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Predicting First Time Involvement in the Juvenile Justice System Among Emotionally Disturbed Youth Receiving Mental Health Services

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Rates of mental illness among youth in the juvenile justice system are exceptionally high, yet the understanding of the process by which some mentally ill youth end up in juvenile justice, whereas others stay in the mental health system is relatively undeveloped. The goal of the present study is to extend previous research findings by focusing prospectively on 659 youth between the ages of 8 and 17 years who were enrolled in Medicaid with a psychiatric diagnosis. Of those with no prior involvement with the juvenile justice system at baseline, 12% had contact with the juvenile justice system within 1 year. Those who were older, exhibited more externalizing behaviors, and came from minority backgrounds were more likely to come into contact with the juvenile justice system. Dual-system involvement was common, suggesting that a more integrated approach between these systems needs to be developed with a special emphasis on minority youth who exhibit externalizing disorders.

Many youth in the juvenile justice system suffer from mental health problems, leading some commentators to assert that juvenile detention centers are often surrogate mental hospitals (Cocozza & Skowyra, 2000). For example, approximately 20% of the adolescent population suffers from mental health problems, whereas over 50% of juvenile offenders exhibit some form of mental illness (Kazdin, 2000; Teplin et al., 2002; Wasserman et al., 2002). These prevalence rates, however, only tell part of the story; that is, adolescents under the auspices of the juvenile justice system are markedly more likely to have mental health problems. Very little is known about the factors that increase the risk of a mentally ill adolescent becoming involved with the juvenile justice system. The goal of this article is to examine factors associated with that initial involvement.

The Connection Between Mental Health System Involvement and Juvenile Justice System Involvement

As implied above, many adolescents have either sequential or concurrent involvement with both the mental health and juvenile justice systems. One of the reasons for this dual-system involvement may be simply that mental disorders and delinquency have common antecedents. There is research that establishes a link between mental disorder and arrest in adults (Monahan, 1992; Otto, Greenstein, Johnson, & Friedman, 1992) as well as between delinquency and psychopathology in adolescents (Fabrega, Ulrich, & Loeber, 1996). Although not delineated in any detail, there is reason to believe that at least part of the phenomenon of dual-system involvement simply reflects the fact that mental disorders in adolescents often

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manifest themselves in behaviors that could be considered antisocial or criminal.

An alternative explanation is that the juvenile justice and mental health systems work in concert to keep troubled adolescents in check. According to this view, both of these systems provide formal social control for a proportion of adolescents whose behavior makes them hard to control in the community (Weithorn, 1988). Because adolescent antisocial behavior can be interpreted in either mental health or delinquency terms, it has been posited that families and communities might call on either the juvenile justice system or the mental health system as a solution to adjustment problems demonstrated by adolescents. Moreover, on the basis of cross-sectional data drawn from each system, it seems that race–ethnicity serves as the most influential factor in differentiating who gets "controlled" by which system; juvenile justice samples are composed, overwhelmingly, of minority adolescents, whereas mental health samples are predominantly White (Isaacs, 1992; U.S. Department of Health and Human Services, 2001).

Recent research indicates that the overlap between the "client base" of the juvenile justice system and that of community mental health agencies is considerable and possibly increasing. According to a study by Rosenblatt, Rosenblatt, and Biggs (2000), of the 4,924 youth (0–20 years of age) in their sample, 20% of the mental health service recipients had been arrested and 30% of those who had been arrested received mental health services. In another study by Vander Stoep, Evens, and Taub (1997), of 645 youth (10–17 years of age) who entered community-based public mental health programs, approximately 21% were also found to be involved with the juvenile justice system. Thus, there appears to be a consistent "1-in-5" ratio of involvement in juvenile justice for adolescent recipients of mental health services.

In the Vander Stoep et al. (1997) investigation, which looked at treatment records for 645 youth in King County, Washington, the authors found that over the course of 1 year, youth who were involved in a community-based public mental health system were three times more likely to come into contact with the juvenile justice system as compared with youth of similar gender and age in the general population. Specifically, the results indicated that overlap between the mental health system and the juvenile justice system is highest between the ages of 14 and 16. In addition, Vander Stoep et al. found that African Americans, Native Americans, and Hispanics had higher prevalence rates than did Whites in both juvenile justice and mental health settings. African American youth had high rates of criminal referral, regardless of their mental health system involvement, and Asian American youth had low rates of criminal referral regardless of their mental health system involvement. Hispanic youth who were involved in the mental health system were at the greatest risk of criminal involvement. It was also found that youth who were sent to the juvenile justice system via the mental health system were more likely to receive a conviction than were youth who entered the juvenile justice system directly. Although this study was able to examine the co-occurrence of the use of the two systems over a 1-year period, its cross-sectional nature limits the types of conclusions that can be drawn.

Additional risk factors for identifying which youth in the mental health system are more likely to be sent to the juvenile justice system have also been assessed. In another study of 645 youth between the ages of 10 and 17 who received public mental health services, Evens and Vander Stoep (1997) examined factors associated with increased risk of involvement with the juvenile justice system. In particular, after controlling for age, race–ethnicity, and gender, the results indicated that having parents with a history of incarceration, being physically abused, and abusing drugs or alcohol all increased the likelihood of moving from the mental health system to the juvenile justice system. Race–ethnicity, however, still contributed significant unique variance, with African American youth still more likely to be referred to the juvenile justice system, even after taking into account possible differences in substance use, physical abuse, and family criminal history. Overall, a large proportion of youth who enter the public mental health system are likely to be referred to the juvenile justice system, especially if they are from minority backgrounds or present with substance abuse, physical abuse, or a history of family criminal behavior.

Focus of the Present Study

The goal of the present study is to extend previous research findings by focusing prospectively on a high-risk sample of youth receiving mental health treatment for serious mental health problems. Specifically, this study focuses on youth enrolled in Medicaid in southwestern Pennsylvania (a sample originally drawn to examine the effect of managed care on youth with serious emotional problems) and to determine what factors, if any, predict involvement in the juvenile justice system. This study replicates previous research regarding the prevalence of juvenile justice involvement in an at-risk mental health sample, and extends this work by examining the incidence of juvenile justice referral in a prospective fashion.

Method

Participants

To explore the effects of managed care on youth with serious emotional problems, we used data from two studies (the Allegheny County Children's Medicaid Evaluation [ACCME] and the Child and Adolescent Medicaid Evaluation in Rural Areas [CAMERA]) funded by Substance Abuse and Mental Health Services Administration. We used Medicaid administrative data to identify youth with prior use of intensive mental health services (inpatient admission, partial hospitalization, intensive case management, etc.) with a diagnosis on the claim other than substance use or mental retardation. To be eligible for participation in this 1-year longitudinal study, youth had to be (a) between the ages of 8 and 17 and (b) enrolled in Medicaid at the time of the interview. In the ACCME sample, youth from Allegheny County (Pittsburgh, PA) were selected on the basis of service use between July 1, 1992, and June 30, 1994, and baseline interviews were conducted from April 1996 to July 1997. In CAMERA, youth from 10 suburban and rural counties surrounding Allegheny were selected on the basis of services between July 1, 1993, and June 30, 1995, and baseline interviews were conducted from April 1997 to July 1998.

In ACCME, a total of 998 youth between the ages of 8 and 17 were identified from Medicaid administrative data. Of these, 214 youth were identified as living in state custody or in agency placements. We initially attempted to contact the agency caregivers of these youth but discontinued the efforts because these caregivers were usually unable to provide informed consent for the participation of the youth in the research project. We contacted 94 youth in state custody or agency placements as well as the remaining 784 youth. Of these 878 youth, 115 (13.1%) were determined to be ineligible on the basis of subsequent Medicaid enrollment data or an interview with a family member. Of the 763 eligible youth, 113 (14.8%) refused to participate, 239 (31.3%) were not reached, and 26 (3.4%) agreed to be interviewed but could not be interviewed before the recruitment period ended. A total of 388 participants (50.8%) completed the baseline interview, and 322 of these participants (82.9%) completed the 6-month and 12-month follow-up interviews.

CAMERA excluded youth in state custody or living in agency placements, and youth could be between the ages of 8 and 17 at the baseline interview. A total of 1,046 youth between the ages of 8 and 17 were identified from Medicaid administrative data. Of these 1,046, 154 (11.0%) were determined to be ineligible on the basis of subsequent Medicaid enrollment data or an interview with a family member. Of the 892 eligible, 119 (13.3%) refused to participate, 380 (42.6%) were not reached, and 18 (2.0%) agreed to be interviewed but could not be interviewed before the recruitment period ended. A total of 375 participants (42.0%) completed the baseline interview, and 337 of these participants (89.8%) completed the 6-month and 12-month follow-up interviews.

Procedures

Using procedures approved by the University of Pittsburgh Institutional Review Board, we contacted families by mail or by telephone to invite them to participate in the study evaluating the delivery of mental health services for Medicaid recipients in southwestern Pennsylvania. After providing a complete description of the study to the participants, we obtained written informed consent. At the time of recruitment into the study, enrollment in managed care for Medicaid recipients was voluntary and recipients could change plans every month. The 60–90-min interviews with the child's primary

adult caregiver were conducted at study entry, with follow-up interviews at 6 months and 12 months for CAMERA and at 3, 6, 9, and 12 months for ACCME.

Measures

Demographics. Data on the child's age, gender, race–ethnicity (categorized as White vs. Other) was provided by the child's primary adult caregiver. Respondents also reported on their own education, which was categorized into four groups: did not finish high school, completed high school or GED, post high school education, and bachelor's degree or above. We also recorded information on marital status (married vs. other) and the number of individuals living in the household. In order to characterize the geographic location of the child's residence (rural vs. urban), we obtained zip code data from 1990 census data. Zip codes with no rural residents were considered to be urban, zip codes with no urban residents were considered to be rural, zip codes with less than 50% rural dwellers were considered to be semiurban, and zip codes with 50% or more residents in rural areas were considered semirural.

Juvenile justice involvement. Questions adapted from the Child and Adolescent Functional Assessment Scale (Hodges & Wong, 1996) were used to identify juvenile justice involvement. At both the 6- and 12-month follow-up, adult caregivers were asked whether their child had been arrested, found guilty of a crime or delinquent offense, on probation or under court supervision, held in jail or detention for breaking the law, or had any other encounter with the juvenile justice system during the time period. Endorsement of any one of these items was considered involvement with the juvenile justice system because the occurrence of any of these outcomes required, at a minimum, an arrest as a juvenile.

Psychological functioning. Three different instruments were used to assess psychological functioning and mental health symptomatology. The Child Behavior Checklist—Parent report (CBCL; Achenbach, 1999) was used to assess general maladaptive behaviors. These standardized measures generate *T* scores that reflect a child's status relative to others of the same sex and age on the Internalizing, Externalizing, and Total Problems subscales. Validity, internal consistency, and test–retest reliability have been extensively documented (Achenbach, 1999). The response scale for each item ranges from 0 (*not true of this child*) to 2 (*very true* or *often true of this child*). Respondents with a *T* score of 64 or above for any subscale are considered in need of clinical treatment in that area.

The 13-item Columbia Impairment Scale (CIS) is a brief, parent-report scale designed to provide a global measure of psychosocial impairment. Developed by Bird et al. (1993), the scale was designed to identify functional deficits among youth in four major areas of functioning: interpersonal relations, certain broad areas of psychopathology, functioning at school or work, and use of leisure time. Items are scored on a Likert-type scale ranging from 0 (*no problem*) to 4 (*a very big problem*) with the potential total score ranging from 0 to 52. Higher scores indicate greater levels of impairment, with scores of 16 or higher considered definite impairment. The CIS has been found to be a reliable and valid measure of impairment, and it correlates highly with the clinician-determined scores of the Children's Global Assessment Scale (Bird et al., 1993; Shaffer et al., 1983)

The Caregiver Strain Questionnaire (Brannan, Heflinger, & Bickman, 1997) was used to assess the degree to which the caregiver experienced difficulties, strains, and other negative effects as a result of caring for a child with emotional or behavioral problems. On a 5-point scale ranging from 1 (*not at all*) to 5 (*very much*), respondents indicate how much of a problem they have had with experiences such as disruption of family routines, financial strain, or isolation as a result of their child's emotional or behavioral problem. Higher scores indicate greater level of strain, and previous research has shown that caregiver strain is influential in predicting service use (Brannan et al., 1997).

Medicaid coverage and health plan type. The child's eligibility for Medicaid, obtained from Medicaid administrative data, was categorized as either disability coverage or public assistance (including cash and noncash assistance). Respondents reported whether youth were enrolled in a Medicaid Managed Care Organization (MCO) or traditional fee-for-service Medicaid. At the time of this study, enrollment in managed care for Medicaid recipients was voluntary, and local MCOs were for-profit, independent practice associations (IPAs) that

used separate organizations to manage mental health and substance abuse services.

Services use. Respondents reported on youth's recent service use during the last 3 months for ACCME and during the last 6 months for CAMERA. Because different instruments for assessing services were used in the two studies, we developed a four-category summary measure to identify intensity of services used. The first group (*overnight care*) included youth with at least one overnight stay at an inpatient or residential treatment facility. The second category (*intensive outpatient*) included youth with any participation in intensive outpatient programs, special school programs, intensive case management, crisis management, family-based mental health services or more than eight visits in a regular outpatient setting. The third group (*regular outpatient*) included youth with up to eight visits in a regular outpatient setting, and the fourth group (*no services*) reported no specialty mental health care during the reporting period.

Data Analysis

The analysis focused on (a) examining the differences between adolescents with prior juvenile justice involvement and those without such involvement and (b) identifying those factors that prospectively related to new juvenile justice involvement for those adolescents without prior involvement. We conducted bivariate analyses separately within each participant group (ACCME and CAMERA) to ensure that there were no systematic differences in factors related to juvenile justice involvement between the sites. Because no differences were observed between the two study sites in the relationship of predictor variables and juvenile justice involvement, we combined the samples for analyses of the predictors of juvenile justice involvement. All analyses were conducted in SAS. We initially used chi-squares and t tests to test for bivariate differences between youth with prior juvenile justice involvement at baseline versus other youth and then used logistic regression to identify factors having independent associations with prior juvenile justice involvement. To examine predictors of new involvement in juvenile justice, we excluded youth with prior involvement. We then looked at bivariate associations through the use of t tests and chi-squares, and we used logistic regression to test the independent effect of predictor variables on new juvenile justice involvement.

Results

Factors Related to Concurrent Involvement

Of the 659 youth with complete data, 166 (25.2%) of the caregivers reported their child's prior involvement in the juvenile justice system at the baseline interviews (n = 88 or 27.3% from ACCME; n = 78 or 23.1% from CAMERA). Table 1 shows the characteristics of those who reported juvenile justice involvement compared with those who did not.

Bivariate tests of differences showed those participants with prior juvenile justice involvement were more likely to be older, $t = -11.78$, $p < .0001$; male, $\chi^2 = 102.45$, $p < .0001$; with higher Externalizing behaviors, $t = -3.03$, $p < .005$; and with a tendency toward more general impairment (CIS: $t = -1.92$, $p = .06$) than had those with no involvement in the juvenile justice system at baseline. Caregivers who experienced more difficulties and strain as a result of caring for a child with emotional or behavioral problems were also more likely to have youth with prior juvenile justice system involvement, $t = -3.13$, $p < .005$. In addition, those who were enrolled in the Medicaid managed care plan were more likely to have had prior juvenile justice involvement (30%) than those who had no involvement in the juvenile justice system (19%) at baseline, $\chi^2 = 8.52$, $p < .005$. There were, however, no significant group differences on race–ethnicity, family variables, or the intensity of mental health services received.

To determine the relative influence of these variables on prior juvenile justice involvement, we conducted a logistic regression (see Table 2). Youth who were older than age 15 (odds ratio [OR] = 11.4; confidence interval [CI] = 7.0–18.6), non-White (OR = 1.7; CI = 1.0–2.8), and enrolled in managed care (OR = 1.7; CI = 1.0–2.8) were more likely to have prior juvenile justice involvement, whereas girls were less likely to be involved (OR = 0.3; CI = 0.2, –0.5). Internalizing symptoms were also associated with lower odds of justice involvement (OR = 0.97; CI = 0.95–0.99), indicating that for every 1-point decrease in the CBCL Internalizing score, the odds of juvenile justice in-

Table 1
Characteristics of Youth With and Without Prior Involvement in the Juvenile Justice System

Demographic characteristic	Prior juvenile justice involvement (n = 166)	No juvenile justice involvement at baseline (n = 493)	p value
Youth			
Age, *M* (*SD*)	15.0 (1.90)	12.3 (2.8)	.0001
Gender, % (*n*)			
Male	75.3 (125)	66.3 (327)	.05
Female	24.7 (41)	33.7 (166)	
Race–ethnicity % (*n*)			
African American	31.3 (52)	24.1 (119)	*ns*
White	62.7 (104)	68.6 (338)	
Other	6.0 (10)	7.3 (36)	
Eligible for Medicaid through disability, % (*n*)			
Yes	51.2 (85)	46.1 (227)	*ns*
No	48.8 (81)	53.9 (266)	
Enrolled in Medicaid managed care plan, % (*n*)			
Yes	30.1 (50)	19.3 (95)	.01
No	69.9 (116)	80.7 (398)	
Family			
Respondent age, *M* (*SD*)	40.1 (7.3)	39.5 (9.4)	*ns*
Respondent, % (*n*)			
Mother (biological/step/adopt)	83.1 (138)	82.2 (405)	*ns*
Father (biological/step/adopt)	4.2 (7)	2.6 (13)	
Other	12.7 (21)	15.2 (75)	
Respondent education level, % (*n*)			
Less than high school	25.3 (42)	22.6 (111)	*ns*
High school graduate	33.1 (55)	34.4 (169)	
More than high school	27.7 (46)	29.7 (146)	
College/postgraduate degree	25.8 (23)	13.4 (66)	
Primary caretaker married, % (*n*)			
Yes	38.0 (63)	36.3 (179)	*ns*
No	62.0 (103)	63.7 (314)	
Study site			
CAMERA	47.0 (78)	52.5 (259)	*ns*
Mental health (MH) services			
Intensity of recent MH services, % (*n*)			
No services	22.3 (37)	20.5 (101)	*ns*
Outpatient only	24.1 (40)	25.0 (123)	
Intensive outpatient only	34.9 (58)	41.6 (205)	
Inpatient–residential stay	18.7 (31)	13.0 (64)	
Symptoms–functioning			
Columbia Impairment Scale total (*SD*)	26.8 (11.30)	25.1 (10.15)	.06
Child Behavior Checklist score (*SD*)			
Internalizing subscale	61.5 (12.17)	62.7 (12.07)	*ns*
Externalizing subscale	68.2 (10.70)	65.0 (11.79)	.01
Caregiver strain score (*SD*)	2.7 (0.90)	2.5 (0.83)	.01

Note. N = 659. CAMERA = Child and Adolescent Medicaid Evaluation in Rural Areas.

volvement decreased by 3%. Thus among youth with a CBCL Internalizing score one standard deviation below the group mean, the odds of juvenile justice involvement were about 36% lower. Conversely, Externalizing symptoms increased the chances of juvenile justice involvement (OR = 1.07; CI = 1.04–1.11), with the odds of involvement increasing 7% for every 1-point increase in the Externalizing score.

Factors Related to Prospective Involvement

Because this study followed participants over time, we were able to identify factors that pre-

Table 2
Logistic Regression Assessing Factors Associated With Prior Involvement in Juvenile Justice

Demographic characteristic	Odds ratio[a]	95% confidence interval	
Age ≥ 15	**11.41**	**7.01**	**18.56**
Gender (female)	**0.27**	**0.16**	**0.46**
Race–ethnicity (non-White)	**1.69**	**1.03**	**2.78**
Parent education (college or higher)	1.01	0.66	1.54
Parent is married	1.18	0.76	1.84
Medicaid eligibility (disability)	1.24	0.80	1.90
Enrolled in managed care	**1.69**	**1.04**	**2.76**
Study (CAMERA)	0.90	0.57	1.44
Functioning (CIS total score)	0.99	0.96	1.01
Internalizing symptoms (CBCL)	**0.97**	**0.95**	**0.99**
Externalizing symptoms (CBCL)	**1.07**	**1.04**	**1.11**
Caregiver strain (CSQ)	1.13	0.82	1.56
Recent intensive services use[b]	1.23	0.79	1.93

Note. $N = 659$. CAMERA = Child and Adolescent Medicaid Evaluation in Rural Areas; CIS = Columbia Impairment Scale; CBCL = Child Behavior Checklist; CSQ = Caregiver Strain Questionnaire.
[a] Odds ratios are based on multivariate logistic regression with all variables included in the model. The full model was significant, χ^2 (13, $N = 659$) = 113.2, $p < .0001$, Adjusted $R^2 = .22$. Variables with significant associations are shown in bold. [b] Intensive mental health services use is defined as at least one overnight stay in an inpatient or residential setting or use of intensive outpatient services in last 6 months.

dicted new involvement in the juvenile justice system among this high-risk sample of youth with serious mental health problems. To do this analysis, we excluded the group with former juvenile justice involvement and examined only the factors related to initial involvement in the remaining sample. The sample for this analysis included 493 youth ($n = 210$ from ACCME; $n = 226$ from CAMERA).

Of the 493 youth with serious emotional problems and no prior involvement with the juvenile justice system, 57 (12%) reported new juvenile justice involvement at either the 6- or 12-month follow-up interview. Bivariate analyses suggested that youth who became newly involved in the juvenile justice system were older, $\chi^2(3) = 11.8$, $p < .05$, and more likely to be from a minority background, $\chi^2(4) = 16.9$, $p < .01$. In addition, youth with new juvenile justice involvement have poorer functioning at baseline, with a mean CIS score of 28.9 ($SD = 10.6$) versus youth with no juvenile justice involvement ($M = 24.5$, $SD = 10.0$), $t = -3.08$, $p < .01$. Results also indicate that youth with higher Internalizing scores, $t = -2.28$, $p < .05$, as well as Externalizing scores, $t = -3.03$, $p < .01$, on the CBCL were likely to become involved with the juvenile justice system. Specifically, 80.0% of the youth who reported new juvenile justice involvement scored in the clinical range on the CBCL as compared with 58.8% of the youth with no juvenile justice contact, $\chi^2(1) = 9.2$, $p < .01$. There were no differences between the groups on level of caregiver strain or intensity of recent mental health services. The characteristics of the groups are shown in Table 3.

A logistic regression was run to examine the overall and relative power of the baseline variables to predict new juvenile justice involvement (see Table 4). This analysis shows a relatively weak but still statistically significant model predicting initial juvenile justice involvement within this sample. In this analysis, severity of Externalizing symptoms was a significant predictor, with an OR of 1.07 ($p < .001$), indicating that for every 1-point increase in the CBCL Externalizing score, the odds of juvenile justice involvement increased by 7% (see Table 4). Age (OR = 2.10; CI = 1.01–4.36) and non-White race–ethnicity (OR = 2.59; CI = 1.30–5.17) were also significantly related to future juvenile justice involvement, with older and minority youth more likely to become involved. Intensity of mental health services at baseline did not affect the likelihood of new juvenile justice involvement.

Discussion

The rate of mental health disturbance among youth in the juvenile justice system is exceptionally high. Yet the understanding of the process by which some mentally ill youth end up in juvenile justice, whereas others stay in the mental health system is relatively undeveloped. The present study had two goals. First, it provided another look at the prevalence of juvenile justice involvement among adolescents receiving intensive mental health services. Second, it looked prospectively at the factors that are related to initial juvenile justice involvement among youth who already suffer from serious mental health problems and are receiving services.

Table 3
Baseline Characteristics of Youth With and Without New Involvement in Juvenile Justice System

Demographic characteristic	New juvenile justice involvement (n = 56)	No new juvenile justice involvement (n = 437)	p value
Youth			
Age M (SD)	13.10 (2.30)	12.2 (2.8)	.05
Gender, % (n)			
Male	64.3 (36)	66.6 (291)	*ns*
Female	35.7 (20)	33.4 (146)	
Race–ethnicity % (n)			.01
African American	23.2 (13)	24.3 (106)	
White	58.9 (33)	69.8 (305)	
Other	17.9 (10)	5.9 (26)	
Eligible for Medicaid through disability, % (n)			
Yes	42.9 (24)	46.6 (203)	*ns*
No	57.1 (32)	53.4 (234)	
Enrolled in Medicaid managed care plan, % (n)			
Yes	26.8 (15)	18.3 (80)	*ns*
No	73.2 (41)	81.7 (357)	
Family			
Respondent age, M (SD)	38.9 (6.9)	39.6 (9.6)	*ns*
Respondent, % (n)			
Mother (biological/step/adopt)	87.5 (49)	81.5 (356)	*ns*
Father (biological/step/adopt)	3.6 (2)	2.5 (11)	
Other	8.9 (5)	16.0 (70)	
Respondent education level, % (n)			
Less than high school	30.4 (17)	21.6 (94)	*ns*
High school graduate	35.7 (20)	34.2 (149)	
More than high school	30.4 (17)	29.6 (129)	
College/post graduate degree	3.6 (2)	14.7 (64)	
Primary caretaker married, % (n)			
Yes	39.3 (22)	35.9 (157)	*ns*
No	60.7 (34)	64.1 (280)	
Study site			
CAMERA	57.1 (32)	52.0 (227)	*ns*
Mental health (MH) services			
Intensity of recent MH services, % (n)			
No services	26.8 (15)	19.7 (86)	*ns*
Outpatient only	12.5 (7)	26.5 (116)	
Intensive outpatient only	44.6 (25)	41.2 (180)	
Inpatient–residential stay	16.1 (9)	12.6 (55)	
Symptoms–functioning			
Columbia Impairment Scale total (SD)	28.9 (10.6)	24.5 (10.0)	.01
Child Behavior Checklist score (SD)			
Internalizing subscale	65.6 (10.6)	61.7 (12.2)	.05
Externalizing subscale	70.7 (9.2)	64.2 (11.9)	.01
Caregiver strain score (SD)	2.6 (0.9)	2.5 (0.8)	*ns*

Note. N = 493. CAMERA = Child and Adolescent Medicaid Evaluation in Rural Areas.

This study provided substantiation for previous work regarding the likely prevalence of juvenile justice system involvement among adolescents receiving mental health services. The figure of approximately 25% of the participants reporting juvenile justice system involvement at the baseline interview was slightly higher than the figure of 20% reported in prior research. This discrepancy could certainly be attributed to differences in the sampling criteria used for determining who qualified as receiving mental health services in these different studies. In addition, the variables related to involvement in juvenile justice were relatively predictable, in-

Table 4
Logistic Regression Predicting New Involvement in Juvenile Justice

Demographic characteristic	Odds ratio[a]	95% confidence interval	
Age ≥ 15	**2.10**	**1.01**	**4.36**
Gender (female)	0.71	0.35	1.42
Race–Ethnicity (non-White)	**2.59**	**1.30**	**5.17**
Parent education (college or higher)	1.03	0.56	1.88
Parent is married	1.34	0.71	2.53
Medicaid eligibility (disability)	0.85	0.46	1.57
Enrolled in managed care	1.87	0.93	3.76
Study (CAMERA)	1.52	0.79	2.93
Functioning (CIS total score)	1.03	0.98	1.07
Internalizing symptoms (CBCL)	1.00	0.97	1.04
Externalizing symptoms (CBCL)	**1.07***	**1.03**	**1.12**
Caregiver strain (CSQ)	0.67	0.40	1.11
Intensive services use during year[b]	1.34	0.70	2.56

Note. $N = 659$. CAMERA = Child and Adolescent Medicaid Evaluation in Rural Areas; CBCL = Child Behavior Checklist; CSQ = Caregiver Strain Questionnaire.
[a] Odds ratios are based on multivariate logistic regression with all variables included in the model. The full model was significant χ^2 (13, $N = 659$) = 29.0, $p < .01$, Adjusted $R^2 = .07$. Variables with significant associations are shown in bold. [b] Intensive services use is defined as at least one overnight stay in an inpatient or residential setting or use of intensive mental health services in the last 6 months.

cluding age, race–ethnicity, and level of externalizing behaviors. As adolescents' age and level of involvement in overt antisocial behaviors increase, their chances of involvement with the juvenile justice system increase as well.

Unlike previous work, however, family demographic variables were not related to juvenile justice involvement in this study. Again, this may be the result of sampling differences at different sites. However, parents who experienced difficulty in caring for an emotionally disturbed youth were also more likely to have youth with prior juvenile justice system involvement. Whether their child's mental health problem created this strain, or whether the strain was already present prior to the emotional disturbance, parents who have had difficulty caring for youths with mental illness may turn to the juvenile justice system for help. For example, in a national study on families with youth who suffer from mental illness, more than one third of the parents reported that their youth were placed in juvenile justice because needed services were not otherwise available, and 23% of parents reported having been told that they had to relinquish custody of their youth to get needed services (National Alliance for the Mentally Ill, 1999).

It is interesting to note that those who were enrolled in managed care were more likely to have prior juvenile justice involvement. This finding may reflect selective enrollment in managed care among youth with juvenile justice experience. Previous work has demonstrated selective enrollment in managed care on the basis of prior health care use: youth with greater use of mental health care were less likely to enroll in or stay in managed care plans (Scholle, Kelleher, Childs, Mendeloff, & Gardner, 1997). Thus, youth involved in juvenile justice may have fewer ties to mental health treatment and less involvement from parents who might disenroll them from managed care so they can get more services in fee-for-service care.

The prospective findings regarding the variables related to initial involvement with juvenile justice in this sample of mentally disordered youth are particularly important to consider because there are no comparable studies of this sort in the literature. Results indicate that 12% of youth with serious emotional problems and no prior involvement with the juvenile justice system end up having contact with the juvenile justice system within 1 year. The findings also indicate that among youth with serious mental illness and no prior involvement with the juvenile justice system, those who are older, exhibit more externalizing behaviors, and come from minority backgrounds are more likely to come into contact with the juvenile justice system.

The fact that certain variables were influential in one or both of the analyses points toward some processes possibly worth examining. Age is influential in both models, indicating that the developmental process of increased involvement with juvenile justice in mid-adolescence, as observed in numerous cohort samples (Elliot, 2000; Thornberry, Huizinga, & Loeber, 1995), seems also to hold (although possibly at a higher rate) for mentally ill adolescents. The influence of race–ethnicity on both initial and subsequent risk for involvement in the juvenile justice system might indicate that the common pathways to the juvenile justice system begin earlier for non-White, mentally ill youth. Unfortunately, our sample size was too small to investigate this question with any level of con-

fidence in the statistical validity of the analyses. Whether this is due to systematic bias against minority youth by the correctional and mental health systems, the tendency of the mental health system to more often classify minority patients as antisocial, the predilection of the correctional system to detain minority persons in general, or simply that minority youth commit more serious antisocial acts is not clear. Girls and youth with internalizing symptoms were less likely to have juvenile justice involvement at baseline, but these factors were not protective in the predictive model. Youth in managed care were more likely to have prior juvenile justice involvement but were not at greater risk of subsequent juvenile justice involvement. This may reflect selection of families into managed care rather than managed care leading to juvenile justice involvement.

A consistent finding in both analyses was that the intensity of mental health services was not related to juvenile justice system involvement. This finding raises a further set of questions. It seems to indicate that receipt of more intensive services is not dependent on the same factors as are the ones that drive juvenile justice system involvement. It may also be that the mental health system may not be focusing resources differentially on those adolescents at most risk for dual-system involvement. Offsetting effects may also be involved. For example, though it might be argued that one would expect intensive services to be indicative of more severe mental health problems, and therefore to be correlated with increased juvenile justice system involvement, one might also argue the opposite—that intensive services should be a protective factor, assuming that the treatment is effective. An exploration of the role of mental health service efficacy is beyond the scope of this study but should be included in future work.

Limitations

Some of the limitations of the study should be recognized. First, our criteria for juvenile justice involvement are very broad, including items ranging from arrest to time in detention or a juvenile justice facility. Though we cannot examine the exact pathway on which youth progress through the juvenile justice system, we can identify the initial introduction or gateway to the juvenile justice system. Second, although recruitment into the study required that all youth have a *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 1994) diagnosis on their Medicaid claim other than substance use or mental retardation, we do not report the exact diagnosis for each youth in the sample. Even though we do not report the exact diagnosis, the criteria by which these youth were selected as well as their mental health functioning scores as indicated by the CBCL and CIS indicate that the youth in this study are seriously emotionally disturbed. Because the focus of this study was to examine how youth who are currently in the mental health system come into contact with the juvenile justice system, the issue of diagnosis was not central to the focus of this article. It is worth noting, however, that the overall levels and dynamics observed might be different if a different mix of mentally ill youth were included (especially if adolescents with primary diagnoses of substance use disorders were included in the sample).

Clinical Implications

Despite these limitations, this study provides valuable insight into the concurrent and prospective processes affecting the involvement of youth with the mental health and juvenile justice systems. As noted by the American Academy of Child and Adolescent Psychiatry Task Force on Juvenile Justice Reform, a comprehensive continuum of medical and mental health services needs to be established in order to address the unmet mental health problems of youth in the juvenile justice system (Arroyo et al., 2001). It is clear that these systems jointly affect a sizable proportion of troubled adolescents and that these systems are at best only minimally integrated. Understanding how careers in both systems are shaped for adolescents is essential to bringing these systems together effectively. Currently, however, we have only a rudimentary understanding of how adolescents move between these different systems. This study provides an initial view of a critical point in that process.

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