analysis. The sample was further restricted by including only youth with diagnoses of CD or ADHD (unweighted N = 1,807).

Measures

Principal and secondary or dual ICD- and DSM-based diagnoses (World Health Organization, 1980; American Psychiatric Association, 1994, respectively) were abstracted from medical records. If the principal diagnosis was CD or ADHD only, the youth was counted as having a single diagnosis. If the youth had a secondary or dual diagnosis of either CD or ADHD, the youth was counted as comorbid.

Information on presenting problems at the time of admission was gathered from a multiple item checklist (0 = *no mention*; 1 = *mention*) that were coded into nine categories: (1) social disturbances (problems coping with daily roles, family problems, interpersonal skill deficit, withdrawal, runaway behavior); (2) aggression; (3) aggression to people or animals (sexual aggression, fire setting, disruptive activity); (4) delinquency (delinquency, involvement with the criminal justice system); (5) substance use (alcohol use, drug use); (6) victimization (victim of abuse/assault/neglect, post-traumatic stress reaction); (7) self harm (suicidal thoughts or behaviors, self harm, eating disorder); (8) internalizing disturbances (anxiety, depressed mood, grief, phobia, thought disturbance, sexual adjustment, sleep disturbance); and (9) medical problems.

Analysis

Chi-squared analyses were used to test associations between diagnoses, presenting problems and gender. Binary logistic regressions were used to predict single and comorbid diagnoses. Analyses were conducted on unweighted data; thus, these results are not nationally representative.

Results

Close to half of the youth in the under care population were diagnosed with ADHD, CD, or both disorders (45%). Of this subgroup, most youth were diagnosed with CD (48%), followed by ADHD (39%), and comorbid ADHD/CD (13%). About two-thirds of the youth with ADHD and/or CD were boys (67% boys vs. 33% girls). Boys had a higher rate of ADHD than girls (41% vs. 36%), but girls had a higher rate of CD than boys (53% vs. 46%). The percentage of boys and girls who had comorbid ADHD/CD was roughly the same (13% vs. 12%).

Most of the youth in the sample had social disturbances (85%). About half had general aggression problems (55%). Approximately 30% of youth had been a victim of abuse or had post-traumatic reactions, and about 20% had inflicted harm on themselves. Around 14% of youth had substance use and delinquency problems.

Table 1 shows the associations between each presenting problem and the diagnostic categories. Delinquency was the strongest predictor of CD; youth with problems of delinquency were about twice as likely as youth without delinquency to be diagnosed with CD. Youth with problems of substance use, general aggression, social disturbances, or who had been victimized also were more likely than youth without these problems to be diagnosed with CD. By contrast, these same problems decreased the odds that youth would be diagnosed with ADHD.

Table 1
Presenting Problems Associated with Diagnoses of ADHD, CD, and Comorbid ADHD/CD Among Youth in Mental Health Services

	ADHD Odds Ratio	*CD Odds Ratio*	*Comorbid ADHD/CD Odds Ratio*
Social disturbances[a]	1.0	1.3*	1.3
General aggression	1.0	1.3**	1.7**
Aggression to people and animals[b]	1.0	1.3	1.1
Delinquency[c]	0.6**	1.8**	1.1
Victimization[d]	0.7**	1.2*	0.9
Self harm[e]	0.7**	0.9	0.9
Internalizing disturbances[f]	0.9	1.0	0.9
Substance use[g]	0.6**	1.4**	0.7
Medical problems	0.9	1.1	0.9
Gender (0=male)	0.7**	0.9	0.7*

Note. Youth population includes all children and adolescents ages 0-17 years of age, and comprises 1,804 unweighted observations from the 1997 Client Patient Sample Survey. US territories of Puerto Rico, Guam, and the US Virgin Islands were excluded. Three observations with missing presenting problems were excluded.

[a] Problems coping with daily roles, family problems, skill deficit, withdrawal, runaway behavior.
[b] Fire setting, sexual aggression, disruptive activity.
[c] Delinquency, involvement with the criminal justice system.
[d] Victim of abuse/assault/neglect, post-traumatic stress reaction.
[e] Self harm, suicidal thoughts or behaviors, eating disturbance.
[f] Anxiety, depressed mood, grief, phobia, thought disturbance, sexual adjustment, sleep disturbance.
[g] Alcohol use, drug use.

* $p < .05$; ** $p < .01$

Table 2 shows the presenting problem associations by gender. For boys and girls alike, delinquency, general aggression, and substance use significantly increased the odds of CD. Social disturbances and being victimized increased the odds of CD only for girls. For boys, delinquency and substance use problems decreased the odds of ADHD. For girls, social disturbances and having been victimized decreased the odds of ADHD. General aggression was associated with comorbid ADHD/CD only for boys.

Discussion

ADHD and CD are highly prevalent disorders in the youth mental health service system in the U.S. Consistent with prior research, boys had higher rates of these disorders than girls. In this national service population the rate of comorbidity between ADHD and CD is relatively low, in contrast to previous research, raising questions about whether some youth are systematically excluded from mental health services.

There were more differences than similarities in the problem profiles characterizing ADHD and CD. In fact, the exact same presenting problems were inversely related to diagnoses of CD and ADHD. For example, delinquency, substance use and victimization were positively associated with CD, but negatively associated with ADHD. Moreover, none of the presenting problems examined significantly increased the odds of ADHD, suggesting that none of these problems constitute reasonable behavioral intervention targets. Attention to delinquent and aggressive behaviors and substance use would be justified targets for boys with CD. These same targets would be appropriate for girls with CD. In addition, a comprehensive service plan for girls would include attention to social role problems and responses to victimization. These results suggest that future research efforts should consider the assessment and implications of the behavioral correlates of ADHD and CD for boys and girls.

Table 2
Presenting Problems Associated with Diagnoses of ADHD, CD and Comorbid ADHD/CD among Boys and Girls in Mental Health Services

	ADHD		*Conduct Disorder*		*Comorbid ADHD/CD*	
	Boys Odd Ratio	*Girls Odd Ratio*	*Boys Odd Ratio*	*Girls Odd Ratio*	*Boys Odd Ratio*	*Girls Odd Ratio*
Social disturbances[a]	1.2	0.7*	1.2	1.6**	1.4	1.2
General aggression	0.9	1.0	1.3	1.4	1.9**	1.2
Aggression to people and animals[b]	0.9	1.1	1.2	1.6	0.8	2.4
Delinquency[c]	0.4**	1.0	1.8*	1.9*	1.1	0.8
Victimization[d]	0.8	0.6**	1.1	1.3*	0.9	1.1
Self harm[e]	0.8	0.8	0.9	1.0	1.2	0.7
Internalizing disturbances[f]	0.9	1.0	1.1	0.9	0.9	1.0
Substance use[g]	0.6*	0.8	1.5*	1.4	0.8	0.5
Medical problems	0.9	1.0	1.1	1.1	0.8	1.0

Note. Youth population includes all children and adolescents ages 0-17 years of age, and comprises 1,804 unweighted observations from the 1997 Client Patient Sample Survey. US territories of Puerto Rico, Guam, and the US Virgin Islands were excluded. Three observations with missing presenting problems were excluded.

[a] Problems coping with daily roles, family problems, skill deficit, withdrawal, runaway behavior.
[b] Fire setting, sexual aggression, disruptive activity.
[c] Delinquency, involvement with the criminal justice system.
[d] Victim of abuse/assault/neglect, post-traumatic stress reaction.
[e] Self harm, suicidal thoughts or behaviors, eating disturbance.
[f] Anxiety, depressed mood, grief, phobia, thought disturbance, sexual adjustment, sleep disturbance.
[g] Alcohol use, drug use.

*$p < .05$; **$p < .01$

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Reducing Out-of-Community Placement: Diversion of Youth with Mental Health and Substance Use Disorders from the Justice System

Bonita M. Veysey
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Introduction

The Mental Health/Juvenile Justice Project (MH/JJ) is an 11 county diversion program for delinquent youth who have an identified mental health and/or substance abuse need, and who are likely to benefit from community-based treatment. The MH/JJ Project is sponsored by the New York State Office of Children and Family Services and has been in operation since June 1997. The primary goals of the project are: (a) to reduce criminal/delinquent behavior, (b) to reduce out of community placements, including detention, and (c) to improve youth well being and family functioning. The current study focuses on identifying factors important to the reduction of out of community placement.

Mental Health/Juvenile Justice Project. Each site involved in the project is required to demonstrate cooperation between the County Probation Department, which is responsible for intake, investigation and supervision activities, and MH/JJ Project staff who may be members of local behavioral health organizations or probation department employees. At a minimum, the county MH/JJ Project staff provide: screening, assessment, individual, group and family counseling, and referral services. Follow-up, to assure that the youth and his or her family are receiving all necessary mental health, substance abuse, medical, educational, vocational and family support services, is considered key to the success of the project. The 11 sites represent a broad spectrum of implementation strategies while delivering a core set of services.

Sites vary geographically from urban to rural, differ on the point of contact from intake to supervision cases, and in the organization of services and lead agencies. Counties range in size from less than 100,000 people to about 2.5 million. The percentage of persons under age 18 lies between 24% and 30% in all counties, and the child poverty rate ranges from 12% to 40% in this sample. The counties also have different levels of racial diversity. For instance, one county is less than 50 %White and one is over 90% White. Overall, the youth included in this study are reflective of the counties from which they come. They also vary in their criminal histories and target crime depending on the point of intervention.

Method

The data for the present study are drawn from a non-probability sample of youth who exhibit mental health and substance abuse problems and have contact with the juvenile justice system in 11 counties in New York State (N = 2,312). Youth who were referred to MH/JJ services from June 1997 through 2000 are included.

Data were collected by project and probation staff using two similar data abstraction forms developed specifically for this project: one for youth at intake and one for youth at the investigation or supervision level. With the exception of extra space for additional adjudication information included in the investigation/supervision form, the data abstraction forms for project and probation staff are identical.

Data gathered on each youth includes information routinely collected by probation officers during intake interviews with the youth and his/her family (e.g., arrest charges and description of the target event, contact and identifying information, youth supports and needs, family supports and needs, history of abuse and investigations by Child Protective Services, school performance, recent youth stressors), along with accompanying medical, psychiatric, school, and historical juvenile records. MH/JJ staff conduct an assessment within 30 days of referral, which provides information on diagnoses, prior service use, need for services, referral dates, and the receipt of MH/JJ services. The data abstraction form is complete when follow-up information is collected at 120 days. This information includes new arrests

and violations, utilization of MH/JJ and other community-based services, and cost expenditures. Forms completed by each participating county are forwarded to the state project office where they are compiled and entered for analysis.

Results

Over four years, these data show a statistically significant reduction in the percentage of MH/JJ youth placed out of the community, $\chi^2 = 24.97$, $p < .001$. In the partial year of 1997, 43% of youth were ordered into an out-of-community placement by family court. This figure declined to 24% in 1998 and 16% in 1999. Twelve percent of youth were ordered into an out-of-community placement in 2000. In order to further explore these trends in out-of-community placement, while controlling for relevant factors, a logistic regression model was constructed. This model includes the year and county in which the case was processed. Age, race, living situation, current charge, mental health history, substance abuse history, prior detention, and prior record are also included in the logistic regression model. Taken as a whole and in part, these predictors are reflective of the MH/JJ program theory.

Results for logistic regression analysis are presented in Table 1. Overall, the model is a statistically significant predictor of out-of-community placement, $\chi^2 = 166.57_{(29)}$, $p < .001$. The Nagelkerke R^2 of .34 indicates that, taken together, the items in this model predict more than one-third of the variance in out-of-community placement. Of the predictors included in the model, five were found to be statistically significant. As was true at the bivariate level, the year of case processing was a statistically significant predictor of out-of-community placement (Wald = 12.15, $p < .01$). Using the year 2000 as a point of reference, the odds of referral to community placement were four and one half times greater in 1997 and almost twice as great in 1998. The odds ratio for placement in 1999 and 2000 were nearly even ($OR = 1.12$). Controlling for other relevant variables, project site was the strongest predictor in this model (Wald = 43.57, $p < .001$). This indicates that where a youth lives and is processed makes a difference as to whether he or she is placed out of the community. County 11 contains many of the higher risk youth in the project and was used as a reference point here. Only three counties have greater odds of out-of-community placement when compared to this county. Youth in County 4 have 3.24 times greater odds of out-of-community placement than those in County 11, and those in County 5 have 2.26 times greater odds of placement. Again, most other counties have lower odds of out of home placement when compared to County 11. This may be due to the level of need of the youth being served and the point of contact for each county.

Age, substance abuse history, and prior detention were also significantly related to out of community placement when other factors were controlled. The logistic regression results indicate that as a youth ages he or she will have reduced odds of out-of-community placement (Logit = -.38, $p < .001$). Those with substance abuse histories or prior detention histories are at an increased risk for out of community placement. Youth with a history of substance abuse are twice as likely to be placed as those without this history (Logit = .70, $p < .05$). Those youth who have been remanded to detention in the past have 2.31 times greater odds of being placed out of community than those who have not been in detention (Logit = .84, $p < .001$). Interestingly, a youth's target offense and prior record were not significant predictors of out-of-community placement.

Conclusions

Four important findings emerge from the multivariate analysis. First, the year processed remains a significant predictor of out-of-community placement, with the odds of family court referral decreasing over time. This is an indication that the MH/JJ project is meeting one of its primary goals: to reduce out-of-community placement for justice-involved youth. Next, the project site is the strongest predictor of out-of-community placement in the model. This illustrates the importance of considering the local context of the youth's treatment and processing. These counties may have different treatment

Table 1
Logistic Regression of Out of Community Placement
(*n* = 694)

Predictor	*Logit*	*Wald*	*OR*
Age	-.38***	18.00	.69
Gender	.37	1.34	1.45
Race		1.24	
Hispanic/Latino	-.21	.38	.81
Caucasian/White	-.26	.69	.77
Other Race	.21	.14	1.23
Living Situation		6.61	
Single-Parent Family	.19	.47	1.21
Other Kinship/Guardian	.43	1.48	1.55
Other Living Situation	1.79	5.90	6.01
Year Processed		12.15**	
1997	1.50	8.45	4.46
1998	.64	3.36	1.89
1999	.11	.10	1.12
Project Site		43.57***	
County 1	-6.39	.15	.00
County 2	-.67	.28	.51
County 3	-.45	.71	.64
County 4	1.18	17.29	3.24
County 5	.81	1.94	2.26
County 6	-5.92	.33	.00
County 7	-.40	.13	.67
County 8	.25	.14	1.28
County 9	-1.58	5.67	.21
County 10	-2.83	7.10	.06
Current Offense		6.40	
Other Potentially Violent Crime	.21	.28	1.24
Property Crime	.00	.00	1.0
Drug Related Offense	-.68	3.26	.51
Other	-.64	2.21	.53
MH History	.26	1.22	1.29
SA History	.70*	5.72	2.02
Prior Detention	.84**	7.89	2.31
Prior Record	.40	2.30	1.49
Model χ^2 (df)	$166.57_{(29)}$***		
Nagelkerke R^2	.336		

*p <.05, **p <.01, ***p <.001

models and points of intervention, which affect youth outcomes. Third, substance abuse history, but not mental health history, is a significant predictor of out-of-community placement. Lastly, prior history of detention is a statistically significant predictor of out-of-community placement, but current offense type and prior record were not significant predictors in this model as would be suggested by a strict risk perspective. Still, it is important to consider the role of previous placement in the current justice processing of these youths.

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Symposium

Mental Health Needs of Youth in the Juvenile Justice System

Chair
Ken Gallagher

Authors
Benner et al.
Nordness et al.
Moss et al.

Symposium Introduction

Ken Gallagher

Youth with mental health needs in the juvenile justice system are dually stigmatized. First, they are engaged in behavior that the community finds troublesome. Second, they have needs that are difficult to address. Mental health issues are sometimes perceived as contributing to, if not "causing," delinquent behavior. According to this view, some believe that society is best served by compassionate, effective treatment of the youth. On the other hand, others believe that mental health problems indicate an increased risk or danger to society and that precautions should be taken in treating these youth. Delinquents with mental health needs pose unique problems that are often a puzzle to the justice system.

Many of these youth are not adequately screened for the existence of potential mental health problems. Even among those who are properly screened, and for whom a potential need exists, many encounter barriers to accessing treatment services for a variety of reasons. Questions may arise regarding what precautions need to be taken, in facilities or in the community, until the desired treatment outcomes are achieved.

The three presentations summarized here report the results of studies conducted by the Center for At-Risk Children's Services at the University of Nebraska-Lincoln. The first presents the results of a survey administered to treatment providers and families of youth with mental heath needs in the juvenile justice system. The second describes the results of mental health screening among youth admitted to a juvenile detention facility. The third examines the relation between mental health status and subsequent behavior while in detention.

The Service Needs of Youth in the Juvenile Justice System

Gregory J. Benner, Michael H. Epstein, Mallie M. Moss, & Joseph B. Ryan

Introduction

Youth served in the juvenile justice system experience an array of problems related to academic functioning (Foley, 2001), mental health (Cocozza & Skowyra, 2000; Department of Health and Human Services, 1999; Otto, Greenstein, Johnson, & Friedman, 1992), and substance abuse (Department of Health and Human Services, 1999; Randall, Hengeller, Pickrel, & Brondino, 1999). Most youth in the juvenile justice system have a diagnosable mental health disorder and at least half of youth in the juvenile justice system have substance abuse treatment needs (Otto et al., 1992).

The National Mental Health Association (NMHA, 1999) found an inadequate, fragmented system of services for youths in juvenile justice settings. Researchers affiliated with the NMHA study found a lack of communication among agencies, resulting in restricted access to services and duplication of effort. Thus, two main priorities emerged to address the service needs of youth in the juvenile justice system. First, researchers have underscored the need to perform detailed assessments on youth entering the juvenile justice system to identify their service needs and to make appropriate placements. Second, researchers have highlighted the importance of collaboration and consistency across systems.

Although previous research has illuminated much about the barriers to services and the service needs for youth in the juvenile justice system, the voices of the parents and direct service providers have gone unheard. In other words, no research to date has examined the perspectives of those who directly use

(i.e., parents) and carry out (i.e., service providers) the services for youth in the juvenile justice system. This study assesses and compares the perspectives of parents and service providers on the barriers to, and service needs of, youth in the juvenile justice system.

Method

Participants

A total of 357 participants were surveyed; of these, 132 were parents, and 225 were service providers. The parents were legal guardians (e.g., mother, father, foster parent) of youth in the juvenile justice system with mental health needs in Lancaster County. The service providers were employees of mental health, child welfare, juvenile justice, or alcohol and substance abuse agencies in Lancaster County. Of the 357 participants, responses were received from 50 parents and 123 service providers; the overall response rate was 49%. Of the 132 parent surveys, 50 were returned, yielding a response rate of 38%. Of the 225 service provider surveys, 123 were returned for a response rate of 55%.

Instruments

Two instruments were used to assess parent and service provider perspectives on the service needs of children and youth in the juvenile justice system with mental health needs. A modified version of the Service Provider Survey (SPS; Quinn, Epstein, & Cumblad, 1995) was used to survey service providers' perceptions of barriers to and priorities for delivering comprehensively individualized, community-based care to children and youth with emotional and behavioral disorders (EBD) and their families. This survey was modified specifically for professionals who work with the juvenile justice population. The purpose of the SPS is to measure direct service providers' perceptions of the major system barriers and service component needs in the existing system of care. The questionnaire has three parts. Part One includes 24 items that elicit the service providers' perceptions of barriers to comprehensive, community-based care. Respondents rate each item on a Likert-scale, from 1 = *Major problem*, 2 = *Moderate problem*, 3 = *Minor problem*, to 4 = *Not a problem*. Part Two of the questionnaire provides respondents with an extensive list of categorical component services from which to identify those that most need to be added to the current system of care. Respondents rate each item on a scale, from 1 (*Major priority*) to 4 (*Not a priority*). Completion of the entire questionnaire requires approximately 15 minutes of the respondent's time.

The Parent Survey (PS; Quinn et al., 1995) was used to assess parent perceptions of barriers to and priorities for delivering comprehensively individualized, community-based care to children and youth with EBD and their families. This survey was modified specifically for parents of youth in the juvenile justice system. The Parent Survey is identical to the Service Provider Survey except that Part One of the survey contains only the first 19 items of the service provider survey (i.e., the last five items of the service provider survey are not applicable to parents).

Procedure

Potential service provider respondents were contacted by mail at the place of their employment or at home, while parents were contacted at home. Included in each correspondence was a copy of the questionnaire, a return envelope, and an introductory letter. The letter briefly described the purpose of the survey and the target population. The letter also assured providers that their individual responses would be held in strict confidence and encouraged them to respond.

Analysis

The Mann-Whitney U Test was used to determine how parents and service providers differ on both problems and priorities. The Mann-Whitney U is more powerful than the *t*-test in cases of unequal sample sizes, non-normal distributions, and unequal variances (Siegel & Castellan, 1988). An alpha level was set at .01 for the barriers and service needs portion of the survey.

Results

Parent Survey

Parent perspectives on *barriers* to services (i.e., service problems) are summarized in Table 1. Inspection of Table 1 reveals the following. First, none of the items were rated by parents as a major problem. Second, the most often endorsed service problems according to parents were ability to pay for services (M = 2.00), followed by long waiting lists /periods (M = 2.32), and lack of information about community services and resources (M = 2.46).

Table 1
Means and Standard Deviations for Parent and Service Provider Responses: Barriers

Item	*Parents M (SD)*	*Service Providers M (SD)*	*Mann-Whitney U Test*
Ability to pay for services	2.00 (1.02)	1.73 (.89)	2556.0
Long waiting lists and periods	2.32 (1.15)	1.71 (.86)	2147.5*
Lack of information about community services and resources	2.46 (1.18)	2.27 (.92)	2814.5
Lack of dual diagnosis services	2.49 (1.18)	2.08 (1.01)	2345.0
Agency will provide only certain types of services	2.55 (1.04)	2.41 (.90)	2792.5
Services do not meet family needs	2.56 (1.05)	2.50 (.89)	2923.0
Lack of evening and weekend hours	2.60 (1.18)	2.32 (.96)	2634.0
The number of forms to fill out	2.67 (1.01)	2.50 (.91)	2643.5
Lack of planning for when a child changes placement	2.69 (1.26)	1.97 (.83)	1947.0*
Cannot share records between agencies	2.73 (.97)	2.50 (.95)	2596.5
Services for the youth hare not available locally	2.73 (1.13)	2.70 (.92)	2848.5
Terms and jargon used by agencies	2.76 (1.13)	2.79 (.90)	2936.0
Lack of good staff	2.86 (1.05)	2.25 (.96)	2083.5*
Unable to get legal advice	2.88 (1.13)	2.44 (.99)	2262.0
Lack of transportation services	2.98 (1.09)	2.24 (.99)	1830.0*
Duplication of services	3.02 (.98)	2.77 (.89)	2419.0
Services are poorly located	3.14 (.97)	2.87 (.78)	2398.0
Agencies will not serve youth with a juvenile justice record	3.38 (.80)	3.02 (1.00)	2261.5
Staff do no know about other cultures or speak other languages	3.43 (.87)	2.25 (.90)	1087.0*

Note. * $p < .01$. Means are in ascending order from *major* to *no problem* based on parent responses. Items were rated by respondents as follows: 1=*Major problem*, 2=*Moderate problem*, 3=*Minor problem*, and 4=*Not a problem*. Sample sizes ranged from 47 to 50 for parents and 119 to 123 for service providers across items.

Parent perspectives on service *needs* are summarized in Table 2. The following ten items were rated by parents as a major priority; listed in ascending order of Mean scores (see Table 2 for Means), they are: (a) having a person responsible for implementing a plan of care, (b) substance abuse evaluation, (c) legal counseling and knowledge, (d) job training, (e) outreach, (f) intensive outpatient substance abuse services, (g) residential substance abuse services, (h) job placement, (i) job preparation, and (j) outpatient substance abuse services.

Service Provider Survey

Service provider ratings of service *problems* (see Table 1) revealed that four of the items were rated as major problems: (a) ability to pay for services (M = 1.71); (b) long waiting lists and periods (M = 1.73), (c) lack of planning for when a child moves from one placement to another placement (M = 1.97), and (d) lack of dual diagnosis services (M = 2.08).

Service provider perspectives on service *needs* are summarized in Table 2. Thirty-two of the items were rated as a major priority according to service providers. The most urgent service priorities according to

Table 2
Means and Standard Deviations for Parent and Service Provider Responses: Service Needs

Item	*Parents M (SD)*	*Service Providers M (SD)*	*Mann Whitney U Test*
Person responsible for implementing a plan of care	1.80 (1.00)	1.76 (.76)	2655.0
Substance abuse evaluation	1.81 (1.01)	1.89 (.88)	2619.5
Legal counseling and knowledge	1.85 (1.07)	1.87 (.83)	2554.0
Job training (skills needed for a job)	1.87 (1.05)	1.61 (.76)	2568.0
Mental health outreach	1.87 (1.12)	1.78 (.82)	2822.5
Intensive outpatient substance abuse services	1.89 (1.06)	1.70 (.88)	2653.5
Residential substance abuse services	1.94 (1.04)	1.69 (.87)	2553.0
Job placement (getting a job)	1.96 (1.13)	1.63 (.77)	2430.0
Job preparation (how to apply for a job)	1.98 (1.05)	1.83 (.80)	2705.0
Outpatient substance abuse services	1.98 (1.11)	1.94 (.85)	2761.0
Mentoring programs	2.00 (1.16)	1.71 (.83)	2599.5
Medical: Assessment, treatment or referral services	2.04 (1.00)	1.77 (.83)	2538.0
Residential treatment center	2.06 (.89)	1.58 (.78)	2181.5*
Crisis respite (a place for child to stay for a few days)	2.12 (1.06)	1.55 (.79)	1924.0
Basic needs: Help in getting food, clothing, etc.	2.20 (.97)	1.68 (.82)	2166.0
Groups led by parent to provide support, etc.	2.24 (1.07)	1.83 (.82)	2224.0
Treatment foster homes	2.26 (1.11)	1.34 (.63)	1546.5*
Psychological testing	2.31 (1.06)	2.12 (.86)	2559.0
24-hour crisis screening and assessment	2.31 (1.05)	1.70 (.87)	1903.0*
Individual child therapy	2.32 (1.25)	1.91 (.83)	2244.0
Formal parent skill training	2.33 (1.26)	1.50 (.66)	1603.5*
Alternative school	2.36 (1.18)	1.98 (.92)	2117.0
Psychiatric evaluation	2.37 (1.09)	2.07 (.83)	2419.5
Group home	2.37 (1.25)	1.62 (.71)	1827.0*
Transportation to and from services	2.38 (1.07)	1.89 (.89)	2155.5
Recreational programs	2.38 (1.07)	2.04 (.85)	2305.0
Violence in the home	2.39 (1.09)	1.34 (.70)	1554.0*
In-home crisis care response	2.39 (1.04)	1.75 (.92)	1938.0*
Telephone hotline	2.43 (1.20)	2.04 (.96)	2288.0
Family therapy (office or home based)	2.45 (1.18)	1.70 (.86)	1781.0*
Homebound tutoring	2.45 (1.21)	2.21 (.94)	2299.5
Medication and monitoring	2.46 (1.22)	2.06 (.83)	2250.5
Full inclusion program (regular class)	2.47 (1.15)	2.14 (.90)	2146.5
Independent living apartments	2.49 (1.16)	1.89 (.94)	2027.0*
Regular foster home	2.50 (1.33)	1.74 (.77)	1770.5*
Transition program	2.50 (1.11)	1.86 (.83)	1771.5*
Early identification (children below 5 years of age)	2.55 (1.13)	1.98 (.93)	1844.5*
Respite to attend meetings	2.56 (1.12)	1.97 (.85)	1928.0*
In-home respite for a period of a few hours or a few days	2.60 (1.17)	1.83 (.86)	1709.5*
Hospitalization	2.69 (1.22)	2.38 (.81)	2241.5
Resource program (less than 1/2 day)	2.74 (1.07)	2.22 (.85)	1818.5*
In-home service 1-4 hours per week	2.83 (1.10)	1.97 (.83)	1544.5*
Self-contained classroom	2.84 (1.23)	2.19 (.83)	1608.5*
In-home service 5-15 hours per week	2.89 (1.12)	2.10 (.91)	1597.0*

Note. *$p < .01$. Means are in ascending order from *major priority* to *not a priority* based on parent responses. Items were rated by respondents as follows: 1=*Major priority*, 2=*Moderate priority*, 3=*Minor priority*, and 4=*Not a priority*. Sample sizes ranged from 44 to 48 for parents and 118 to 123 for service providers across items.

providers were violence in the home (1.34), treatment foster homes (1.34), formal parent skill training (1.50), crisis respite (1.55), residential treatment center (1.58), and group homes (1.62), respectively.

Parents and Service Provider Perspectives Compared

Comparison of parent and service provider perspectives on barriers to services (see Table 1) revealed that the top two problems for both parents and service providers were the ability to pay for services and long waiting lists and periods. With one exception (i.e., terms and jargon used by agencies), service providers rated items as representing greater problems than did parents. Statistically significant differences ($p < .01$) were found between parent and service provider responses to five items: (a) long waiting lists and periods, (b) lack of planning when a child changes placement, (c) lack of good staff, (d) lack of transportation services, and (e) staff do not know other cultures or speak other languages.

Comparison of parent and service provider perspectives on service needs (see Table 2) shows that 10 items were rated as major priorities according to both parents and service providers. With two exceptions (i.e., evaluation and legal counseling and knowledge), service providers rated items as being greater problems than did parents. Table 2 also reveals that statistically significant differences ($p < .01$) between parents and service providers were found on 18 service priority items; in each of these cases, service providers rated items as more of a priority than did parents.

Discussion

This study assessed parent and service provider perspectives on the service barriers and service needs of youth in the juvenile justice system in a medium sized mid-western county. Parents ($n = 50$) and service providers ($n = 123$) identified important barriers to services and service needs. The following findings warrant discussion. With the exception of one barrier (i.e., terms and jargon used by agencies), and two service needs (i.e., substance abuse evaluation and legal counseling and knowledge), service providers rated items as either being larger barriers or representing greater service needs, than did parents. The top two barriers to services for both parents and service providers were ability to pay for services and long waiting lists and periods. Researchers of previous studies (NMHA, 1999; Redding, 2001) have found that the ability to pay for services was a major barrier to effective services for youth in the juvenile justice system.

Finally, case management was rated a major priority according to parents and service providers. This finding confirms previous research (Cocozza & Skowyra, 2000; NMHA, 1999) which highlights the need for effective, individualized case management in assisting parents and service providers with organizing an ordinarily fragmented, inadequate system of services.

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Screening Mental Health Needs of Youth in Juvenile Detention

Philip D. Nordness & Michael Epstein

Introduction

Historically the mental health needs of youth have been inadequately addressed in policy, research, and practice (Burns, 1999; Knitzer, 1982). However, within the last decade there has been increasing attention to the mental health disorders of youth. In the Surgeon General's Report on children and mental health, it was estimated that 21% of youth ages 9-17 within the general population have a diagnosable mental health or addictive disorder (U.S. Department of Health and Human Services [USDHHS], 1999). In addition, approximately 11%, 4 million youth, meet the diagnostic criteria for a significant functional impairment impacting relationships at home, with peers, and in the community (USDHHS, 1999). While these numbers are significant, recent research suggests that these percentages may be getting even higher (Cocozza & Skowyra, 2000).

With the increasing recognition of mental health and behavioral disorders of youth within the general population, the overlap between mental health and juvenile justice services has become more evident (Underwood, Mullan, & Walter, 1997). While the actual number of youth with mental health disorders remains unknown, it has been estimated that 20% of youth who come into contact with the juvenile justice system may have a serious mental health disorder (Cocozza, 1997). In addition, a higher percentage may be experiencing a less severe mental health problem (Cocozza, 1997). Several researchers have documented that 70%-90% of youth in the juvenile justice system meet official criteria for at least one psychiatric diagnosis, with conduct disorder and substance abuse disorders being the most prevalent (Atkins et al., 1999; Cocozza, 1992; Davis, Bean, Schumacher, & Stringer, 1991; Otto, Greenstein, Johnson, & Friedman, 1992). While these estimates suggest a significant number of youth are experiencing mental health disorders, the lack of attention paid to youth in the juvenile justice system by researchers, service providers, and policy makers, makes it difficult to understand the extent of this problem and what services are needed for these youth (Cocozza, 1992).

The purpose of this study was to examine the number of youth who present symptoms of a mental health disorder at intake into a juvenile detention center in the Midwest, using a self-report screening instrument. In addition, we examined the number of youth who were experiencing co-occurring symptoms of a mental health disorder, and the differences based on race and gender.

Method

Participants

The sample consisted of 204 youth in a juvenile detention facility in a medium sized city in the Midwest. Twenty-five percent of the youth were female and all youth ranged in age from 12 to 17 years (M = 15.86, SD = 1.47). Seventy percent of the sample was identified as Caucasian, 16% African

American, 7% Hispanic, 5% Native American, and 2% Asian.

Measure

The Massachusetts Youth Screening Instrument-Second Version (MAYSI-2; Grisso & Barnum, 2000) was designed as a routine screening instrument for youth 12 to 17 years old at intake into the juvenile justice system. The MAYSI-2 is a self-report screening instrument that can be completed in 10 minutes and requires no special clinical experience to administer, score, or interpret. The MAYSI-2 contains 52 questions to which youths answer *yes* or *no* as to whether the item has been true for them within the last few months. The MAYSI-2 contains seven scales for boys and six for girls. The Alcohol/Drug Use scale contains eight items that report on the frequent use of alcohol or drugs and risk of substance abuse. The Angry-Irritable scale contains nine items that report experiences of feeling frustration, lasting anger, and moodiness. The Depressed-Anxious scale contains nine items that report experiences of feeling depressed and anxious. The Somatic Complaints scale contains six items that report on bodily discomforts associated with distress. The Suicide Ideation scale contains five items that report on a youth's thoughts and intentions to self-harm. The Thought Disturbance scale contains five items that report experiences of unusual beliefs/perceptions, and possible thought disorders. The Thought Disturbance scale is only used for boys. The Traumatic Experiences scale contains five items that identify whether a youth has had significant exposure to events the youth considers traumatic; there are separate items for boys and girls related to this scale. The scales are all scored independent of each other and there is no overall total score.

The MAYSI-2 is scored by adding up the number of *yes* responses identified by the youth for each scale. Each scale has a designated *Caution* and *Warning* cut-off score, except the Traumatic Experiences scale. The Traumatic Experiences scale is intended to provide staff with additional information, but there is currently no way to determine the amount of exposure to traumatic events which would warrant special attention (Grisso & Barnum, 2000). A youth who scores above the Caution cut-off on a given scale is seen as having a mental health concern of possible clinical significance. Youth who score above the Warning cut-off scores should be considered most likely in need of attention because they are reporting problems at a level that exceeds the average for youth in juvenile justice settings (Grisso & Barnum, 2000). In previous studies the MAYSI-2 has demonstrated adequate validity and reliability (Grisso & Barnum, 2000; Grisso, Barnum, Fletcher, Caufman, & Peuschold, 2001).

Procedure

The MAYSI-2 was administered to 204 youth within 48 hours of intake into a juvenile detention facility in the Midwest. The 52 items were read to each youth by the facility therapist. The youth responded to each question by circling a *yes* or *no* on the answer sheet as to whether the item has been true for them within the last few months. The MAYSI-2 questionnaires were then collected and scored by an assistant from the University.

Results

At intake, 68% of the youth scored above the Caution/Warning cut-off, on at least one subscale and 67% of those youth had comorbid disorders, scoring above the Caution/Warning cut-offs on two or more of the subscales (Tables 1 and 2). An independent samples *t*-test demonstrated that the mean scores of females were higher than males on all of the scales and there was a statistically significant difference between genders on the Angry-Irritable, Depressed-Anxious, Somatic Complaints, and Suicide Ideation scales ($p < .05$; Table 3). Furthermore, Caucasian youth had significantly higher mean scores than African-American youth on the Alcohol/Drug Use scale ($p < .05$; Table 4). Additionally, we conducted a Chi square analysis to determine if there was a statistically significant difference between males and females related to comorbidity on the MAYSI-2 scales. Results indicated that females were significantly more likely than males to score at the Caution or Warning cut off on two or more scales, $\chi^2(1) = 5.162$, $p = .023$.

Table 1
Percent of Youths Who Scored Above the Caution or Warning Cut-Off

Scale	*Caution*	*Warning*
Alcohol/Drug Use	26.0	5.4
Angry-Irritable	24.0	8.8
Depressed-Anxious	22.5	8.8
Somatic Complaints	33.3	5.4
Suicide Ideation	4.4	14.2
Thought Disturbance scored for boys only	23.0	7.2

Table 2
Youths Who Scored Above the Cut-Off on Two or More Scales

Comorbidity	*n*	*Frequency*	*Percent*
Caution	129	79	61.2
Warning	52	26	50.0
Caution or Warning	138	92	66.6

Table 3
Means and Standard Deviations for MAYSI-2 Scales by Gender

Scale	*Male (n = 152) M (SD)*	*Female (n = 52) M (SD)*	*t*
Alcohol/Drug Use	2.2 (2.4)	2.5 (2.4)	-.93
Angry-Irritable	3.0 (2.7)	4.1 (2.5)	-2.62*
Depressed-Anxious	1.6 (1.9)	3.0 (2.3)	-4.35*
Somatic Complaints	2.1 (1.7)	3.0 (1.9)	-3.44*
Suicide Ideation	0.6 (1.4)	1.3 (1.8)	-3.25*
Thought Disturbance (Boys only)	0.4 (.9)	na	na

* $p < .05$

Table 4
Means and Standard Deviations for MAYSI-2 Scales by Race

Scale	*African Am. (n = 50) M (SD)*	*Caucasian (n = 125) M (SD)*	*t*
Alcohol/Drug Use	1.3 (2.0)	2.5 (2.4)	-2.56*
Angry-Irritable	3.5 (2.6)	3.4 (2.7)	.29
Depressed-Anxious	2.0 (1.9)	2.0 (2.2)	-.06
Somatic Complaints	2.5 (1.8)	2.3 (1.9)	.42
Suicide Ideation	0.7 (1.5)	.8 (1.6)	-.57
Thought Disturbance (Boys only)	0.4 (0.8)	5 (1.0)	-.44

* $p < .05$.

Discussion

Given that mental health records of youth are rarely available to juvenile detention centers at intake, the need for juvenile justice systems to provide appropriate mental health screening and assessment becomes paramount to providing appropriate treatment for juvenile offenders (Grisso et al., 2001). In addition, providing appropriate screening and assessment can form the basis for effective treatment plans that may help reduce recidivism by addressing the issues that put the youth at risk for delinquency in the first place (Bilchik, 1998). The MAYSI-2 is an appropriate measure for juvenile justice facilities to use as a front door mental health screening instrument. By using the MAYSI-2, juvenile detention centers can quickly determine whether juveniles represent a risk to themselves or the community, and can identify which youth may require further mental health assessment and evaluation (Grisso et al., 2001).

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The Relationship Between Youths' Behaviors While Detained and Mental Health Status

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Introduction

There are a significant number of youth in the juvenile justice system that have mental or emotional disorders (Brandenburg, Friedman, & Silver, 1990; Costello, 1989; Grisso, Barnum, Fletcher, Cauffman, & Peuschold, 2001). Research has further suggested that mental health disorders may play a significant role in a youth's participation in illegal behaviors (Grisso, et al., 2001). While not always incorporated within the juvenile justice system, assessment and treatment of mental health disorders are a part of what was intended with the origination of the juvenile court (Herz, 2001; Rothman, 1980). This study investigated the predictive validity of the MAYSI-2, a self-report measure, on youth's behavior while detained in a youth detention facility.

Method

Participants

One hundred and eighty-six youth participated in the study. Seventy-five percent of the participants were male. Caucasians comprised 70.4% of the sample, 16.7% were African American, 5.9% Hispanic, 4.8% Native American, 1.6% Asian, and 0.54% other. The MAYSI-2 was administered within 48 hours of intake by the facility therapist.

Data collection

The Massachusetts Youth Screening Instrument – Second Version (MAYSI-2; Grisso & Barnum, 2000). The MAYSI-2 is a self-report measure that was developed to identify youth with potential mental, emotional, or behavioral problems at entry points in the juvenile justice system. In order to help staff identify those youth who may be in need of mental health services, youth are typically administered the MAYSI-2 by a facility therapist within 48 hours of admission to a youth detention facility. Two independent raters reviewed the files of youth who had completed the MAYSI-2 at intake into the detention facility and who had been discharged from the institution. All file reviews were conducted at the detention facility. Inter-rater reliability was performed on 26% of cases and averaged 91%.

Youth detention facility infraction data. Data regarding a youth's behavior while detained included the number and type of major and minor infractions. Major infractions were those incidents that required official notification to probation officers or required law enforcement assistance, and which may result in a disciplinary hearing with formal charges being made against the youth. Examples include attempted escape, vandalism, and assault. Minor infractions were those that involved a facility rule violation. They result in a youth being written up and given a minor punishment such as room time and/or a loss of privileges. Examples of minor offenses include refusal to follow directions, talking through the facility vents, and note passing. For the purpose of these analyses, youth were categorized as having committed no offense, any offense (major or minor), or a major offense.

Results

Approximately two-thirds of the youth (n = 123) scored above the Caution cut-off, a level that may indicate possible clinical significance (Grisso & Barnum, 2000), on at least one MAYSI-2 scale and nearly half of the youth (n = 83, 45%) scored above the Caution cut-off on two or more scales. Nearly one quarter of the youth (n = 45, 24%) scored in the Warning range, approximately the highest 10% of scores, on at least one MAYSI-2 scale with just over a tenth of the youth (n = 21, 11%) scoring in the Warning range on two or more MAYSI-2 scales.

More than 45% (n = 84) of the youth were involved in either a major or minor incident while detained in the youth detention facility. Nearly 16% of the youth (n = 29) had a major infraction while they were detained. The mean number of minor infractions was 1.72 (SD = 3.66; range 0 to 25) and the mean number of major infractions was 0.27 (SD = 0.27; range 0 to 3). There were no significant differences in the number of major and minor infractions by gender, age, and race.

Table 1 reports the correlation between scores above the Caution cut-off on MAYSI-2 scales and involvement in infractions. Youth who scored above the Caution cut-off on any of the MAYSI-2 scales were more likely to be involved in some disciplinary incident while detained than youth who did not score as high. Youth who scored above the Caution cut-off on two or more scales were also more likely to be involved in an incident while they were detained. Significant relationships with involvement in any disciplinary incident occur for youth who score above the Caution cut-off on the Alcohol/Drug, Angry-Irritable, Depressed/Anxious scales of the MAYSI-2. Youth who scored above the Caution cut-off on the Angry-Irritable and the Suicide Ideation scales of the MAYSI-2 were significantly more likely to be involved in a major incident while detained in the youth detention facility.

Table 1
Correlations between Infractions and MAYSI-2 "Caution" Scores

	Infraction Type	
MAYSI-2 Scales At or Above Caution	*Any*	*Major*
Alcohol/Drug	.147*	.088
Angry/Irritable	.217**	.185*
Depressed/Anxious	.147*	.100
Somatic Complaints	.096	.012
Suicide Ideation	.044	.157*
Thought Disorder (n = 139)	-.039	.051
Any Scale	.147*	.026
Comorbidity	.185*	.121

* $p < .05$, ** $p < .01$

Table 2 reports the correlation between scores in the Warning range on MAYSI-2 scales and involvement in infractions. Youth who scored in the Warning range on any of the MAYSI-2 scales were not more likely to be involved in some disciplinary incident, regardless of type, than youth who did not score in the Warning range. However, youth who scored in the Warning range on the Angry-Irritable and Suicide Ideation scales, or scored in the Warning range on two or more MAYSI-2 scales, were more likely to be involved in a major incident while detained.

Table 2
Correlations Between Infractions and MAYSI-2 "Warning" Scores

	Infraction Type	
MAYSI-2 Scales At or Above Warning	*Any*	*Major*
Alcohol/Drug	.021	.055
Angry/Irritable	.107	.238**
Depressed/Anxious	.070	.128
Somatic Complaints	-.003	-.028
Suicide Ideation	.037	.144*
Thought Disorder (n = 139)	-.049	-.020
Any Scale	.017	.069
Comorbidity	.052	.174*

* $p < .05$, ** $p < .01$

Discussion

Scores in the Caution or Warning ranges on the MAYSI-2 scales appear to be related to a youth being involved in a behavioral incident while in a detention facility. However, it should be noted that the correlation coefficients are not very high, with the highest being around 0.24. Additional analyses controlling for variables such as gender or race may identify stronger relationships than the zero-order correlations reported here. It is also possible that a richer data set, with additional variables (e.g., prior record) and a larger cohort, may uncover stronger predictive validity of the MAYSI-2 scales.

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Mental Health Services and Juvenile Detention Centers: Perspectives on Differing Perceptions

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Introduction

Mental health (MH) and juvenile justice (JJ) sector interactions have become increasingly important as juvenile detention centers (JDCs) and correction facilities (CFs) become repositories for youth with severe, persistent mental illness (SPMI). The Mental Health Association in Indiana's Childhood Committee (CCMHAI) initiated a process to better understand and improve the relationships between community mental health centers (CMHCs) and the juvenile justice system (JJS). The CCMHAI includes advocates, consumers, professionals, academicians, and public sector members. Indiana parent advocacy groups had voiced greater concerns about forensic related issues than any other area of mental health services. They considered Indiana CMHC services for children as poorly funded and inadequate to meet the needs of youngsters with SPMI and their families in the community, particularly when they were involved with the JJ system. After interviewing key informants (i.e., parents, probation officers, CMHC providers, Juvenile Court Judge (JCJ); CF psychologist, Indiana Department of Corrections Director for Youth Services, etc.) for their particular perspectives, it was decided that systematic surveys of the agencies involved could provide the needed data base for future efforts in advocacy and policy development. The CCMHAI developed surveys for the CMHCs, CFs, JDCs and JCJs to determine how CMHC services were perceived across the mental health and juvenile justice systems. Results were intended to be shared in an open forum for discussion and policy planning. This summary describes the survey results with regard to cross-system relationships and the challenges inherent in cross-system surveys.

Methods

Surveys were developed through CCMHAI brainstorming meetings and distribution for feedback after unsuccessful attempts to find instruments to measure the factors of concern. The survey questions for each sector were developed with regard to what the group decided was needed to inform policy decisions and improve the system, e.g., the survey for CMHCs comprised of 9 questions was more detailed than that for CFs (7 questions) but far less extensive than that for JDCs (24 questions). Each of the 30 CMHCs was surveyed under the auspices of the CCMHAI and Indiana Council of Community Mental Health Centers, their trade organization, by means of a cover letter sent by the Chair and Associate Director of Membership Services, respectively of the two sponsoring organizations to the Executive Director of each CMHC. It requested that they complete a 9-item form inquiring about the extent to which they are contacted, services offered and services utilized by youth served at CFs, JDCs or involved with Juvenile Court.

A phone survey was developed for the CFs to better assure completion, and because of inherent difficulties in getting timely permission for passes onto the premises and in travel concerns. Directed to the Superintendents of the 8 CFs, it asked about referrals to CMHCs, CMHC services available for youth released from the CFs, proportion of CMHCs offering services and responding positively to referrals, other facilities to which they refer, and overall satisfaction with the CMHCS. The interview was conducted with the Superintendents, or when they were not available, with their designees by an intern at the Indiana Juvenile Justice Task Force (IJJTF).

The JDC survey was larger than the others because of JDC's generally close proximity to CMHC sites and more frequently expected collaboration. It included 22 questions and was either conducted in person-to-person interviews or by phone when travel to the JDC was prohibitive due to time or distance considerations. An upper echelon administrator, either the JDC Director or "second-in-command" were questioned by IJJTF members (Executive Director, juvenile justice specialist or an intern). The survey

requested the identity of the JDC's assigned CMHC or Managed Care Provider (MCP) and asked more detailed questions about referrals, services needed and requested, services offered by the CMHC in the JDC or elsewhere for youngsters anticipating service needs upon release, a series of questions about accessibility, satisfaction, cost and barriers. An additional question asked for comments and additional information.

The data were tabulated in aggregate form by the authors and presented to the CCMHAI for its consideration. CMHC survey results were immediately provided to their Executive Directors for feedback.

Results

Responses were received from all 30 CMHCs (a few CMHCs have satellite clinics that responded to the survey, sometime increasing the response rate to 32), 7 of 8 CFs and 19 of the 22 JDCs.

CMHC Responses

Only 5 of 31 CMHCs reported being contacted by State CFs before youth were released from those facilities. During the last quarter, this occurred an averaged of 1.4 times. Specific services targeted to this population were offered by 20 of the 32 centers. They included evaluations in 18, family work in 17, counseling in the facility, 8, and other 13 (8 case management, home based and in school mentor 3 each, day treatment 2, and 1 reported service coordination, group therapy, medicine clinic, and substance/ alcohol groups).

Twenty of 32 reported being contacted by the JDC about youth residing there, 1 of whom reported daily, 7 weekly, 5 monthly and the rest less frequent contacts. The last quarter referral range was 2 to 30 with the average 7. Services for JDC youth were reported by 29 of 32 centers: evaluations by 24; family work by 20; counseling in the JDC by 14; and "other" by 16.

Twenty-six of 32 reported being contacted by their Juvenile Court or probation staff about youngsters coming before the Court who may or may not be sent to the Detention Center. This usually occurred on and at least monthly basis (21), with 1 reporting daily contact, and 7 weekly. The Court/probation referral during the last quarter, average 9.4, was 0 to 35; 10 was the most frequently reported, and 8 the most typical number. Specific services targeted to this population were reported by 29/32 with evaluations by 27, family work by 26, counseling in the facility by 20, and other by 20 with case management (7) and home based treatment (5) the most common.

Corrections Facilities' Responses

The youth CFs appear to have a positive view of their working relationships with the CMHCs and have worked out means to get the help they need. The range of referrals to MH during the past 3 months from the 7 responding CFs was 0 to 100; the average was 23 and the median 9. One program noted that MH referrals are rare, with mental health referrals conducted internal to the facility. Most reported needing far more services than they requested. Response to the reason for the discrepancies was varied: many were unaware of CMHC services offered. The replies about positive response from, and satisfaction with CMHCs, as well as use of alternate providers varied.

Detention Center Responses

The JDC responses were slow in being collected. Respondents informally reported ambivalence about seeking CMHC services and suggested that most referrals are made by the probation officers. The largest JDC did not reply. Representative categories of responses follow: Six JDCs reported referrals to their CMHC or MCP, 9 reported not doing so, and 4 did not answer this question. Mental health assessments or evaluations, substance abuse assessments or evaluations, and individual counseling were indicated as needed by all 19 respondents. Eighteen indicated that family counseling and emergency intervention were needed, 17 indicated the need for medication management, and 12 for case management. requests for mental health assessments/evaluations were made by 10, substance abuse

assessments/evaluations by 5, and individual counseling by 8 of the 19 responding JDCs. Emergency intervention was requested by 14 JDCs. However, discrepancies between "needed" and "requested" are noted for the remainder of services.

Similar results are reported for needed services by youth and families anticipating release from the JDCs. However, actual request rates were lower. Only 12 JDCs responded to the question about number of services offered by their CMHCs. Eight reported 5 or more services. All 11 respondents to this question indicated good responsiveness to requests by the CMHCs but 8 failed to answer this question. No one indicated a poor response. Mental health assessments and/or evaluations, substance abuse assessment/evaluations, and individual counseling were indicated as needed by all 19 respondents. Eighteen indicated that family counseling and emergency intervention were needed, 17 indicated the need for medication management, and 12 for case management.

Conclusions and Implications

The discrepancy in perceptions concerning relationships and interactions between the CMHCs and the JJ sector agencies is the most critical finding in this study. The surveys from three different public service areas providing services to psychiatrically ill youngsters in the juvenile justice area offer data that can potentially influence policy considerations in order to: improve services; create an imperative to develop a structure and mechanisms to disseminate factual information through the multiple agency levels of MH and JJ; and achieve a more functional system of care for some of the neediest youngsters in the human services system. In order to develop a framework for improving service provision for youth involved with the JJ system, we must find explanations for the discrepant perceptions of service provision or its availability noted in this study and for the wide gap between perceived need and actual referral to CMHCs for services by CFs and JDCs. An ethnographic study, focal groups, in-person interviews, request for elaboration of individual responses, and direct observation represent different approaches to address the issues.

Given the Court's pivotal status to most decision making processes, the failure to elicit JCJ responses is a major limitation in developing a comprehensive picture of the system interactions. The mix of data eliciting mechanisms that detract from a standardized approach and our failure to elicit data from the largest JDC are other limitations.

This study highlights cross-system survey difficulties. We utilized an idiosyncratic approach to meet our particular human services system needs with the expectation that different perceptions of service availability, comprehensiveness and need existed. Surveying JJ agencies regarding mental health services is limited by the difficult in identifying and querying the person or persons to give a reliable and valid view. At the same time the survey results supported the need for a forum to air the issues in order to open communications and foster linkages within the network of human services. Such forums have been held and portions of the data shared. These data have also been disseminated in meetings with key Indiana state administrators and through workshops and conferences.

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Treating Adolescents with a Dual Diagnosis: The Integrated Community/Home-Based Treatment (ICT) Model

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Introduction

Dual diagnosis is a broad term indicating a simultaneous presence of two independent, yet interactive, medical disorders that may consist of substance abuse and mental health disorders (Ries, 1995). Until recently, both mental health professionals and substance abuse professionals treated patients with dual diagnosis in separate, uncoordinated programs with little or no cross-monitoring. To be sure, this parallel type of treatment was related to numerous problems including clinical and ideological disagreements, diagnosis boundaries, administrative conflicts, interagency miscommunications, and funding problems (Drake, Mueser, Clark & Wallach, 1996). While extensive work has been accomplished on the development of effective integrated treatment for adults with dual diagnosis (Drake & Mueser, 1996), few programs have addressed adolescents with a dual diagnosis of substance abuse and a mental health disorder. This paper reports on both the development of an Integrated Community/home-based Treatment (ICT) model for treating adolescents with a dual diagnosis of substance abuse and a mental health disorder, and on the results of a pilot study on the implementation of the ICT model.

Development of the ICT Model

Using a multifaceted approach, the Center for Family Studies at The University of Akron initiated the development of an integrated community/home-based treatment (ICT) model for adolescents with co-occurring disorders which included the following phases:

1. Review of the literature;
2. Identification and analysis of current effective treatment programs designed for dual diagnosis;
3. Convene and conduct a series of focus groups, including adolescents, their families, and their service providers from mental health, substance abuse, education, and juvenile courts;
4. Organize monthly collaborative team meetings comprised of consumers, parent advocates, researchers, mental health professionals, substance abuse professionals, and juvenile justice professionals for the purpose of developing the ICT model;
5. Development of a program fidelity scale for the purpose of monitoring program adherence, and to assist with the potential transportability and dissemination of the model;
6. Identification of an agency with both the desire and the resources to be able to implement this treatment model; and
7. Design and conduct initial evaluation of the ICT treatment model.

Overview of the ICT Model

The model was implemented by a local children's mental health agency with a full-time dually credentialed supervisor, two master's level therapists, and access to the agency's child psychiatrist. The team received a five-day training on the ICT model, as well as on-going training and consultation during the pilot implementation period.

The ICT model utilizes an integrated treatment approach embedded in an intensive home-based model of service delivery and system of care treatment philosophy. Services are delivered where the youth lives and functions (i.e., in their home, school, and community). ICT is an intensive service,

with service contacts averaging two to three multi-hour sessions per week. Small caseloads (averaging three to six families) allow providers to be available and responsive to each family at all times. In addition, service providers schedule appointments at times convenient to the family, including nights and weekends. The foundation for all service delivery was defined as *establishing a respectful and valuing partnership with the youth and family with a shared responsibility for outcomes*. The provider is responsible for treatment persistence and fidelity to the treatment model, the youth is responsible for his/her recovery and adherence to medications, and the family is responsible for setting the environmental stage for the youth's success.

The integrated treatment model was adapted from the Dartmouth model for adults with co-occurring disorders and includes stage-wise treatment (e.g., engagement, persuasion, active treatment and relapse prevention), and motivational interviewing as the change agents. The integrated treatment addresses both the mental health and substance abuse needs of the youth, and is provided by a single treatment provider, utilizing one assessment and one treatment plan. Based on the belief that the youth's behaviors have multiple influences, assessment and treatment in the ICT model focus upon the interactive determination of behaviors of dually diagnosed youth. Further, this model utilizes a contextual, ecosystemic perspective that views the youth in context of his or her family, neighborhood, community, and culture. To accomplish this, a comprehensive life domain assessment of the youth and family's needs is completed in the following areas: school, vocational, family, social, peers, legal, spiritual, cultural, emotional and behavioral, safety and basic needs. The ICT model uses a broad array of services to treat the youth including cognitive-behavioral therapy, family therapy, skill building, system advocacy, resource linkage, and crisis management and stabilization. Interventions utilize a balanced approach, addressing the youth and family's presenting needs, while building on and expanding their strengths and resources. A family need hierarchy is utilized to assist in prioritizing the youth's and family's needs. Strategies and interventions are matched to the most basic need, progressing to more complex needs once the primary needs are met. This model supports the use of medication for mental health disorders when deemed necessary by the psychiatrist. The therapist and parents monitor the youth's compliance and support the youth's adherence to the medication schedule.

A continuum of drug screening prior to and during treatment is utilized for each youth. Relapse is expected and planned for and is seen as an opportunity for learning and a normal part of recovery. Harm reduction is seen as a short-term goal with abstinence being the long-term goal. The youth's and family's strengths and culture are identified and incorporated into an ongoing support and recovery plan for the youth and family. While the Intensive phase of treatment ranges between 12-24 weeks, it is expected that the recovery process is long term. Thus, aftercare planning and relapse prevention are considered important components of the treatment process. Important elements of relapse prevention include the development of pro-social peer relations, development of emotional regulation and resistance skills, linkage to mentors in recovery, development of work skills, fostering ongoing family support, and access to integrated follow-up treatment if needed.

Evaluation Method

Sample

The diagnostic determination of dual disorders was derived utilizing a team consensus format. For this project certain diagnostic categories were chosen as criteria for inclusion. The mental health criteria included: Mood disorders, Psychotic disorders, and Anxiety-related disorders. The substance abuse criteria included DSM IV criteria for Abuse and Dependency (active/remission), either physical or psychological withdrawal, and/or an increase in tolerance levels.

During the pilot study (April 1, 2001 and September 30, of 2002), 56 dually diagnosed youth were served. Of the youth served 15 were female (27%) and 41 were male (73%), with an age range of 13 to 18 years of age. Of the youth served, 21 were on probation and 35 were on parole. The average length of stay for the program was six months. A comparison group of court-involved youth was selected (n = 29), who had been identified as having substance abuse problems and who received usual community services.

Measures

Assessment instruments were selected to measure the youth's overall functioning, problem behaviors, hopefulness, satisfaction, and substance abuse. Multiple perspectives (i.e., youth, parent, and provider) were utilized to obtain this information. The instruments included the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1989, 1994, 2000), the Substance Abuse Subtle Screening Inventory—Adolescent Version (SASSI; Miller, 1990), and the Ohio Youth Problems, Functioning, and Satisfaction Scales-Short Form (Ohio Scales; Ogles, Melendez, Davis, & Lunnen, 1999). Measurements were taken at intake, at six-month intervals, and time of closing. In addition, the following functional outcomes were obtained: school and vocational status, court involvement, drug use, family support, and medication compliance.

Results

An intuitively important difference in recidivism was found between the study group and comparison group. This usual services comparison group (n = 29) had a Department of Youth Service commitment rate of 72% during a two-year time frame from 2000 to 2001. In comparison, the ICT youth (n = 56) had a commitment and/or recidivism rate of 25%. Because the time frames for the two cohort groups were different (two years in the comparison group and one and a half in the treatment group) and the groups were not matched for co-existing mental health diagnoses, one must cautiously interpret this comparison. However, the size of the difference in commitment and/or recidivism rates [χ^2 (1, 29): 17.74 with a level of significance of .001], was encouraging and worthy of further study. To the extent that the ICT youth are comparable to the usual services comparison group, the difference in recidivism is more likely due to the treatment. But because the groups were not matched and random assignment was not utilized, no statements of causality can be made.

In addition, gain scores were statistically analyzed for the CAFAS, Ohio Scales, and the SASSI. We analyzed only those youth for whom we had completed data and there was more data available for Time 1 than at Time 2 (six months). This resulted in a select subset, therefore, it is unclear whether significant gain scores were due to treatment effects or due to a selection bias of those youth who stayed in care. Of the 20 total comparisons, 10 were significant at the .05 level; however, the p value was not corrected for experiment-wise error. Promisingly, all of the gain scores were in the predicted direction (see Table 1 for a list of the significant initial findings).

Table 1
List of Significant Findings (Gain Scores from Time 1 to Time 2)

Instrument	*Scale*	*n size*	*F*	*p**
Ohio Scales Youth	Problem Severity Rating	7	6.229	.0085
	Functioning	7	5.421	.0125
Ohio Scales Parent	Problem Severity Rating	7	6.004	.0095
	Functioning	7	11.479	.001
	Satisfaction	6	6.711	.007
	Hopefulness	6	7.428	.005
CAFAS	8 Scale Total	9	4.553	.008
SASSI 1	Obvious Attribute	9	2.539	.045
	Correctional	9	2.835	.0345

*One-tailed

Conclusion

This pilot study represents the initial stages of model development and evaluation. While these results are preliminary and a true experimental design was not utilized, the outcomes are promising. The next stage in the development of this model is to conduct a randomized controlled study to further evaluate the efficacy of ICT for youth with co-occurring disorders.

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Predicting Motivation to Change Among Adolescents with Substance Use Disorders

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Introduction

A critical component for recovery from substance abuse disorders is the *motivation to change* one's behavior. While *increasing* motivation to change is a key treatment goal, long-term recovery depends on *transforming* motivation from its frequent, extrinsic sources (e.g., courts, family members) to sources (e.g., attitudes, thoughts, feelings) intrinsic to the client (DiClemente & Prochaska, 1998). The current research examines: (1) the degree and nature of motivation to change among adolescents in substance abuse treatment and (2) whether motivation varies across significant subgroups of youth based on their gender, ethnicity, age, substance use, mental health profile, or prior treatment experience.

Methods

Sample

Data are from the Adolescents in Substance Abuse Treatment Study (ASAT)[1]. Structured, face-to-face interviews were conducted with 249 adolescents aged 12-18 years (M = 16; SD = 1.2) who had been recently admitted to publicly-funded, residential (81%) or nonresidential (19%) services for substance abuse between 1998 and 1999. Three-fourths of the youth were male; over half (63%) were White, 29% were Black, and 8% were of other ethnic backgrounds.

Measures

Motivation to Change. The Adolescent form of Circumstances, Motivation, Readiness, and Suitability (The CMRS Scales; DeLeon & Jainchill, 1986), adapted for this study, generates four subscales and one global measure of youth's motivation to change their substance-abusing behavior. The C-scale (Circumstances) includes six items and assesses extrinsic factors such as legal and family pressures to leave or stay in treatment. The M-scale (Motivation) includes five items that refer to intrinsic factors that tap youth's desire to change. The R-scale (Readiness) has four items that provide insight as to the youth's perception of the necessity for treatment in order to change. (The S-scale, which measures perceptions of the suitability of the treatment modality, was not used because of our focus on youth's motivation prior to current treatment.)

Continuous measures of motivation are based on sums across scale items. Ordinal measures reflect cutoff points based on sample means and standard deviations (Melnick, DeLeon, Hawke, Jainchill, & Kressel, 1997). Low, moderately low, moderately high, and high motivation to change are reflected, respectively, by scores that are greater than or equal to one standard deviation below the mean; between one standard deviation below the mean and the mean; between the mean and one standard deviation above the mean; and greater than or equal to one standard deviation above the mean.

Social, Legal, and Clinical Profiles. Social profile is assessed by youth's gender, ethnicity and age. Legal profile indicates whether treatment was mandated by the court, and whether the youth was in state custody at the time of treatment admission. The clinical profile includes: (a) whether the youth had received services for emotional, behavioral, or substance abuse problems prior to the current admission;

[1] *The ASAT was funded by the Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment as part of the Managed Care for Vulnerable Populations Project (see www.hsri.org/coord).*

(b) level of functional impairment, measured by the Columbia Impairment Scale (CIS; Bird, et al., 1993; Bird, et al., 1996); (c) level of symptomatology, measured by the Youth Self-Report (YSR; Achenbach, 1991); (d) number of negative consequences associated with youth's substance use in the six months before the current admission, measured by the Substance Use Disorder Diagnosis Schedule (SUDDS; Harrison & Hoffman, 1987); and (e) type of substance use.

Analyses

Cluster analysis was used to identify distinct types of substance use based on youth reports of frequency of use of eleven substances (plus any "other" substance) in the six months before current treatment. Multivariate regression analysis was used to identify significant predictors of motivation while controlling for interrelationships among the predictors.

Results

About two-thirds of the youth (65%) had been ordered to treatment by the court; 67% were in state custody at the time of admission. Nearly all (90%) had received prior services either in a residential (68%) or nonresidential (75%) setting. Over half (52%) of the sample had significant functional impairment; 52% had borderline or clinical levels of symptomatology, and 26% met criteria (i.e., clinical impairment and symptomatology) for serious emotional disturbance (SED). On average, youth experienced nine (*SD* = 4.8) out of 20 negative consequences related to their substance use in the six months before the current treatment.

The cluster analysis revealed four distinct types of substance users. The most common type included youth (41%) who typically used alcohol plus marijuana. The second-most common group included polysubstance users (22%) who used multiple substances other than or in addition to alcohol or marijuana. A third group (21%) included those who used alcohol infrequently, with or without infrequent use of other substances. A fourth type (16%) included youth who used marijuana exclusively.

Overall, a fairly large proportion of youth referred to drug treatment had low motivation (15%-20%) or moderately low motivation (28-36%) to change their substance-abusing behavior, with rates varying somewhat by the dimension (subscale) of motivation considered. Over half of the sample exhibited either moderately high or high motivation when motivation to change involved extrinsic factors (e.g., legal, family pressures to leave or remain in treatment: C-scale). Motivation was lower when it involved intrinsic factors that tapped youth's desire to change (M-scale) or youth's perceptions of the necessity for treatment in order to change (R-scale). This finding underscores the point that clients were frequently motivated to seek treatment because of external pressure, while the intrinsic motivation necessary for long-term treatment success was not as strong.

Multivariate analysis identified variables that affect youth's motivation independent of their relationship with other variables in the model. Results (see Table 1) suggest that motivation depends on youth's ethnicity, age, type of substance use, and the adversities that youth experience as a result of their substance use. However, these effects depend on the dimension of motivation. Older youth were more extrinsically motivated (C-scale) than younger youth, while Blacks seemed to have significantly less motivation from external pressures (C-Scale) than youth of other ethnic backgrounds. Examination of the individual items in the C-Scale suggests that this effect was driven by *fear of going to jail*, a circumstance that ostensibly increases motivation to change. Blacks (42%) were substantially less likely than Whites (61%) or others (57%) to report that they were afraid of jail. Neither age nor ethnicity seemed to affect the two intrinsic measures of motivation. Type of substance use affected the desire to change (M-scale), with more desire observed among youth whose substances of choice generally excluded marijuana. Finally, all three dimensions of motivation—extrinsic pressures, the desire to change, and the recognition of the need for treatment in order to change—were heightened significantly as the number and seriousness of adversities experienced by these youths increased because of their substance use.

Table 1
Multivariate Modeling of Motivation to Change Among Adolescents In Substance Abuse Treatment

	C-Scale (circumstances)		*M-Scale (motivation)*		*R-Scale (readiness)*		*Total CMR*	
	B (SE)	*Beta*	*B (SE)*	*Beta*	*B (SE)*	*Beta*	*B (SE)*	*Beta*
Social Profile								
Male	-.30 (.50)	-.04	.22 (.48)	.03	<.01 (.50)	.01	<-.01 (1.18)	-.01
Black	-1.53 (.48)	-.22[b]	.15 (.46)	.02	<-.01 (.48)	<.01	-1.38 (1.13)	-.08
Other ethnicity	-.50 (.84)	-.04	-.57 (.81)	-.05	-.73 (.85)	-.06	-1.81 (1.99)	-.06
Age	.36 (.18)	.14[c]	.18 (.17)	.07	.24 (.18)	.09	.79 (.42)	.12
Legal Profile								
Mandated Tx	-.67 (.45)	-.10	<-.01 (.43)	-.02	-.42 (.46)	-.06	-1.18 (1.07)	-.08
In Custody	-.62 (.44)	-.10	-.39 (.42)	-.06	.37 (.44)	.06	-.64 (1.04)	-.04
Clinical Profile								
Prior Tx	<-.01 (.70)	-.01	.48 (.67)	.05	.40 (.70)	.04	.81 (1.65)	.03
Level of Impairment	<-.01 (.03)	-.04	<.01 (.03)	.08	<-.01 (.03)	-.02	<.01 (.07)	.01
Level of Symptom.	<-.01 (.02)	-.07	<.01 (.02)	.02	<-.01 (.02)	-.16	<-.01 (.06)	-.09
# Neg. Consequences	.12 (.06)	.18[c]	.21 (.06)	.33[a]	.22 (.06)	.33[a]	.54 (.14)	.35[a]
Type of Substance Use								
Low Alcohol	.83 (.62)	.11	1.61 (.59)	.21[b]	<-.01 (.63)	<-.01	2.42 (1.5)	.13
Marijuana Only	1.01 (.64)	.12	.76 (.61)	.09	.27 (.64)	.03	2.04 (1.5)	.09
PolySubstance	.28 (.56)	.04	1.18 (.54)	.16[c]	.30 (.57)	.04	1.76 (1.3)	.10
Intercept (*SE*)	15.70 (3.1)		10.70 (3.0)		9.50 (3.2)		35.80 (7.5)	
Adj. R^2 (*p*-value)		.06 (.02)		.13 (<.001)		.07 (.01)		.09 (<.001)

Notes:
Referent groups for categoric variables are: female; White; Tx not mandated; not in custody; no prior Tx; alcohol+marijuana. Other variables are continuous.
[a] $p < .001$
[b] $p < .01$
[c] $p < .05$

Summary and Discussion

This research examined the motivation to change among adolescents admitted to publicly-funded treatment for substance abuse. Findings suggest that a sizable proportion of youth have little motivation to change their behavior, which may bode ill for their recovery. However, motivation has multiple dimensions. As the literature suggests, many clients, especially youth, seek treatment in response to external threats, but positive, long-term outcomes depend on transforming this extrinsic motivation into intrinsic reasons to change. These data suggest that youth are more extrinsically than intrinsically motivated to change, underscoring the need for treatment protocols (e.g., Motivational Interviewing, Motivational Enhancement Therapy) designed expressly to increase and transform motivation (Miller & Rollnick, 1991).

Multivariate results suggest that ethnicity relates to the type and degree of youth's motivation to change. Blacks seem to be less externally motivated to change than other youth, largely because they are less fearful of going to jail. This finding is perhaps unsurprising given that Blacks are overrepresented in every phase of the juvenile justice system (U.S. Dept. of Justice, 1999); it also raises a key policy implication. Specialized drug courts for alcohol and drug offenders often use incarceration as a "stick" for noncompliance with treatment mandates. This finding suggests alternative strategies may be warranted.

Findings also reveal important differences in the intrinsic desire to change that depend on youth's pattern of substance use. It is notable that youth who typically use marijuana exclusively, or in combination with alcohol (the modal type), have significantly less desire to change their substance use behavior than youth whose substance choices do not typically include marijuana. In addition to pharmacological differences between substances, treatments that recognize the varying subcultures that develop around certain substances and the youth who use them are indicated.

Finally, it is perhaps simultaneously tragic and hopeful that we find multiple, negative consequences of substance use consistently increasing youth's extrinsic as well as intrinsic motivation to change their lives, lending empirical support to what many already know experientially—external pressures alone are likely to be unsuccessful in managing substance abuse until abusers come to believe that they want to change and need formal treatment to do it.

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