

5-2016

Arrest or Hospitalization? An Examination of the Relationship Between Psychiatric Symptoms, Traumatic Childhood Experiences, and Socio-Ecological Factors in Forensic Mental Health System Responses to Offender Behavior

Stephanie Mersch

East Tennessee State University

Jill D. Stinson

East Tennessee State University

Megan Quinn

East Tennessee State University

Follow this and additional works at: <https://dc.etsu.edu/honors>



Part of the [Clinical Psychology Commons](#)

Recommended Citation

Mersch, Stephanie; Stinson, Jill D.; and Quinn, Megan, "Arrest or Hospitalization? An Examination of the Relationship Between Psychiatric Symptoms, Traumatic Childhood Experiences, and Socio-Ecological Factors in Forensic Mental Health System Responses to Offender Behavior" (2016). *Undergraduate Honors Theses*. Paper 321. <https://dc.etsu.edu/honors/321>

This Honors Thesis - Open Access is brought to you for free and open access by the Student Works at Digital Commons @ East Tennessee State University. It has been accepted for inclusion in Undergraduate Honors Theses by an authorized administrator of Digital Commons @ East Tennessee State University. For more information, please contact digilib@etsu.edu.

Arrest or Hospitalization? An Examination of the Relationship Between Psychiatric Symptoms,
Traumatic Childhood Experiences, and Socio-Ecological Factors in Forensic Mental Health
System Responses to Offender Behavior

Stephanie Mersch¹, Dr. Jill Stinson¹, and Megan A. Quinn, DrPH²

Keywords: Adverse Childhood Experiences, offenders with mental illness

¹Department of Psychology, College of Arts and Sciences, East Tennessee State University,
Johnson City, Tennessee

²Department of Biostatistics & Epidemiology, College of Public Health, East Tennessee State
University, Johnson City, Tennessee

Abstract

It has been well documented that Adverse Childhood Experiences (ACEs) lead to unfavorable outcomes in later life, especially with regard to health and psychological outcomes. Recent research has demonstrated the impact of early childhood adversity on the onset of aggression and illegal behavior. However, often those with mental illness diagnoses with comorbid behavioral problems exhibit trajectories that include both arrest and hospitalization. While some are arrested for their criminal behavior, others are hospitalized. This begs the question: are those with mental illness and behavioral problems more likely to be arrested, or hospitalized, for their early behavioral problems? In the current study, it was hypothesized that arrest precedes hospitalization for the majority of these offenders, and that specific diagnoses of a mental illness are related to outcome. It was also hypothesized that early exposure to environmental adversity, as measured by the age of earliest ACE and total ACE score, would significantly predict whether offenders were arrested or hospitalized first. Other socio-ecological factors were also studied. The data for this study were gathered from a sample of 182 adult psychiatric inpatients in a secure forensic facility. Data were archival and retrospective in nature. All participants had been hospitalized following acts of violence or aggression, exhibiting a history of both behavioral problems as well as mental illness. A series of logistic and linear regressions were used to examine the relationship between reason for first admission to a psychiatric facility, diagnosis of a mental disorder, and early childhood adversity to clarify whether early problematic behaviors resulted in initial arrest or psychiatric hospitalization. Results indicate that subjects were much more likely to be hospitalized initially than arrested (33.5% arrested first, 66.5% hospitalized first). A diagnosis of impulse control disorder was significantly related to whether initial incident led to arrest or hospitalization ($p=0.030$), while the diagnosis of

ADHD neared significance ($p=0.056$). No significant relationship was found between incidence of initial arrest or hospitalization and age that drug/alcohol abuse began. Other findings and implications for future research will be discussed.

Arrest or Hospitalization? An Examination of the Relationship Between Psychiatric Symptoms,
Traumatic Childhood Experiences, and Socio-Ecological Factors in Forensic Mental Health

System Responses to Offender Behavior

Introduction

Overview

When persons with mental illness commit violent crimes, the high degree of publicity may lead the general public to equate mental illness with a tendency to perpetrate violent crime. However, international research illustrates that only a very small subgroup of those with serious mental illness commit violent crimes. For example, people with serious mental illness (SMI) make up only 5% of the total inmate population, but are responsible for 30-50% of the violent crimes in Denmark and Sweden, two nations known for their low rates of overall violence. This suggests that only a very small subgroup of those with serious mental illness are exceptionally violent. This subgroup is also generally made up of persons who are not taking their prescribed psychotropic medications (Lamb & Weinberger, 2001; Hodgins, 1992; Mednick, Brennan, & Katila, 1996). It is also important to note that while a relationship may exist between violence and mental illness, this link is not causal. In this thesis, I will examine the relationship between onset of serious mental illness and the onset of aggressive and other criminal behavior, including the potential role of early childhood adversity and environmental characteristics that may contribute to that relationship.

Adverse Childhood Experiences

One highly influential study examining the long-term impact of childhood trauma and maltreatment is the Adverse Childhood Experiences (ACE) study. The ACE study began as

collaboration between the Centers for Disease Control and Prevention and Kaiser Permanente's Health Appraisal Clinic in San Diego. The original study was conducted in a primary care setting between 1995 -1997. Many of the research participants were highly educated (with a mean of 14.0 years of education), white (83.9%), and older (mean age 56.1). The survey questions were taken or adapted from various established scales in order to measure seven categories of abuse and household dysfunction in early life (Felitti et al., 1998).

The purpose of this initial study was to determine whether a relationship existed between early childhood experiences of trauma and familial dysfunction and risk factors associated with morbidity and mortality in later life. These risk factors included smoking, obesity, suicide attempts, and alcoholism. The researchers were also interested in relationships between childhood adversity and diseases like cancer, emphysema, and ischemic heart disease.

Felitti et al. (1998) found that more than half of respondents had experienced at least one form of adverse childhood experience. Furthermore, 12.5% experienced four or more adverse experiences (Centers for Disease Control, 2016). The authors also found a dose-response relationship between the number of childhood traumas and health risk behaviors, as well as disease-related outcomes. They additionally found that a clear majority (65%-93%, with a median of 80%) of those who were exposed to at least one adverse childhood experience were also exposed additional adversities, illustrating the importance of studying cumulative effects of ACEs over the lifespan.

The initial disseminations of ACE survey findings have been followed by important outcomes, including providing the momentum for at least one insurance provider to provide funding for a home visitation and intervention program to help prevent occurrence of childhood trauma (Felitti et al., 1998). Not only this, but the multitude of data supporting the relationship

between early childhood adversity and poor health outcomes in adulthood has prompted Washington state to change public policy in an attempt to reduce ACEs and to mitigate their effects (Baglivio, et al., 2014).

ACEs, Mental Illness, and Crime

The ACE survey has since been used to measure other negative outcomes in adulthood. Other research using the ACE survey methodology has expanded beyond outcomes related to physical well-being to include mental health concerns as well as drug addiction and alcoholism, prescription drug use, and trends in psychotropic prescription practices. For example, Anda et al. (2008) found that with increasing ACEs present during youth, there was a higher number of prescription medications prescribed and more serious classes of medications used for as long as seven or eight decades later. Edwards, Holden, Felitti, and Anda (2003) noted that childhood physical and sexual abuse and witnessing of maternal battering (or the combination of these) led to higher mental health scores as measured by the Medical Outcomes Study 36-item Short-Form Health Survey. Anda, Brown et al., (2007) concluded that people who have an ACE score of 5 or more were 2.9 times more likely to need psychotropic prescriptions (95% CI 2.4-3.5). Thus, ACEs are related to and predict a much higher incidence of prescribing medications used to treat mental health concerns in adults. Chapman et al. (2004) described a graded relationship between increasing ACEs and rates of lifetime and recent depressive disorders, up to decades after the occurrence of the initial adverse experience. Here, childhood emotional abuse increased the risk for lifetime depressive disorders with adjusted odds ratios of 2.7 and 2.5 for females and males, respectively (95% CI 2.3-3.2, 1.9-3.2). Anda, Whitfield, and Felitti (2002) found that children who live in alcoholic households are more likely to experience all nine other ACEs, in addition

to emotional abuse. They described a higher risk of alcoholism and depression as the number of ACEs increased.

With regard to rates of criminal activity among persons with serious mental illness, and the potential impact of ACEs, Constantine et al. (2007) retrospectively examined a sample of offenders with serious mental illness and identified three distinct groups: a low arrest chronic class, a high arrest chronic class, and a sporadic arrest class. In the low arrest chronic class, offenders were arrested about one time per year, with arrest rates declining with age. Offenders in the high arrest chronic class were arrested about four times per year, and their arrest rates remained relatively stable with age. The sporadic group was arrested the least, with an average of 0.25 arrests per year. Constantine et al. (2007) added that arrests among offenders with serious mental illness are unusually high and seem to be firmly established by late adolescence, while being highly persistent throughout time. These authors suggested early intervention is the key to preventing crime in this population.

Prins, Skeem, Mauro, and Link (2015) examined individuals with serious mental illness who were under intensive outpatient treatment over a period of just under three years. In this sample, criminogenic factors like arrest history—as well as psychotic symptoms—predicted arrest rates. These variables may be useful for identifying the risk of arrest for those with mental illness. Importantly, this study examined participants with serious mental illness regardless of whether or not they had been involved with the criminal justice system previously, perhaps making their sample more representative of the larger population of persons with mental illness who may be at risk of engaging in illegal behavior. Constantine, Robst, Andel, and Teague (2012) found a modest relationship between outpatient and emergency room/inpatient services and arrests immediately following treatment in persons with serious mental illness. Outpatient

treatment significantly predicted lowered the risk of arrest for a brief period immediately following treatment, while emergency room/inpatient services significantly predicted increased the risk of arrest in the period immediately following treatment. These findings may have implications for immediate system responses to acute periods of mental health need in persons with serious mental illness who are at risk for arrest.

Still, little research exists examining the role of ACEs and other important environmental factors contributing to negative outcomes in adulthood (e.g., gang involvement, poverty) for persons with serious mental illness who engage in criminal behavior. Further, research related to system responses to offenders with serious mental illness suggest that some offenders are diverted to the forensic mental health system rather than the correctional or criminal justice systems following acts of illegal behavior due to the prominence of their mental health symptoms (e.g., Stinson & Becker, 2011).

Study Goals and Hypotheses

The present study aims to expand upon the ACE literature to include the predictive value of ACEs on outcomes for persons with serious mental illness who engage in offending behavior. I expect that certain factors will predict whether someone is arrested or hospitalized upon initial contact with the system, such as obvious psychotic symptoms or foreknowledge of a high ACE score and the need for trauma intervention. The present study aims to identify any links between childhood traumas, psychiatric symptoms, and socio-ecological factors and an offender's initial contact with the system, whether that be arrest or psychiatric hospitalization.

Hypotheses

1. In a forensic mental health sample, for the majority of offenders, their first contact with the system will result in arrest rather than psychiatric hospitalization.

2. The outcome of arrest vs. hospitalization as first contact is dependent on the reason for first psychiatric admission and participant gender. Further, this will be impacted by the current psychiatric diagnosis.
3. Other environmental factors also likely play a role in the result of this initial contact. These environmental factors include ACE score, substance abuse, and socio-ecological characteristics.

Methods

Participants

Participants included 182 adult psychiatric inpatients with varying demographic backgrounds. Participants were housed in a forensic psychiatric facility in the Midwestern United States. Inclusion criteria included residence in the forensic psychiatric facility for a least one year, admission since 2005, and discharge prior to study commencement. A random list of eligible clients was generated by a member of the facility's staff, and three research assistants coded participant files during an eight-month period. Retrospective data were collected from patient charts. All participants had been hospitalized following acts of violence or aggression, exhibiting a history of both behavioral problems as well as mental illness. At the time of discharge, all participants were civilly committed to the facility. Participants range in age from 24 to 74. The sample is comprised of 80.8% males and 19.2% females. A majority of the participants were Caucasian (55.5%), while 40.1% identified as African American (Table 1). The participants had been diagnosed with a range of psychiatric disorders, as is described further in Table 2. Participants had a mean of 3.18 arrests overall and 0.94 violent arrests.

Materials

SPSS version 23 was used to analyze relationships among psychiatric symptoms, traumatic childhood experiences, and socio-ecological factors in forensic mental health responses to offender behavior.

Procedure

All procedures in this study were approved by the Institutional Review Board at East Tennessee State University and the research council of the participating institution and state Department of Mental Health. This thesis project is part of a larger study examining the predictive value of developmental adversity on adult health outcomes. Three trained research assistants collected and coded archival data from a forensic mental health facility in the Midwestern United States over an eight-month period.

The outcome of arrest versus hospitalization was coded with arrested first=0 and hospitalized first=1. This was determined by comparing data on age of first psychiatric admission to the age of first arrest. If the age of first arrest and hospitalization were the same, arrest was assumed to precede hospitalization, as it is difficult to be arrested while simultaneously being hospitalized, but quite likely that someone might be hospitalized following arrest. Descriptive statistics were used to describe the number of participants who were arrest vs. hospitalized first. Gender was coded as: male=0, female=1, and transgender=2. Reason for first admission was coded as: suicide attempt=1, symptoms of psychosis=2, mental health evaluation=3, behavior problem=4, unknown=5.

Next, a logistic regression was run with the independent variables being reason for first admission and gender, while being arrested versus hospitalized first was the dependent variable. The second part of this hypothesis was that current mental health diagnoses may impact whether arrest precedes hospitalization. These diagnoses were assigned by facility psychiatrists using

criteria from the Diagnostic and Statistical Manual of Mental Disorders IV-TR (American Psychiatric Association, 2000), which was the most current edition at the time of diagnosis. Each diagnosis for each participant were coded as no disorder=0, has a disorder=1, with the exception of the personality disorder variables which were coded as: no=0, traits=1, yes=2. A logistic regression was used to determine the relationship of hospitalization vs. arrest to independent variables of current diagnoses which included: mood disorders, anxiety disorders, post-traumatic stress disorder (PTSD), psychotic disorders, ADHD, impulse control disorder, intellectual, cognitive, or developmental disability, sexual disorders, antisocial personality disorder, borderline personality disorder, or other psychiatric disorders.

The final hypothesis was that factors in the environment predict whether arrest precedes hospitalization. For the purposes of the current study, these factors include adverse childhood experiences, socio-economic status, and substance abuse. The total ACE score variable calculated by adding the number of ACE factors present, and was coded by ACE score as 0-10. Earliest ACE variable was found by comparing the age of onset of each ACE and inputting the age of the first known ACE. Parent job level was coded as three variables: mother's primary employment type, father's primary employment type, and other primary caregiver employment type. These variables were each coded as: none=0, unskilled labor=1, skilled labor, some training=2, office or clerical work=3, professional=4. Presence of a history of substance abuse was coded by each type of substance abuse first: alcohol abuse, marijuana abuse, crack or cocaine abuse, meth abuse, speed or stimulant abuse, heroin or other opiate abuse, hallucinogen abuse, prescription drug abuse. Each of these variables was coded as yes=1 and no=0. Logistic regressions were used to examine the contribution of total ACE score, age of first ACE, parent

job level, and presence of substance abuse on the dependent variable of whether arrest or hospitalization occurred first.

Results

Of the 179 participants for whom it was known if arrest or psychiatric hospitalization occurred first, 33.5% were arrested first and 66.5% were hospitalized first. The mean total ACE score was 2.51, with a minimum score of 0 and maximum score of 8. To see a further breakdown of scores, refer to Table 3. Of the 110 participants for whom age of first ACE was identified, the age of first ACE ranges from 0 to 22 years of age, with the mean age being 6.0 and the median age being 3.5.

Logistic regression was used to determine the impact of reason for first psychiatric admission and gender on whether participants were arrested or hospitalized first. The resulting model was not statistically significant, with a p-value of .255.

Next, stepwise logistic regression was used to determine whether a relationship existed between psychiatric diagnosis and occurrence of arrest or hospitalization first. The model was significant at the $p < 0.05$ level, with a Chi-square=18.146, $p=0.000$, and Nagelkerke R Square=.137. One diagnosis exhibited a significant relationship to the dependent variable: impulse control disorder with a p-value of 0.030. An impulse control diagnosis increased the odds of being hospitalized first by almost 3 times. Borderline personality disorder neared significance, and though ADHD was significant in step 1, it was not in the final step ($p=0.036$ in step 1, $p=0.056$ in step 9), which may suggest that some other non-significant factor in the model has an impact on whether or not ADHD is a predictor. See Table 4 for additional information.

Next, a stepwise logistic regression was conducted to determine if a relationship existed between whether a participant was arrested or hospitalized first and history of drug and alcohol

abuse, as well as whether or not participants grew up in a gang neighborhood or were involved in gangs prior to the age of 18. This model was not significant. Whether or not a participant grew up in a gang neighborhood or was involved in a gang prior to the age of 18 had no relationship with whether they were arrested or hospitalized first. When comparing history of various types of drug and alcohol abuse to whether participants were arrested or hospitalized first, only history of alcohol abuse was significantly related. This relationship was significant as the p -value=0.017. Having a history of alcohol abuse cut the likelihood of being hospitalized first in half (OR=.402). History of hallucinogenic drugs neared significance, at p =0.066. Next, a stepwise linear regression was conducted to determine whether a relationship exists between whether a participant was arrested or hospitalized first and mother's type of employment, father's type of employment, and other primary caregiver's type of employment. None of these variables were significant. For more detailed information on these analyses, see the tables.

Discussion

Results indicated that contrary to the first hypothesis, hospitalization more often precedes arrest for the majority of participants, as about two-thirds of the participants were in fact hospitalized first. This may be due to the fact that participants were gathered from a secure mental health facility, thus necessitating that they had all been hospitalized at some point but not necessarily arrested. However, this may also indicate a trend in law enforcement to hospitalize as a first resort as opposed to arresting those with mental illness, which would be consistent with prior research (Stinson & Becker, 2011).

The next hypothesis considered whether being hospitalized or arrested first is related to gender or reason for first admission. The current analysis failed to detect a significant relationship between these variables. This suggests that first responders, medical health

professionals, and members of the criminal justice system respond to persons with mental illness in a fairly consistent way, regardless of gender. This question may warrant further research, however, as the ratio of men to women was disproportionate in comparison with the overall population of persons with serious mental illness.

Next, the relationship between mental health diagnoses and whether participants were arrested or hospitalized first was examined. Results reveal that a diagnosis of ADHD and/or an impulse control disorder is significantly related to the first incidence of arrest or hospitalization. This relationship certainly merits further consideration. It is possible that these two disorders are most difficult to “diagnose” by a layperson, and therefore those with symptoms associated with ADHD or impulse control disorder are more likely to be arrested than hospitalized upon contact with agents of law enforcement. It may also be that those with these particular disorders are more likely to commit different types of offenses, increasing their likelihood of arrest. It is worth noting that the relationship between borderline personality disorder and incidence of first arrest or hospitalization was near significance. This is a disorder often characterized by impulsivity, which may relate to other variables of significance. The link between these two should be further studied. However, perhaps more interesting is that none of the other relationships were significant. For example, it would be expected that if someone were obviously experiencing an acute episode of psychosis, that they may be hospitalized rather than arrested. However, current results indicate that this may not be the case. There are several potential reasons for this. First, the rates of these disorders were extremely high in this sample—much higher than is seen in the general population. Also, all participants had been hospitalized, but not all had been arrested. This may have resulted in non-significant findings in this particular sample.

Next, the relationship between first incidence of hospitalization or arrest and age of first ACE and total ACE score was examined. Interestingly, the regression produced no significant model. This may indicate that presence of childhood adversity does not predict whether or not participants are arrested versus hospitalized, simply that they would have undesirable outcomes. Due to the relatively high prevalence of cumulative ACEs in the current sample, it may also suggest that other factors are involved in predicting the outcome of interest here. Whether or not an ACE was experienced earlier in childhood also did not significantly predict whether a participant was arrested or hospitalized first.

Similarly, no significant relationship was found between initial arrest or hospitalization and parent work type. This could indicate that parent involvement and education level does not have an effect on this type of outcome, though missing data for a number of participants may have limited the ability to detect significant relationships. Finally, the relationship between initial arrest or hospitalization and drug abuse and gang involvement was assessed. While growing up in a gang neighborhood or being in a gang prior to the age of eighteen seemed to have no bearing on arrest or hospitalization, certain types of substance abuse did. History of alcohol abuse was related to first incidence of arrest or hospitalization, predicting a higher incidence of first arrest. It could be that participants were attempting to self-medicate psychiatric symptoms or experiences with ACEs with alcohol, leading to later involvement in crime. This link should certainly be explored in future research. The relationship between a history of hallucinogenic drug abuse and initial arrest or hospitalization neared significance.

The present study was limited in that the sample was drawn from a forensic mental health facility, therefore all of the participants had been hospitalized but not necessarily arrested. The participants also had a rather limited variation in history of hospitalization as well as psychiatric

diagnoses. Therefore, examining other samples of offenders with serious mental illness (SMI) might yield differing results. The participants also had very high ACE scores overall, which may have confounded the ability to differentiate outcomes based upon this variable. For example, in the initial ACE study, only 12.5% of the participants experienced a score of four or higher, while in the present sample 29.1% had a score of four or higher (Felitti, et al., 1998). This limited variability in the history of the sample inhibits predictive power. A larger sample size may also be helpful in acquiring more representative results.

Further research should consider perhaps using a sample from a prison or jail or a combined sample of participants from a forensic mental health facility as well as a prison. This would help determine if initial arrest and hospitalization rates are comparable. The pathways that determine whether an offender with mental illness will be arrested or hospitalized upon initial contact with the criminal justice system due to early problematic behavior should be further explored. These pathways are important in order to design more effective intervention and prevention programs for offenders with serious mental illness.

References

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders, 4th edition, text revision*. Washington, DC: American Psychiatric Press.
- Anda, R. F., Whitfield, C. L., Felitti, V. J., Chapman, D., Edwards, V. J., Dube, S. R., & Williamson, D. F. (2002). Adverse Childhood Experiences, Alcoholic Parents, and Later Risk of Alcoholism and Depression. *PS Psychiatric Services, 53*(8), 1001-1009. doi:10.1176/appi.ps.53.8.1001
- Anda, R. F., Brown, D. W., Felitti, V. J., Dube, S. R., & Giles, H. W. "Adverse Childhood Experiences and Prescription Drug Use in a Cohort Study of Adult HMO Patients." *BMC Public Health 8.1* (2008): 198. Web. 11 Apr. 2016.
- Anda, R. F., Brown, D. W., Felitti, V. J., Bremner, J. D., Dube, S. R., & Giles, W. H. (2007). Adverse Childhood Experiences and Prescribed Psychotropic Medications in Adults. *American Journal of Preventive Medicine, 32*(5), 389-394. doi:10.1016/j.amepre.2007.01.005
- Booth, A. L., & Stinson, J. D. (2015). *Effects of Adverse Childhood Experiences on High Risk Inpatient's Criminal Behavior* (undergraduate honors thesis). East Tennessee State University. Retrieved April 13, 2016, from <http://dc.etsu.edu/honors/289/>
- Centers for Disease Control and Prevention (2016). "About the CDC-Kaiser ACE Study." Centers for Disease Control and Prevention, 08 Mar. 2016. Web. 11 Apr. 2016.
- Chapman, D. P., Whitfield, C. L., Felitti, V. J., Dube, S. R., Edwards, V. J., & Anda, R. F. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders, 82*(2), 217-225. doi:10.1016/j.jad.2003.12.013

- Constantine, R. J., Petrilu, J., Andel, R., Givens, E. M., Becker, M., Robst, J., . . . Howe, A. (2010). Arrest trajectories of adult offenders with a serious mental illness. *Psychology, Public Policy, and Law, 16*(4), 319-339. doi:10.1037/a0020852
- Constantine, R. J., Robst, J., Andel, R., & Teague, G. (2012). The impact of mental health services on arrests of offenders with a serious mental illness. *Law and Human Behavior, 36*(3), 170-176. doi:10.1037/h0093952
- Edwards, V. J., Holden, G. W., Felitti, V. J., & Anda, R. F. (2003). Relationship Between Multiple Forms of Childhood Maltreatment and Adult Mental Health in Community Respondents: Results from the Adverse Childhood Experiences Study. *American Journal of Psychiatry AJP, 160*(8), 1453-1460. doi:10.1176/appi.ajp.160.8.1453
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., . . . Marks, J. S. (1998). Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. *American Journal of Preventive Medicine, 14*(4), 245-258. doi:10.1016/s0749-3797(98)00017-8
- Hodgins, S. (1992). Mental Disorder, Intellectual Deficiency, and Crime. *Arch Gen Psychiatry Archives of General Psychiatry, 49*(6), 476. doi:10.1001/archpsyc.1992.01820060056009
- Lamb, H. R., & Weinberger, L. E. (2001). Persons with severe mental illness in jails and prisons: A review. *New Directions for Mental Health Services, 2001*(90), 29-49. doi:10.1002/yd.23320019005
- Leonard, S., Adler, L. E., Benhammou, K., Berger, R., Breese, C. R., Lee, M. J., . . . Freedman, R. (2001). Smoking and Mental Illness. *Pharmacology Biochemistry and Behavior, 70*(4), 561-570. [http://dx.doi.org/10.1016/S0091-3057\(01\)00677-3](http://dx.doi.org/10.1016/S0091-3057(01)00677-3)

- Miller, B. J., Paschall, III, C. B., & Svendsen, D. P. (2006). Mortality and medical comorbidity among patients with serious mental illness. *Psychiatric Services, 57*, 1482–1487.
doi:10.1176/appi.ps.57.10.1482
- Mednick, S. A., Brennan, P., & Katila, H. (1996, May 4-9): *Mental illness, violence, and fetal neural development*. Paper presented at the annual meeting of: the American Psychiatric Association, New York.
- Prins, S. J., Skeem, J. L., Mauro, C., & Link, B. G. (2015). Criminogenic factors, psychotic symptoms, and incident arrests among people with serious mental illnesses under intensive outpatient treatment. *Law and Human Behavior, 39*(2), 177-188.
doi:10.1037/lhb0000104
- Prochaska, J. J., Fromont, S. C., Delucchi, K., Young-Wolff, K. C., Benowitz, N. L., Hall, S., & ... Hall, S. M. (2014). Multiple risk-behavior profiles of smokers with serious mental illness and motivation for change. *Health Psychology, 33*(12), 1518-1529.
doi:10.1037/a0035164
- Sokal, J., Messias, E., Dickerson, F. B., Kreyenbuhl, J., Brown, C. H., Goldberg, R. W., & Dixon, L. B. (2004). Comorbidity of medical illnesses among adults with serious mental illness who are receiving community psychiatric services. *Journal of Nervous and Mental Disease, 192*, 421–427. doi:10.1097/01.nmd.0000130135.78017.96
- Stinson, J.D., & Becker, J.V. (2011). Sexual offenders with serious mental illness: Prevention, risk, and clinical concerns. *International Journal of Law and Psychiatry, 34* (3), 239-245.

Appendix

Table 1. Race in the Sample

<i>Race</i>	<i>Percent</i>
<i>Caucasian</i>	55.5%
<i>African American</i>	40.1%
<i>Hispanic</i>	2.2%
<i>Asian or Pacific Islander</i>	0.5%
<i>Mixed</i>	1.1%
<i>Other</i>	0.5%

Table 2. Prevalence of Mental Illness in the Sample

<i>Type of Mental Illness</i>	<i>Prevalence, in Percent</i>
<i>Mood Disorders</i>	45.6%
<i>Anxiety Disorders</i>	8.8%
<i>Post-Traumatic Stress Disorder</i>	13.2%
<i>Psychotic Disorders</i>	59.9%
<i>Attention-Deficit Hyperactivity Disorder</i>	9.9%
<i>Impulse Control Disorder</i>	22.7%
<i>Intellectual, Cognitive, or Developmental Disorders</i>	58.0%
<i>Sexual Disorders</i>	6.6%

<i>Anti-Social Personality Disorder</i>	7.7
<i>Borderline Personality Disorder</i>	6.0
<i>Other Diagnoses</i>	6.1

Table 3. ACE Scores in the Sample

<i>ACE Score</i>	Percent of Sample
0	20.3%
1	21.4%
2	16.5%
3	11.0%
4	5.5%
5	9.9%
6	8.8%
7	3.8%
8	1.1%

Table 4. Arrest v. Hospitalization and Mental Illnesses Logistic Regression Analyses, $N=182$

<i>Diagnosis</i>	B	S.E.	Wald	<i>p</i>	OR	95% CI
<i>ADHD</i>	2.021	1.057	3.653	0.056	7.546	[0.950, 59.959]
<i>Impulse</i>	1.066	.490	4.730	0.030	2.904	1.111, 7.589]
<i>BPD</i>	.569	.318	3.195	0.074	1.766	[0.947, 3.296]
<i>Constant</i>	.231	.231	.190	.223	1.260	

Variables entered on step 1: Mood, Anxiety, PTSD, Psychotic, ADHD, Impulse, Intellectual, Sexual, ASPD, BPD, Other diagnoses

Table 5. Arrest v. Hospitalization and ACE Linear Regression Analyses $N=182$

<i>Variable</i>	B	SE (B)	β	<i>t</i>	<i>p</i>	95% CI
<i>Age of first ACE Score</i>	0.005	0.009	0.063	0.572	0.568	[-0.013- 0.023]
<i>Constant</i>	0.552	0.123		4.486	0.000	[0.308- 0.795]
<i>Total ACE Score</i>	0.028	0.020	1.32	1.375	0.172	[-0.012- 0.068]
<i>Constant</i>	0.065	0.080		7.517	0.000	[0.445- 0.764]

Table 6. Arrest v. Hospitalization and Substance Abuse Logistic Regression Analyses, $N=182$

	B	S.E.	Wald	<i>p</i>	OR	95% CI
<i>Alcohol</i>	-0.912	0.372	6.029	0.014	.402	[0.194- 0.832]

<i>Constant</i>	1.253	0.303	17.089	.000	3.500	
-----------------	-------	-------	--------	------	-------	--

Variables entered on step 1: *Alcohol, Marijuana, Cocaine, Meth, Speed, Heroin, Inhalants, Prescriptions, Smoker*

Table 7. Arrest v. Hospitalization and Parent Employment Logistic Regression Analyses, *N*=182

	B	S.E.	Wald	<i>p</i>	OR	95% CI
<i>Mom's Employment</i>	1.115	0.983	1.286	0.257	3.039	[0.444-20.951]
<i>Dad's Employment</i>	0.070	0.711	0.010	0.922	1.073	[-.266-4.324]
<i>Other Caregiver's Employment</i>	-1.071	0.909	1.390	0.238	0.343	[0.058-2.033]
<i>Constant</i>	-0.639	1.983	0.104	0.747	0.528	

Table 8. Arrest v. Hospitalization and Gang Involvement/Neighborhood Logistic Regression Analysis, *N*=182

	B	S.E.	Wald	<i>p</i>	OR	95% CI
<i>Gang Neighborhood</i>	-0.097	0.760	0.016	0.898	.907	[0.204-4.024]
<i>Gang Involvement prior to age 18</i>	-0.617	1.026	0.361	0.548	0.540	[0.072-4.034]
<i>Constant</i>	0.698	0.179	15.217	0.000	2.009	

Figure 1. ACE Score Survey

Finding Your ACE Score**While you were growing up, during your first 18 years of life:**

1. Did a parent or other adult in the household **often or very often** Swear at you, insult you, put you down, or humiliate you?

or
Act in a way that made you afraid that you might be physically hurt?
Yes No If yes enter 1
2. Did a parent or other adult in the household **often or very often** Push, grab, slap, or throw something at you?

or
Ever hit you so hard that you had marks or were injured?
Yes No If yes enter 1
3. Did an adult or person at least 5 years older than you **ever** Touch or fondle you or have you touch their body in a sexual way?

or
Attempt or actually have oral, anal, or vaginal intercourse with you?
Yes No If yes enter 1
4. Did you **often or very often** feel that No one in your family loved you or thought you were important or special?

or
Your family didn't look out for each other, feel close to each other, or support each other?
Yes No If yes enter 1
5. Did you **often or very often** feel that... You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?

or
Your parents were too drunk or high to take care of you or take you to the doctor if you needed it? Yes No If yes enter 1
6. Were your parents **ever** separated or divorced? Yes No If yes enter 1
7. Was your mother or stepmother: **Often or very often** pushed, grabbed, slapped, or had something thrown at her?

or **Sometimes, often, or very often** kicked, bitten, hit with a fist, or hit with something hard?
or **Ever** repeatedly hit at least a few minutes or threatened with a gun or knife?
Yes No If yes enter 1
8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs? Yes No If yes enter 1
9. Was a household member depressed or mentally ill, or did a household member attempt suicide? Yes No If yes enter 1
10. Did a household member go to prison? Yes No If yes enter 1

Now add up your "Yes" answers: _____ This is your ACE Score.