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Predictors of Criminal Charges for Youth in Public Mental Health during the Transition to Adulthood

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Abstract

Dual involvement with the mental health system and justice system is relatively frequent for young adults with mental health problems, yet the research on factors predictive of dual involvement is incomplete. This study extends past research on predictors of criminal charges for people in the public mental health system in four ways. First, this study expands the longitudinal study period to include the time of transition to adulthood, from 16 to 25 years of age. Second, this study separately predicts specific types of criminal charges, including violent, property, drug, and nuisance charges. Third, this study examines whether residential treatment or inpatient hospitalization are predictive of criminal charges. Fourth, this study stratifies prediction by gender. Findings indicated high levels of dual involvement during this time period. In general, males and people diagnosed with substance use disorder or conduct disorder were more likely to have a criminal charge. Other predictors of specific criminal charges varied by gender. Residential treatment, inpatient hospitalization, and anxiety disorder were generally not related to criminal charges. Implications for cross-system collaboration and early intervention are discussed.

Keywords

children's mental health; transition to adulthood; juvenile justice; crime; out-of-home treatment

Introduction

Youth who are receiving or who have received mental health services are at high risk of contact with the juvenile justice system. For instance, a study of youth who received publicly funded mental health services found 69% of males and 46% of females were arrested before the age of 25 (Davis, Banks, Fisher, Gershenson, & Grudzinskas, 2007). In a different study, 20% of the youth served by the public mental health system at any time over the course of 38 months were also arrested at some point during that period (Rosenblatt, Rosenblatt, & Biggs, 2000). Of particular concern are adolescents and young adults in the mental health and juvenile justice systems who are transitioning into adulthood. Criminal behavior peaks during late adolescence and young adulthood, roughly from 16 to 25 years of age (Ellis, 1990; Laub & Sampson, 2003; Stolzenberg & D'Alessio, 2007). Often, the institutional rules and regulations governing supportive services such as community mental health or child welfare are restricted by age. These services may end at 18 or 19 years of age, forcing an unwelcome institutional transition prior to the developmental transition into emotional maturity. Young adults in these situations are extremely vulnerable to negative influences from their neighborhood and peers, and developmentally are less able to control their impulses or plan for the future (Baltodano,

Mathur, & Rutherford, 2005; Chung, Little, & Steinberg, 2005; Davis, 2003). During this time, the repercussions of violating the law suddenly become much more severe, as social policy for adults who exhibit problematic behavior tends to be more punitive and reliant on the criminal justice system (Altschuler, 2005; Cooper, Puritz, & Shang, 1998).

Therefore, social policy would benefit from an identification of the risk factors for dual mental health and justice system involvement during the transition to adulthood in order to better target intervention and prevention efforts. There have only been a few studies examining the longitudinal predictors of juvenile or adult justice system contact for youth who had received or were receiving services from the public mental health system. These studies consistently report high rates of offense (defined in various ways) for youth who had received public mental health services, with estimates ranging from 20% to 64% (Davis et al., 2007; Davis, Banks, Fisher, & Grudzinskas, 2004; Evens & Vander Stoep, 1997; Graves, Frabutt, & Shelton, 2007; Rosenblatt et al., 2000; Scott, Snowden, & Libby, 2002). These studies found that, among youth with a history of mental health services, there were specific factors predicting dual involvement. In general, males, African-Americans, Hispanics, older youth, those with less education, those diagnosed with disruptive disorders or substance use disorders were more likely to offend. Two studies found that, of youth who were receiving mental health services, those who had anxiety disorders were less likely to have criminal justice involvement (Evens & Vander Stoep, 1997; Rosenblatt et al., 2000), as opposed to studies of youth in juvenile detention, which found that youth with anxiety disorders were overrepresented in this population (Teplin, Abram, McClelland, Dulcan, & Mericle, 2002).

One other area of interest is whether dual involvement is more likely for people who received specialized, intensive out-of-home treatment such as inpatient hospitalization and residential treatment. Only one of the studies of the publicly-funded mental health population included these variables in their analysis. Davis and colleagues (2004) included the number of out-of-home placements and the number of hospitalizations as potential predictors of arrest, but found no relationships. There are no other studies from the United States that examine whether youth who received out-of-home treatment specifically for mental health problems (as distinct from those in out-of-home placements due to child welfare or juvenile justice-related reasons) are more likely to have dual involvement with juvenile justice.

Hence, there are gaps in the existing literature, indicating a need for further work to confirm and extend findings. Only two of the studies predicting dual involvement considered the years of transition into adulthood, a period of heightened risk that needs increased attention. Though research consistently indicates gendered patterns of offending and expression of mental health problems, only two of the studies analyzed genders separately. Finally, none of the studies considered the likely possibility that predictors varied by type of crime. Violent crimes, property crimes, drug crimes, and nuisance crimes, as four examples, are very different expressions of behavior that are likely tied to different antecedents.

The purpose of the current study is to extend past work on the predictors of dual mental health system and justice system involvement for young adults in the mental health population in the following ways: 1) confirm past findings using a new dataset; 2) include the years of transition to adulthood up to age 25; 3) include inpatient hospitalization and residential treatment as possible predictors of criminal charge; 4) conduct analyses stratified by gender; and, 5) conduct analyses separately by type of charge.

This study examines the relationship between receipt of mental health services during the transition to adulthood and criminal charges over the same period of time. Specifically,

1. Do the previously established relationships between the characteristics of people receiving mental health services and their involvement in the justice system replicate in this sample such that:
 - a. Males and African-Americans are more likely to be charged with a crime; and,
 - b. Those diagnosed with conduct disorder or a substance use disorder are more likely to be charged with a crime, and those diagnosed with anxiety disorder are less likely to be charged with a crime.
2. Are those who received residential treatment and/or inpatient hospitalization during the transition to adulthood any more likely to be charged with a crime over the same period of time?
3. What demographic and diagnostic variables are related to specific categories of charges, including violent charges, drug charges, nuisance charges, and property charges?

The current study examines these questions stratifying by gender, because the published literature has consistently revealed that pathways to offending, experiences with the justice system, and expression of mental health problems are influenced by gender (Feld, 2009; Graves et al., 2007; Johansson & Kempf-Leonard, 2009; Ritakallio, Kaltiala Heino, Kivivuori, Luukkaala, & Rimpela, 2006; Teplin et al., 2002; Tracy, Kempf-Leonard, & Abramoske-James, 2009).

Methods

Data Source

This study is a secondary analysis of a subset of existing data that has been described elsewhere (Davis et al., 2007; Davis, Fisher, Gershenson, Grudzinskas, & Banks, in press). The data are from a statewide cohort of people born between 1978 and 1979 who received publicly-funded mental health and case management services through the Massachusetts DMH at some point in 1994, 1995, or 1996, and who had a recorded diagnosis for a mental health disorder ($N = 423$). Participants were selected from 1994 to 1996 because this was considered a period during which this dataset was well maintained, and it allowed a proportionally high number of clients to reach their 25th birthday by the time data were collected.

The data for this study came from the Massachusetts Department of Mental Health (DMH) and the Massachusetts' Criminal Offender Record Information system (CORI) management information systems. In 1994 there was a statewide overhaul and improvement of the system's data recording procedures; hence, this study utilizes DMH data from 1994 through March of 2006, and filters these data to only include information for each individual from ages 16 to 25. The DMH dataset provided data on the participant's gender, birthday, ethnicity, diagnosis, service type, and service date. CORI included data on charges for juveniles and adults, also filtered for this analysis to only contain information from when the person was 16 to 25 years old. These data were from the same time period as the mental health system data, so justice system involvement could have occurred prior to or concurrent with mental health system involvement. Because the mental health system data prior to the 16th birthday is inconsistent, we cannot know whether the individual received mental health or justice system services first. However, since youth were identified through the mental health system, the vast majority of criminal contact that is included in this dataset occurred after initial mental health system involvement. This approach is similar to that taken in prior research (e.g. Davis et al., 2004; Evens & Vander Stoep, 1997; Graves et al., 2007; Rosenblatt et al., 2000).

Variables—The variables from the CORI database were any charge, serious violent charge, drug charge, serious property charge, and nuisance charge. Status offenses were not included. Variables from the DMH database used in this analysis include gender, date and type of services received, DSM-IV diagnoses (American Psychiatric Association, 2000), and date of diagnosis. Service type was categorized into inpatient hospitalization, residential treatment, and non-out-of-home service. In this study, residential treatment consisted of long term placements in group homes, short term crisis placements in group homes, and therapeutic foster care. Inpatient hospitalization included hospitalizations for mental health or substance use treatment. Neither residential treatment nor inpatient hospitalization was court mandated or an official alternative to detention.

Diagnosis was grouped into several categories: 1) mood disorders; 2) a substance use disorder (SUD) excluding nicotine (SUD was always co-occurring with other mental health diagnoses); 3) impulse control disorders; 4) personality disorders; 5) anxiety disorders; 6) developmental disorders; 7) learning disorders; 8) attention deficit disorder and attention deficit hyperactivity disorder; 9) conduct disorder (CD) and oppositional defiant disorder (grouped together as “conduct disorder”); 11) adjustment disorders; and 12) post traumatic stress disorder. Diagnoses were made by clinical staff at mental health service provider agencies as part of billing and record management; hence this data is likely influenced by human biases and subjective interpretations of behavior.

Sample

Participants were eligible for services through DMH if they were under age 19 and they had a diagnosis that affected their functioning in at least two life domains that had lasted, or was expected to last, at least a year (Davis et al., 2007). Descriptive statistics for the sample are depicted in Table 1. Pearson chi-square tests were run in order to emphasize variables on which genders differed. The overall sample was largely white, with nearly equal numbers of males and females. The most common diagnostic category was mood disorders. Approximately half of the sample received out-of-home treatment.

Analysis

Standard data screening and examination preceded analysis. Several bivariate crosstabulations with chi-square tests were run examining the relationship of any charge to the independent variables described above. Variables that were significant at $p < .15$ in the bivariate analyses were included in separate logistic regression models to predict any criminal charge. This assisted in the creation of parsimonious, yet acceptably fitting, models (Hosmer & Lemeshow, 2000). Model building proceeded through an iterative process, beginning with bivariate analyses and continuing through building multivariate logistic regression models, individually removing variables not contributing to the model based on their individual coefficients, the model χ^2 change, and the strength of their influence on coefficients for other variables in the model. Standard diagnostics were performed on the preliminary final model to assess its fit, including the Hosmer-Lemeshow goodness-of-fit measure and the area under the Receiver Operating Characteristic (ROC) curve (Hosmer & Lemeshow, 2000).

Results

As indicated in Table 2, and consistent with past research, males were significantly more likely to be charged overall and for all subtypes of charges. Table 3 indicates the characteristics of males and females who were charged with a crime, compared to males and females who only received mental health services. In general, the within-gender groups were fairly similar to each other. Very few females were diagnosed with a learning disorder, and no males were diagnosed with eating disorders, so these variables were removed from further analyses

respective to gender. Because it is a primary focus of this study, it should be emphasized that residential treatment, inpatient hospitalization, and non-out-of-home treatment were not included in most models due to insignificance at $p > .15$ in the bivariate analyses. In other words, receiving out-of-home treatment was generally not related to being charged with any crime or specific types of crimes. The model for serious property charge is not depicted here because for both genders the best model had a poor fit and poor discrimination, with not a single independent variable significantly related at $p < .05$.

Predicting female dual system involvement

Table 4 depicts four final models predicting female criminal charge. The model predicting any charge for females indicated that females diagnosed with CD had an odds of receiving any charge three times greater than those undiagnosed. Females diagnosed with a SUD had nearly three times the odds of a charge compared to those without this diagnosis. Being diagnosed with a developmental disorder was not statistically significant at $p < .05$, but it did add value to the overall utility of the model. Receiving inpatient hospitalization and residential treatment was not significantly related to being charged with a crime. None of the variables on race and no other diagnostic indicators were significant.

The model predicting being charged with a violent crime indicated that being diagnosed with CD increased the odds of receiving a charge for a violent crime by more than five times, a SUD diagnosis by more than five times, and a developmental disorder by nearly nine times. Receiving inpatient hospitalization and residential treatment was not significantly related to being charged with a violent crime. None of the variables on race and no other diagnostic indicators were significant.

The model predicting being charged with a drug crime indicated that being diagnosed with a SUD increased the odds of receiving a charge for a drug crime by more than three times. Having received inpatient hospitalization treatment decreased the odds by 65%. Receiving residential treatment was not significantly related to being charged with a drug crime. None of the variables on race, and no other diagnostic or service variables were significant.

The model predicting being charged with a nuisance crime indicated that being diagnosed with a SUD increased the odds of receiving a charge for a nuisance crime by more than three times. Being diagnosed with PTSD was not statistically significant at .05, but did improve the overall model. Receiving inpatient hospitalization and residential treatment was not significantly related to being charged with a nuisance crime. No other variables on race or diagnoses were significant.

Predicting male dual system involvement

Table 5 depicts the four final models predicting male criminal charge. The model predicting any charge for males indicated that males diagnosed with impulse control disorders had more than seven times the odds of any offense. Males diagnosed with a SUD had more than three times the odds of any charge. Males diagnosed with CD had nearly three times the odds of any charge. Anxiety disorder was negatively related to any charge, though not at the .05 level, although it did contribute to the fit and discrimination of the model. Receiving inpatient hospitalization or residential treatment was not significantly related to being charged with a crime. No other race or diagnosis variables were significant.

The model predicting violent charge indicated that males diagnosed with impulse control disorders had more than three times the odds of being charged with a violent crime. Males diagnosed with a SUD or CD had more than two times the odds of being charged with a violent crime. ADD/ADHD contributed to the fit and discrimination of the final model, though it was

not significant at the .05 level. Receiving residential treatment or inpatient hospitalization was not significantly related to being charged with a violent crime. No variables on race and no other diagnosis variables were significant.

The model predicting being charged with a drug crime indicated that males diagnosed with a SUD were more than three times as likely to be charged with a drug crime. African-American males had three times greater odds of being charged with a drug crime than all other races in the study. Being diagnosed with a thought disorder decreased the odds of being charged with a drug crime by 63%. Anxiety disorder contributed to the fit and discrimination of the final model and appeared to be related to decreased odds of being charged with a drug crime, though it was not significant at the .05 level. Receiving inpatient hospitalization and residential treatment was not significantly related to being charged with a drug crime. No other diagnosis variables were significant.

The model predicting being charged with a nuisance crime for males indicated that males diagnosed with a SUD had more than twice the odds of being charged with a nuisance crime. Males diagnosed with developmental disorders had odds of being charged with a nuisance crime less than 78% that of males not diagnosed with developmental disorders. No other diagnosis variables were significant. Receiving inpatient hospitalization and residential treatment was not significantly related to being charged with a nuisance crime.

Every model described above revealed borderline acceptable discrimination as indicated by the area under the receiver operating characteristic (AUROC) curve. These statistics are depicted in the tables. More saturated models that were run earlier in the model-building process (not shown) were slightly better at discriminating offenders from non-offenders. However, these models were considered no better fitting in terms of likelihood-change statistics, and the individual variables were often not significant even at the $p < .15$ level. Hence, the final models depicted in Table 1.4 and 1.5 were considered the most parsimonious and useful models possible given this particular data and modeling approach.

Discussion

This study supports and extends prior research on the relationship between receipt of mental health services during the transition to adulthood and criminal charges over the same period of time. This paper is the first analysis of dual involvement in the public mental health and justice system in the United States that accomplishes four goals: 1) follows all individuals from adolescence into young adulthood (16 to 25 years old), the most common offense period, 2) includes inpatient hospitalization and residential treatment as potential predictive factors, 3) stratifies analyses by gender, and 4) predicts subcategories of criminal charges.

For the first research question, this study examined whether previously established predictors of justice system involvement replicated in this sample. The third research question extended this work by asking about specific charges, including violent, drug, nuisance, and property charges. Past research has indicated that, for the population of people receiving mental health services, predictors of any criminal involvement include being male, being African-American, being diagnosed with CD, and using substances or having a SUD, while being diagnosed with anxiety disorder decreased the risk of criminal involvement (Davis et al., 2007; Evens & Vander Stoep, 1997; Graves et al., 2007; Rosenblatt et al., 2000; Scott et al., 2002).

Many of these relationships replicated in this sample. Males were more likely to be charged with a crime overall. Not surprisingly, having been diagnosed with a SUD was significantly related to an increased odds of a drug charge, but it was also related to an increased odds of most types of charges for both genders, including violent charges and nuisance charges. Substance use disorders were unrelated to property charges. Conduct disorder was related to

any charge or to violent charges for both males and females, but surprisingly was not related to drug charges or nuisance charges for either gender, even in bivariate analyses. In bivariate analyses, it was positively related to property charge for males but not females. Substance use and conduct disorder may be related to criminal involvement for many reasons. Clearly, the use of illicit substances is illegal (drug charges), but substance use may be related to aggressive behavior (violent charges) or lapses in judgment and decision-making (nuisance charges). Additionally, being diagnosed with a SUD may be related to severity of disorder; all cases diagnosed with SUD in this dataset were co-occurring with other mental health diagnoses.

Other diagnoses not consistently found to be related to justice system involvement were found to be significant in this study. Impulse control disorders (excluding ADD and ADHD) were significantly predictive of increased odds of any charges and violent charges for males. These disorders were not related to any female offending, and were not related to any other type of charge for males. Developmental disorders were differentially related to offense by gender. For females, developmental disorders strongly increased the odds of violent charge. For males, being diagnosed with a developmental disorder decreased their odds of receiving a nuisance charge. However, these results need to be considered with extreme caution as they may be spurious, as supported by the large confidence intervals for that variable and the consideration that only a few females had a diagnosis of developmental disorder.

In some areas the current work did not fully support existing research. Research on juvenile mental health populations has found that non-whites are more likely to have criminal involvement (Evens & Vander Stoep, 1997; Scott et al., 2002). In the current study, the only significant factor related to race was that male African Americans had increased odds of receiving a drug charge. Additionally, two studies have shown anxiety disorder to be related to decreased odds of offense (Evens & Vander Stoep, 1997; Rosenblatt et al., 2000). In the current study, being diagnosed with an anxiety disorder was not a significant predictor in any of the models at .05, although it did have a nonsignificant negative effect for males in regards to any charge and drug charge.

The second research question asked whether inpatient hospitalization and residential treatment were predictive of dual involvement, and the third research question asked if these were related to specific categories of charges. In this study, youth who received these out-of-home treatments were of no greater risk of being charged with a crime than youth in the general mental health population. Residential treatment was not significantly related to criminal charges for either gender. Inpatient hospitalization was only significantly related to *decreased* odds of being charged with a drug crime for females. Since this may be the first study of this relationship into adulthood it is unclear why these results were found, but there may be several reasons. It may be that the types of problems and events that steer a person into hospitalization or residential treatment are not strongly related to law breaking, and vice-versa. Or, the intensive treatment offered in these settings could be effective at improving functioning post-discharge. Another possible reason for these findings is that the restrictiveness of these settings could act to isolate these individuals from opportunities to offend.

While all of the models in this study were well-calibrated, as indicated by the non-significant Hosmer-Lemeshow statistics and the significant model χ^2 s, they had borderline acceptable predictive discrimination. The AUROC scores ranged from .63 to .71, essentially indicating that the models correctly predicted between 63% and 71% of those who were charged with a crime. While initially this may seem discouraging, it appears to be on par with existing research. Of the studies described earlier that model dual system involvement, only two provided data on discriminatory ability (Evens & Vander Stoep, 1997; Graves, Frabutt, & Shelton, 2007), and the current study's discriminatory ability was roughly equivalent to these studies or better.

The relatively low discriminatory ability in all of these studies is likely due to a number of reasons. In the current study, all predictors were dichotomous, limiting the possible range of predictive factors into categorical groupings. Diagnoses were made by individual therapists rather than standardized instruments, likely contributing to significant error variance. However, this grounds the data in real-world practice, as few public mental health providers have long-term standardized data collection procedures that include standardized, continuous measures of functioning. Therefore, this study may be more useful to policy makers and practitioners than highly controlled studies with elaborate measures. The most likely cause of poor discriminatory ability for the current and past studies, however, is the simple fact that change occurs over time. A broad timeline contributes to weak predictive ability, similar long-term weather prediction, suffering from a long causal or correlational chain.

There are limitations of this dataset similar to any secondary analysis of existing data from management information systems. This study may not be generalizable to other states, as there is great variability in criminal justice policy and mental health services across the United States. The DMH data prior to a 1994 overhaul were inconsistently collected and reported by the myriad of individual service providers throughout the state; hence, the current study does not use any DMH data prior to 1994. Therefore, there is no way of ensuring whether the true “first contact” with the system was through mental health or criminal justice. As described above, five of the six published studies that examine predictors of justice system contact for youth in the mental health system have this same limitation. This dataset only contains information on publicly-funded mental health services. If the client received services through insurance or private pay it would not be contained in this dataset. For these reasons, this study may also not be generalizable to users of privately-funded mental health services.

A number of important implications arise from this study. As indicated by much previous work (e.g. Davis et al., 2007; Graves et al., 2007; Rosenblatt et al., 2000), this research supports the need for cross-system collaboration among various child- and adult- serving agencies, throughout the transition to adulthood. Research indicates that collaboration through the use of multidisciplinary teams and mental health staff placed within juvenile justice facilities is beneficial to reduce recidivism and improve functional outcomes (Henggeler, Cunningham, Pickrel, & Schoenwald, 1996; Lipsey, 1995; Pullmann et al., 2006). These staff can assist justice facilities in assessing the mental health needs of these young adults to better respond to their behaviors (Herz, 2001; Jenson & Potter, 2003; Quist & Matshazi, 2000; Stewart & Trupin, 2003; Thomas, Gourley, & Mele, 2004), and in preparing more appropriate treatment planning during the transition from detention back into the community (Trupin, Turner, Stewart, & Wood, 2004). The current study indicates that cross-system collaboration should not end at the transition to adulthood; rather, an increased emphasis needs to be placed upon collaboration through the years of late adolescence and into early adulthood.

This article also identifies indicators for prevention and intervention. Given the overlap between specific disorders—in particular, CD and SUDs—youth with these problems deserve increased attention, and their families may need support and preparation appropriate to the potential for later criminal involvement. Mental health workers who are well-versed in the juvenile and adult justice systems could perform valuable roles as liaisons. There is little existing research on the potential preventative role for mental health staff with experience and knowledge in juvenile justice. Future researchers and clinicians can use this information to identify those most at risk in order to plan experimentally-based early interventions with those not yet in contact with the justice system. These may be based on several empirically based interventions currently available. Additionally, the disparate findings for males and females builds on the growing understanding that most analyses within the justice system need to be completed separately by gender. The current study contributes to an increased understanding of the common and divergent predictors of dual-system involvement between the genders.

The results presented in this article indicate that youth within the mental health service population are at a high risk of justice system involvement throughout the transition to adulthood. Males and those diagnosed with SUDs or CD are at particular risk, although other diagnoses also seem to indicate risk for particular types of offenses. Within the population of youth with mental health problems in this dataset, those served in out-of-home treatment appear to be at no greater risk of dual system involvement. Continued work on identifying and isolating risk factors for specific types of offenses can assist in identifying those and need and designing programs that provide preventative efforts throughout the transition to adulthood.

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Table 1

Descriptive Statistics

Variable	Female <i>n</i> (%) (<i>n</i> = 211)	Male <i>n</i> (%) (<i>n</i> = 212)	Total <i>n</i> (%) (<i>N</i> = 423)
Race/Ethnicity			
White	167 (79.1)	158 (74.5)	325 (76.8)
African American	17 (8.1)	20 (9.4)	37 (8.8)
Hispanic	13 (6.2)	23 (10.8)	36 (8.5)
Other	14 (6.6)	9 (4.2)	23 (5.4)
Unknown/missing	0 (0)	2 (0.9)	2 (0.5)
Diagnosis 16–25			
Mood disorder ***	176 (83.4)	131 (61.8)	307 (72.6)
PTSD ***	108 (51.2)	48 (22.6)	156 (36.9)
Thought disorder ***	30 (14.2)	74 (34.9)	104 (24.6)
Conduct disorder/ODD **	24 (11.4)	48 (22.6)	72 (17.0)
ADD/ADHD ***	19 (9.0)	53 (25.0)	72 (17.0)
Substance use disorder	36 (17.1)	49 (23.1)	85 (40.2)
Impulse control disorder	11 (5.2)	18 (8.5)	29 (6.9)
Personality disorder *	39 (18.5)	23 (10.8)	62 (14.7)
Anxiety disorder *	12 (5.7)	24 (11.3)	36 (8.5)
Developmental disorder *	10 (4.7)	21 (9.9)	31 (7.3)
Adjustment disorder	13 (6.2)	10 (4.7)	23 (5.4)
Learning disorder *	1 (0.5)	9 (4.2)	10 (2.4)
Eating disorder ***	10 (4.7)	0 (0)	10 (2.4)
Other diagnosis	26 (12.3)	38 (17.9)	64 (15.1)
MH Services received 16–25			
Non-out-of-home only	79 (37.4)	67 (31.6)	146 (34.9)
Residential	99 (46.9)	112 (52.8)	211 (49.9)
Inpatient hospitalization	102 (48.3)	107 (50.5)	209 (49.4)
Residential and Inpatient	69 (32.7)	74 (34.9)	143 (33.8)

Between-gender χ^2 tests:*
 $p < .05$;**
 $p < .01$;***
 $p < .001$

Table 2

Percentage of Males and Females with Charges, 16 to 25 Years of Age

	Female <i>n</i> (%) (<i>n</i> = 211)	Male <i>n</i> (%) (<i>n</i> = 212)	Total <i>n</i> (%) (<i>N</i> = 423)
Any Charge **	97 (46.0)	125 (59.0)	222 (52.5)
Serious Violent Charge ***	42 (19.9)	78 (36.8)	120 (28.4)
Drug Charge *	25 (11.8)	44 (20.8)	69 (16.3)
Serious Property Charge **	47 (22.3)	72 (34.0)	119 (28.1)
Nuisance Charge ***	40 (19.0)	75 (35.4)	115 (27.2)

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

Table 3

Characteristics of those who were Charged with a Crime Versus those not Charged with a Crime, Reported in Percentages

Variable	Females		Males	
	Mental Health Only % (n = 114)	Any Charge % (n = 97)	Mental Health Only % (n = 87)	Any Charge % (n = 125)
Race				
White	80	78	72	76
African American	9	7	8	10
Hispanic	6	6	13	10
Other	5	8	6	3
Diagnosis				
Mood disorder	83	85	60	63
PTSD	48	55	23	22
Thought disorder	16	12	41	30
Conduct disorder/ODD	7	17*	14	28*
ADD/ADHD	11	7	22	27
Substance use disorder	11	24*	14	30*
Impulse control disorder	5	5	2	13*
Personality disorder	19	18	10	11
Anxiety disorder	6	5	17	7*
Developmental disorder	3	7	13	8
Adjustment disorder	6	6	6	4
Learning disorder	1	0	5	4
Eating disorder	7	2	-	-
MH Services 16–25				
Non-out-of-home only	40	35	31	32
Residential	46	49	53	53
Inpatient hospitalization	47	50	51	50
Residential and Inpatient	33	33	35	35

* Within-gender χ^2 significant, $p < .05$

Table 4

Logistic Regression Predicting Female Criminal Charge, Final Models

Variable	Any charge		Violent charge		Drug charge		Nuisance charge	
	OR ^a	95% CI ^b	OR	95% CI	OR	95% CI	OR	95% CI
Conduct dx	3.14*	1.26, 7.86	5.42***	2.02, 14.54				
Substance use dx	2.92**	1.37, 6.23	5.37***	2.27, 12.70	3.61*	1.33, 9.82	3.18**	1.43, 7.11
Developmental dx	2.98	0.73, 12.26	8.79**	2.14, 36.04				
Inpatient hospitalization					0.35*	0.14, 0.90		
Post traumatic stress dx							1.83	.89, 3.78
χ^2 statistic	14.84		28.60		8.99		10.07	
df	3		3		2		2	
-2 log-likelihood	276.3		182.0		144.57		194.85	
Model significance	.002		<.001		.011		.006	
H-L test (χ^2, p)	.023		.033		.005		.379	
Area under ROC (se)	.62 (.04)		.71 (.05)		.66 (.06)		.65 (.05)	

*
 $p < .05$;

**
 $p < .01$;

 $p < .001$

^aOdds Ratio

^bConfidence Interval

Table 5

Logistic Regression Predicting Male Criminal Charge, Final Models

Variable	Any charge		Violent charge		Drug charge		Nuisance charge	
	OR ^a	95% CI ^b	OR	95% CI	OR	95% CI	OR	95% CI
Conduct dx	2.89**	1.36, 6.16	2.24*	1.13, 4.41				
Substance use dx	3.35**	1.58, 7.09	2.33*	1.17, 4.63	3.48***	1.62, 7.47	2.56**	1.32, 4.97
Developmental dx							0.22*	0.49, 0.98
Impulse control dx	7.65**	1.66, 35.3	3.42*	1.21, 9.61				
Anxiety dx	0.42	.17, 1.08			0.15	0.02, 1.15		
ADD/ADHD			1.72	0.88, 3.33				
African-American					3.39*	1.12, 10.3		
Thought disorder					0.37*	0.16, 0.86		
χ^2 statistic	30.41		16.66		22.90		16.00	
df	4		4		4		2	
-2 Log-likelihood	256.63		262.27		193.63		259.49	
Model significance	<.001		.002		<.001		<.001	
H-L test (χ^2, p)	3.74	.44	0.93	.92	0.70	.952	0.01	.999
Area under ROC (se)	.71 (.04)		.67 (.04)		.71 (.04)		.63 (.04)	

* $p < .05$;

** $p < .01$;

*** $p < .001$

^aOdds Ratio

^bConfidence Interval