

Perceptions of Recidivism Among Incarcerated Youth: The Relationship Between Exposure to Childhood Trauma, Mental Health Status, and the Protective Effect of Mental Health Services in Juvenile Justice Settings

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Abstract: Research suggests that youth involved in the juvenile justice system have trauma histories that are two times higher than youth in the general population. Juvenile justice-involved youth also have high rates of mental health symptoms. Fewer studies have examined how trauma links to mental health symptoms among youth offenders, and even less research focuses on how mental health status and service delivery can impact their perceived likelihood for success. This study examines the effects of mental health screening and service delivery on perceived future criminal justice interactions—arrest and incarceration—among adjudicated youth ($n=7,073$) housed in correctional facilities. Secondary data were used to examine trauma histories, mental health needs, and mental health screening and service delivery. Significant relationships between traumatic events and mental health problems were found, along with relationships between mental health problems and mental health screening and service delivery. Most interestingly, results pointed to the strong inverse relationship between mental health service delivery and youth's perceived likelihood for recidivism. These findings show the promise of juvenile justice systems appropriately responding to the mental health concerns of youth.

Keywords: Trauma, mental health services, juvenile justice, incarceration, youth

Trauma exposure, violence, and victimization are common experiences among youth. Estimates of a national sample of youth in the general population suggest that more than half of all youth have experienced childhood traumatic events and half of those youth experience multiple traumatic events (McLaughlin et al., 2012). A traumatic event “is one that threatens injury, death, or the physical integrity of self or others and also causes horror, terror, or helplessness at the time it occurs” (APA Presidential Task Force on Posttraumatic Stress Disorder and Trauma in Children and Adolescents, 2008, p. 2). Examples of childhood traumatic events include early life victimization such as sexual, physical, or emotional abuse (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Finkelhor, Ormrod, Turner, & Hamby, 2005; Ford, Chapman, Mack, & Pearson, 2006).

While traumatic experiences can lead to a host of negative emotional, behavioral, and psychological outcomes (McGloin & Widom, 2001), the cycle of violence theory (Smith & Thornberry, 1995; Widom, 1992) and ensuing research (Becker & Kerig, 2011; Bennett & Kerig, 2014; Evans & Burton, 2013; Kerig & Bennett, 2013) suggest that youth exposed to early trauma are at an increased risk for delinquency and involvement in the criminal justice system. In epidemiological reports, juvenile justice involved youth have trauma

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histories that are 2 to 3 times higher than youth in the general population (Coleman, 2005; Coleman & Stewart, 2010; Ford, Chapman, Connor, & Cruise, 2012). Two independent studies revealed analogous rates of elevated trauma among detained youth relative to general population youth; approximately 90% of the detained youth reported a history with at least one traumatic event (Abram et al., 2004). Specifically, 35% of detained youth indicated at least one experience of physical assault (Ford, Hawke, & Chapman, 2010). More recent research supports and expands upon the prevalence data to suggest juvenile justice youth have histories of poly-victimization and complex trauma (Ford et al., 2012; Ford, Grasso, Hawke, & Chapman, 2013).

Exposure to traumatic events in childhood may also be linked to mental health symptomatology. Trauma accounts for 45% of mental health disorders starting in childhood, 32% mental health disorders starting in adolescence, 29% of mental health disorders starting in early adulthood, and 26% in mid-later adulthood (Green et al., 2010). Furthermore, there are disproportionately high rates of mental health symptoms among youth involved in the juvenile justice system; approximately 50-70% of these youth have a diagnosable mental health condition (Skowrya & Coccozza, 2006) relative to approximately 40% of the general youth population who meet diagnostic criteria at some point in childhood and 20% who have a severe mental health condition (Merikangas et al., 2011).

The relationship between trauma and juvenile justice involvement, therefore, may be partially explained by associated mental health symptomatology (Kerig, 2012; Kerig, Ward, Vanderzee, & Moeddel, 2008). Research has widely acknowledged the effects of early physical, sexual, and emotional abuse on various mental health conditions including anxiety, depression, suicidal ideation, post-traumatic stress disorder (PTSD), and anger (Bolger & Patterson, 2001; Green et al., 2010; Hazen, Connelly, Roesch, Hough, & Landsverk, 2009; Higgins & McCabe, 2003; Martin, Bergen, Richardson, Roeger, & Allison, 2004; Runyon & Kenny, 2002). There is even a documented association between longer duration and frequency of traumatic events and co-occurring mental health disorders (Sabri, 2011). Given the disproportionately high rates of mental health problems among youth involved in the juvenile justice system, there are concerns that external or internal manifestations of mental health symptoms within facilities can lengthen stays leading to suicide attempts, and even pose greater danger to others (U. S. House of Representatives Committee on Government Reform, 2004, 2005). Furthermore, with early identification and screening, mental health symptoms can be treated at juvenile justice entry (Burke, Mulvey, & Schubert, 2015). Left untreated, however, mental health conditions can also create re-integration and rehabilitative challenges (Teplin, Abram, McClelland, Dulcan, & Mericle, 2002).

There is a dearth of research on the relationship between trauma and mental health symptoms among youth involved in the juvenile justice system, and how screening for mental health and mental health service delivery can impact youth's perceived likelihood for success. Using a nationally representative sample of youth housed in correctional facilities, this study endeavors to (1) test the relationship between traumatic events and mental health symptoms, (2) test the effects of traumatic events and mental health symptoms on perceived likelihood for recidivism, and (3) test how the introduction of

mental health screening and service delivery can influence youth's perceptions of recidivism.

Literature Review

Although trauma exposure is associated with juvenile justice involvement (Abram et al., 2004; Ko et al., 2008), the system has historically ignored trauma or mental health symptomatology in service delivery (Donisch, Bray, & Gewirtz, 2016). To effectively address the needs and improve outcomes for youth in juvenile justice systems, it is essential to recognize, assess, and provide treatment for trauma symptoms (Ko et al., 2008). Recently, there has been noteworthy attention paid towards standardizing trauma-informed care models in various child service settings including juvenile justice (Donisch et al., 2016; Ko et al., 2008).

Trauma-informed care is conceptualized as an organizational change process based on principles intended to promote healing and reduce the risk of re-traumatization for vulnerable individuals including those in correctional facilities or under correctional supervision (Wolf, Green, Nochajski, Mendel, Kusmaul, 2013). Although there is some debate around the definitions of trauma-informed care, some common elements of trauma-informed or specific care include screening for trauma exposure, assessment of trauma impact, and increasing access to mental health treatment (Berliner & Kolko, 2016). Screening, assessment, and treatment are characteristics of broader behavioral health service provision (Sacks, Ries, & Ziendonis, 2005), and can address the underlying mental health needs associated with exposure to early childhood trauma (Cohen, Mannarino, & Deblinger, 2006). It may be less demanding or complex to target trauma as an external experience rather than the multiple residual and associated effects of mental health problems; trauma-based interventions largely fall under the broader category of mental health interventions. As such, to overcome trauma reminders, events, and to avoid re-traumatization, cognitive behavioral techniques and narrative dyadic therapies, such as trauma-focused cognitive behavioral therapy, are employed (Cohen et al., 2006).

There is substantial variation in the rate and manner in which juvenile justice facilities systematically screen youth for mental health problems. A meta-analysis of prevalence of mental health conditions among youth in correctional facilities noted great variability in the instruments used, inter-rater reliabilities, and what constituted a mental health disorder (Fazel, Doll, & Långström, 2008). For example, some facilities may use clinical arbitration while others used mental health screening tools, and still yet, others may use diagnostic criteria. Some examples of tools include the Diagnostic and Statistical Manual of Mental Disorders (DSM-V; American Psychiatric Association, 2013) the Massachusetts Youth Screening Inventory (MAYSI; Grisso, Vincent, & Seagrave, 2005), or the Diagnostic Interview Schedule for Children - DISC (Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). Furthermore, there are disparate ways these instruments are administered to youth with some being interview and others are self-report (Fazel et al., 2008). Furthermore, this meta-analysis did not include youth who were screened for mental health problems at entry into juvenile justice settings, nor did it link the mental health screening with early experiences of traumatic events. As such, there may be an advantage to considering nationally representative datasets that gather data on rates of screening across juvenile

justice settings.

Mental health service delivery in juvenile correctional facilities is inconsistent at best; some facilities may deliver services, some facilities may not have specialized staff or mental health professionals adequately trained to treat mental health symptoms (Maschi, Hatcher, Schwalbe, & Rosato, 2008; Swank & Gagnon, 2016). The juvenile justice system relative to the education or child welfare systems provides very little mental health resources and support to youth (Farmer, Burns, Phillips, Angold, & Costello, 2003). Research has also qualitatively identified inconsistencies in the delivery of trauma-informed mental health care within the juvenile justice settings (Donisch et al., 2016). In fact, the philosophies of treatment for youth involved from the juvenile justice system differ greatly from other systems in that the juvenile justice system is largely focused on culpability and community safety (Maschi et al., 2008). Incarcerated youth have been found to have lower engagement in mental health services relative to other populations of youth with similar mental health needs (Liebenberg & Ungar, 2014; Pumariega et al., 1999).

Nevertheless, mental health treatments delivered in juvenile justice settings can be associated with positive outcomes including reduced mental health symptoms, PTSD, and reductions in recidivism. For example, correctional mental health treatment has been linked to reductions in suicidal ideation, emotional disturbances, and anger (Kaslow & Thompson, 1998; Kendall, Reber, McLeer, Epps, & Ronan, 1990; Underwood & Washington, 2016). Several randomized studies found trauma-focused cognitive behavioral interventions in juvenile justice facilities improved PTSD and depression symptoms among adjudicated youth (Cohen et al., 2016; Ford, Kerig, Desai, & Feirman, 2016). Cognitive behavioral interventions offered in juvenile correctional facilities have also been connected to decreased recidivism (Dowden & Andrews, 1999; Lipsey, 1999; Lowenkamp, Makarios, Latessa, Lemke, & Smith, 2010).

Recidivism can be operationalized in many ways, and official record data designating a new arrest or conviction is typically the most common (Lowenkamp, Latessa, & Smith, 2006; Lowenkamp et al., 2010). However, research studies have infrequently considered prospective perceptions of youth's future involvement with the criminal justice system. Youths' self-conceptions are powerful indicators of behavioral change. These are narratives that can link to one's core self-representation and are largely self- or socially constructed, rooted in internal or external messages (Bandura, 1986). These self-representations are based on what the individual believes are facts or truths about themselves, their abilities, and subsequent behavioral change (Wallis & Poulton, 2001). Indeed, cognitive behavioral theorists have argued there is a substantial link between self-perception and behavior (Bandura, 1986; Wallis & Poulton, 2001). So, it may be imperative to understand a youth's perception in an effort to accurately assess behavioral changes; yet, very little research has explored the relationship between trauma incidents, mental health problems, and mental health service screening and service delivery on the perceptions of youths' likelihood for recidivism. Recognizing how mental health can influence youth's convictions towards behavioral change, and perhaps trauma can skew those beliefs, this study seeks to explore how perceptions of recidivism are influenced by mental health, traumatic events, and mental health screening and service delivery.

Current Study

The current study draws from nationally representative data on pre-and post-adjudicated youth ($N=7073$) that are housed in correctional facilities. We examined whether mental health screening and service delivery reduced perceived future interactions -- arrest and incarceration-- with the juvenile justice system. We proposed two hypotheses: a) youth with early exposure to trauma and current mental health problems will indicate increased likelihood for future interactions with the juvenile justice system, and b) youth who receive mental health screening and receive mental health services within correctional facilities will indicate reduced likelihood for future interactions with the juvenile justice system.

Method

Sample and Procedures

This study analyzed data from the Survey of Youth in Residential Placement (SYRP) that was developed and funded by the Office of Juvenile Justice and Delinquency Prevention (Sedlak, 2003). The SYRP is an anonymous youth self-report survey taken by pre-and post-adjudication youth aged 10-20 living in juvenile correctional facilities. The survey captures information on youth's criminal history, early traumatic experiences, and experiences in the facility. It is a nationally representative survey that used a probability proportional-to-size sample design, pooled from the Census of Juveniles in Residential Placement (CJRP) and the Juvenile Residential Facility Census (JRFC). A total of 290 facilities were selected, but 71% of those facilities participated (204). Of the eligible 9,495 youth, 74.5% or 7,073 youth participated in the survey (Sedlak & McPherson, 2010). Some youth did not participate for various reasons including failure to obtain parental consent or unwillingness to participate (Sedlak & McPherson, 2010).

Surveys were completed between March and June of 2003 and were administered on computers using an audio-assisted self-interview (ACASI) methodology. Weights have been assigned to the data and design effects were used to adjust for the nested structure of the data and youth and facility non-response rates. These methods included weight trimming, final weighting adjustments, and sampling variance calculations via jackknife replication. Once data were secure with minimal risk for participant detection, survey responses were made available to the public. The overall sample ($n=7,073$) averaged 16.5 years of age ($SD=1.5$), were primarily male ($n=5,378$; 76.0%), with slightly more Hispanic youth ($n=2,368$; 33.5%) than Black youth ($n=2,068$; 29.2%) or White youth ($n=2,005$; 28.3%).

The data have been distributed through the Inter-University Consortium for Political and Social Research (ICPSR) at the University of Michigan. Access to the data was granted through approvals from the University Institutional Review Board and the National Archive of Criminal Justice Data (NACJD) through the ICPSR Data Access Request System (IDARS).

Measures

Dependent variables. Two scaled dependent variables were *likelihood for future arrest* and *likelihood for future incarceration*. The youth were required to respond to two independent items “In the future, how likely do you think it is that you will be arrested?” and “In the future, how likely do you think it is that you will be locked up?” Responses ranged from 1= *Definitely will not* to 4= *Definitely will*. On average, youth reported they will probably be arrested in the future ($M=3.20$; $SD=1.22$) and reported future incarceration between probably and definitely ($M=3.80$; $SD=1.08$).

Independent variables. Exploratory factor analyses were run to determine the factorability of items in generate composite scales that were used as independent variables for this study. There were several independent variables of interest that included youth mental health status (e.g., emotional disturbances, suicidal ideation, and anger), trauma incidents, mental health screening, and mental health service delivery.

Youth mental health status. Various items related to youth’s mental health status were used in this in study. The SYRP included select questions on mental health status that were derived partially from the Massachusetts Youth Screening Instrument (MAYSI; Grisso & Barnum, 2006; Grisso, Barnum, Fletcher, Cauffman, & Peuschold, 2001; Sedlak & McPherson, 2010). Because all items were not included in the SYRP measure, Exploratory Factor analysis was conducted using principle axis factoring and promax rotation to determine the factorability of the set of items and how many factors loaded under each construct. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was .915 indicating there were high correlations among variables caused by a common factor. The eigenvalues (>1) indicated a three-factor solution, suggesting *suicidal ideation*, *anger*, and *emotional disturbances* were separate constructs. The communalities, or the percentage of variance explained was acceptable (ranging from .340 to .830), the factor loadings were high, and the scale reliabilities were good (see Table 1 for factor loadings and alpha scores). The mental health questions were prefaced with, “In the past few months, have you...” Example items included “Wished you were dead”, “Felt angry a lot”, and “Had bad thoughts or dreams”. The binary responses (0=*No*; 1=*Yes*) were cumulated for each item to create an overall score for each factor.

Trauma incidents. The SYRP included select questions on early life trauma events that were not derived from a standardized or validated instrument. As such, Exploratory Factor analysis was also conducted using principle axis factoring and promax rotation to determine the factorability of a set of early life victimization items. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was .924 indicating there were high correlations among the variables caused by a common factor. The eigenvalues (>1) indicated a one-factor solution, suggesting all items loaded on one common factor labeled *Trauma Incidents*. This latent construct consisted of three disparate forms of trauma incidents (*physical*, *sexual or forced sexual*, or *emotional*). An example item was, “Were you physically abused when you were growing up?” The binary responses (0=*No*; 1=*Yes*) were combined to form a composite with a score ranging from 0 to 3 (0=*none*; 1=*1 type*; 2= 2 types; 3=3 types). The alpha for this scale was good ($\alpha=.748$).

Mental health screening and mental health service delivery. Mental health screening was a variable that was based on facility administrators' answers to the 2002 Juvenile Residential Facility Census questions that asked, "Are all young persons evaluated or appraised by a mental health professional inside the facility?" The response items were (0=No; 1=Yes). Mental health service delivery was linked directly to the preceding mental health status questions. It consisted of one item that asked youth, "Since you have been in this facility, have you received counseling to help you deal with any of your feelings and emotions?" The response items were (0=No; 1=Yes).

Control variables. Controls included *gender*, *race/ethnicity*, *age*, and *program type*. Gender was dummy coded to indicate male or female (0= *Female*; 1= *Male*). Youth's race/ethnicity was measured in five categories (1= *Black*; 2= *Any Hispanic*; 3= *American Indian/Alaska Native/Asian/Native Hawaiian/Other*; 4= *White*; 5= *Two or More Groups (Non-Hispanic)*). Two different race dummy variables including *Black* (0= *Else*; 1= *Yes*) and *Hispanic* (0= *Else*; 1= *Yes*) were created to better understand the relative influence of each race. These variables were chosen because they represented the majority of the youth in the sample. Age was a continuous variable of the number of years old at the time the survey was administered. The final control variable was *program type* and was measured in five categories (1= *Detention Unit*; 2= *Correctional Unit*; 3= *Community-based Unit*; 4= *Camps*; 5= *Residential Treatment Unit*). This variable was dummy coded to reflect a correctional or detention setting (0= *Else*; 1= *Correctional or detention*). The variables' frequencies and distributions, and relative factor loadings provided in Tables 1a and 1b.

Table 1a. *Sample Characteristics and Factor Loadings*

	Endorsed n (%)	Factor Loadings
Trauma Incidents ($\alpha=.748$)		
Youth was physically abused when growing up	2548 (36%)	0.733
Youth experienced emotional abuse when growing up	2217 (31.3%)	0.721
Youth experienced sexual abuse/ forced sex when growing up	1030 (14.6%)	0.501
Suicidal Ideation ($\alpha=.879$)		
Thought about killing self	1113 (15.7%)	0.951
Thought about hurting self	1242 (17.6%)	0.841
Life is not worth living	1950 (27.6%)	0.674
Wished I was dead	1519 (21.5%)	0.845
Anger ($\alpha=.753$)		
Temper	4327 (61.2%)	0.746
Easily upset	4938 (69.8%)	0.704
Often angry	4396 (62.2%)	0.729
Emotional Disturbances ($\alpha=.681$)		
Nightmares	1384 (19.6%)	0.565
Lonely	3851 (54.4%)	0.57
Non-fun friends	2422 (34.2%)	0.47
Bad thoughts	2473 (35%)	0.625
Nervous or worried feelings	3800 (53.7%)	0.517
Therapeutic services for mental health problems	3544 (50.1%)	
Screening by mental health professional	3129 (44.2%)	

Table 1b. *Sample Characteristics*

Controls	n(%)
Gender	
Male	5378 (76%)
Race	
White	1951 (27.6%)
Black or African American	2026 (28.6%)
Any Hispanic	2308 (32.6%)
American Indian/Alaska Native/ Asian/ Native Hawaiian/ Other	197 (2.8%)
Two or More Groups (Non-Hispanic)	421 (6%)
Program Type	
Detention Unit	2061 (29.1%)
Correctional Unit	2806 (39.7%)
Community-based Unit	768 (10.9%)
Camps	753 (10.6%)
Residential Treatment Unit	685 (9.7%)
	Mean (SD)
Age	16.2 (1.57)

Analyses

Complex survey methods were used to analyze the data using Stata 13.1 (StataCorp, 2013). Two types of sampling weights were used in the analysis. The final youth weight (FYWT) was used due to the complex sampling design in the SYRP survey, while the 74 replicate weights (R_FYWT1 to R_FYWT74) generated in the SYRP database were used in the variance estimation methods. Specifically, for our analyses, a balanced repeated replicate (BRR) variance estimator was used to generate standard errors used in the development of *p*-values and confidence intervals. BRR is a variance estimation technique used with complex designs with two primary sampling units (facility and youth) (McCarthy, 1996). It provides reasonable variance and standard error estimations that would otherwise be artificially inflated. The authors of the original project (see: Sedlak et al., 2012) require the use of survey weights for all analyses to account for nesting of youth within facilities and oversampling of females and Hispanic youth. We ran bivariate linear regressions to test the first hypothesis; there is a statistically significant positive relationship between trauma incidents and mental health problems among incarcerated youth. Then, we ran bivariate logistic regressions to test the relationships between mental health problems and mental health screening and service delivery. Next, we ran two stepwise linear regressions with the goal of testing the first hypothesis and then adding therapeutic services in the model to determine its mitigating effects on the variables of interest and effects on the outcome.

Results

Relationship between trauma incidents and mental health status. All bivariate regression models revealed a good fitting model with the F-statistic $p < .001$. The results revealed that there was a statistically significant positive relationship between trauma incidents and all three outcomes of mental health status. Youth with more trauma incidents reported more emotional disturbances ($b = .52$, $p < .001$), more suicidal ideation ($b = .57$,

$p < .001$), and more anger ($b = .28, p < .001$). The results from these analyses are provided in Table 2.

Table 2. *Bivariate Analyses Regressing Trauma Incidents*

Independent Variable: Trauma Incidents					
Outcomes	B	t(SE)	95% CI	Model Fit	R²
Emotional Disturbances	.52*	144.07(.01)	.51-.52	F(1,73)=20756.22	.1041
Suicide	.57*	234.00(.01)	.56-.57	F(1,73)=54755.57	.1712
Anger	.28*	142.09(.01)	.27-.28	F(1,73)=20189.91	.0485

* $p < .001$

Relationship between mental health status and mental health screening and service delivery. All bivariate logistic regression models revealed a good fitting model ($p < .001$). The results revealed that youth with emotional disturbances had a greater likelihood of being screened for mental health ($b = .06, p < .001$) and receiving mental health services ($b = .03, p < .001$). Youth with suicidal ideation had a greater likelihood of mental health screening ($b = .03, p < .001$) and receiving mental health services ($b = .02, p < .001$). Youth with anger had a greater likelihood of being screened for mental health ($b = .06, p < .001$) and a reduced likelihood of receiving mental health services ($b = -.06, p < .001$). The results from these analyses are provided in Table 3.

Table 3. *Bivariate Analyses Regressing Mental Health Problems*

Outcomes	Emotional Disturbances			Suicidal Ideation			Anger		
	B	t (SE)	95% CI	B	t (SE)	95% CI	B	t (SE)	95% CI
MH Screening	.06*	16.20 (.00)	.06- .07	.03*	4.32 (.01)	.01-.04	.06*	18.54 (.00)	.05-.07
MH Service Delivery	.03*	15.81 (.00)	.03- .04	.02*	5.23 (.01)	.01-.02	-.02*	-4.64 (.01)	-.02- -.01

Legend MH= Mental Health, * $p < .001$

Relationship between trauma incidents, mental health status and future interactions with the criminal justice system. The results revealed that youth with more trauma incidents report a greater likelihood of arrest ($b = .24, p < .001$) and incarceration ($b = .13, p < .01$). Nevertheless, youth who report more emotional disturbances ($b = -.22, p < .001$), suicidal ideation ($b = -.12, p < .01$), and anger ($b = -1.20, p < .001$) reported a lower likelihood of future arrest. Youth with more emotional disturbances ($b = -.38, p < .001$) and anger ($b = -1.42, p < .001$) reported a lower likelihood of future incarceration, but youth with greater suicidal ideation reported greater likelihood of future incarceration ($b = .09, p < .001$). The results addressing the second hypothesis are provided in Table 4 and 5.

Table 4. Likelihood of Arrest Hierarchical Linear Regression Model

	<u>Model 1</u>			<u>Model 2</u>		
	B	t (SE)	95% CI	B	t (SE)	95% CI
Age	-.25***	-6.69 (.04)	-.32- .17	-.22***	-6.22 (.04)	-.29- .15
African American	.04	.38 (.12)	-.29- .19	.28**	2.50 (.11)	.50-.06
Hispanic	.02	.80 (.07)	.16- .12	.03	.45 (.07)	.17-.11
Male	.44*	2.46 (.17)	.80-.08	.32	1.82 (.17)	.68-.03
Trauma Incidents	.24***	5.84 (.04)	.16- .33	.30***	7.09 (.04)	.22- .38
Emotional Disturbances	-.22***	-6.77(.03)	-.29- .16	-.18***	-5.44 (-.03)	-.24- .11
Suicide	-.12**	-2.92 (.04)	-.20- .04	-.14**	-3.27 (.04)	-.22- .05
Anger	-1.20***	-33.45 (.04)	-1.27- -1.13	-1.12***	-33.14 (.03)	-1.20- -1.06
Program Type	1.42***	10.27 (.14)	1.14-1.71	1.31***	8.82 (.15)	1.01-1.60
MH Screening	---	---	---	-.29***	-11.91 (.02)	-.34- .24
MH Service Delivery	---	---	---	-1.71***	-17.46 (.09)	-1.90- -1.51
Model Fit	F(9,65)=366.62, <i>p</i> <.001			F(11, 63)=365.79, <i>p</i> <.001		
R-Square	.0048			.0069		

Legend **p*<.05, ***p*<.01, ****p*<.001
MH= Mental Health

Relationship between mental health screening, mental health service delivery and future interactions with the criminal justice system. The results revealed that mental health screening was associated with reported reduced likelihood of future arrest (*b*=-.29, *p*<.001) (Table 4) and incarceration (*b*=-.31, *p*<.001) (Table 5). Furthermore, youth who reported receiving mental health services reported a reduced likelihood of future arrest (*b*=-1.71, *p*<.001) and incarceration (*b*=-1.34, *p*<.001).

Table 5. Likelihood of Incarceration Hierarchical Linear Regression Model

	<u>Model 1</u>			<u>Model 2</u>		
	B	t(SE)	95% CI	B	t(SE)	95% CI
Age	-.07*	-2.20 (.03)	-.14 - .07	-.04	-1.17(.03)	-.10- .03
African American	.60***	4.90 (.12)	.84- .35	.84***	7.39 (.11)	1.06 - .61
Hispanic	.33***	4.73 (.07)	.47- .19	.36***	5.20 (.07)	.50 - .22
Male	.05	.31(.16)	-.37- .27	-.05	.31 (.16)	.27- .37
Trauma Incidents	.13**	3.26(.04)	.05-.22	.19***	4.51 (.04)	.11- .27
Emotional Disturbances	-.38***	-11.34(.03)	-.45- .31	-.34***	-9.84(.03)	-.41- .26
Suicide	.09*	2.26(.04)	.01- .17	.09*	2.18 (.04)	.01- .17
Anger	-1.42***	-40.27 (.04)	-1.49- -1.35	-1.35***	-40.18(.03)	-1.42- -1.29
Program Type	1.68***	12.88(.13)	1.42-1.94	1.68***	12.32 (.14)	1.41-1.96
MH Screening	---	---	---	-.31***	-13.16 (.02)	-.36- .27
MH Service Delivery	---	---	---	-1.34***	-12.86(.10)	-1.50 - -1.13
Model Fit	F(9,65)=476.06, <i>p</i> <.001			F(11, 63)=450.34, <i>p</i> <.001		
R-Square	.71%			.90%		

Legend **p*<.05, ***p*<.01, ****p*<.001
MH= Mental Health

Discussion

The results from this study add to extant research on trauma, mental health, screening, and service delivery among youth involved in the juvenile justice system. This study found significant relationships between trauma incidents and mental health disturbances. This largely coincides with research suggesting that youth with previous trauma histories have

associated mental health problems including anxiety suicidal ideation and anger (Bolger & Patterson, 2001; Hazen et al., 2009; Higgins & McCabe, 2003; Martin et al., 2004; Runyon & Kenny, 2002). While this may not be new information, it is important to contextualize these associations for youth offenders. These findings help isolate some of the reasons underlying disproportionately high levels of mental health problems among juvenile justice involved youth (Fazel et al., 2008; Teplin et al., 2002; Wasserman, McReynolds, Lucas, Fisher, & Santos, 2002).

The results also pointed to the relationships between mental health problems and mental health screening and service delivery. These findings largely suggest that the more mental health problems reported by youth, the more likely they are to receive screening and service delivery, with the exception of the inverse association between anger and service delivery. While these relationships are marginally strong, they generally show the promise of juvenile justice systems appropriately responding to the mental health concerns of youth. It is not surprising that youth who have more anger are less likely to receive mental health services. Perhaps anger or the manifestations through externalizing behavior problems (DeLisi et al., 2009) warrants the use of control or force to mitigate problems (Day, 2002), rather than therapeutic responses; physical or psychological controls are common reactions by juvenile justice staff encountering anger and aggression (Hodge & Yoder, 2017; Mason & Magnan, 1995; Schwalbe & Maschi, 2011) and corresponds closely with the ideologies of juvenile justice – to remediate or control (Maschi et al., 2008).

The findings from this study revealed that trauma incidents were positively associated with perceived likelihood for future arrest and incarceration. This finding is not surprising in light of theory and research indicating substantial links between early exposure to trauma and the propensity for juvenile justice involvement (Coleman, 2005; Coleman & Stewart, 2010; Smith & Thornberry, 1995; Widom, 1992; Widom & Maxfield, 2001). This adds to the extant research on this topic, and informs the wider literature base indicating direct relationships between these two constructs. Yet, there were some surprising findings that revealed associations between mental health and perceived likelihood of recidivism. In most of the models, with the exception of suicidal ideation and likelihood for incarceration having a positive relationship, the results are somewhat antithetical; the more youth report mental health problems, the less likely they are to report interactions with the juvenile justice system. This finding is unexpected, but perhaps can be understood through the lens of social cognitive theory; one's *perceptions* of mental health problems contrast with the realistic implications of the problems on their behavioral outcomes. Scholars have talked about the notion of the social construction of cognition and how one's perception, while considered their "truth" may in all actuality be juxtaposed with reality (Caprara, Vecchione, Barbaranelli, & Alessandri, 2013). In fact, some research has revealed that it may be more common for youth to have "self-serving cognitive distortions" relative to adults that link to antisocial behavior (Wallinius, Johansson, Lardén, Dernevik, 2011, p. 288). Youth with mental health problems may not be aware of how these problems can impact their criminal behavior, and, conceivably, the self-serving distortions could be playing a role in their reports. Another consideration is the role and impact of social desirability on youth offenders that supports a greater tendency to provide socially desirable responses on surveys and risk assessments. Specifically, prior research suggests

that African American males have a greater tendency to provide socially desirable responses, so this could also be a factor with these findings (McCoy, 2011). This finding highlights the necessity to triangulate data sources and examine racial differences in future research.

Most interestingly, this study pointed to the strong inverse relationship between mental health service delivery and youth's perceived likelihood for recidivism. This finding suggests that perhaps even if the mental health symptoms are present, mental health screening and service delivery can lead to changes in self-constructed narratives. Although mental health screening demonstrated moderate effects, it suggests that this can be a coordinating mechanism to link to service delivery and advance rehabilitative efforts (Fazel et al., 2008). The addition of mental health services marginally mitigated the trauma incidents and mental health symptoms, and led to perceived recidivism reduction. The mental health services youth receive can impact the underlying trauma incidents and mental health symptoms, and may be considered helpful towards altering distorted cognitions (Dowden & Andrews, 1999; Lipsey, 1999; Lowenkamp et al., 2010). With more research identifying the promise of juvenile justice therapeutic services (Lowenkamp et al. 2006; Lowenkamp et al., 2010; Wallis & Poulton, 2001), this study may support the use of both screening and mental health service delivery.

Implications

This study reveals findings regarding the association between mental health screening and service delivery and perceptions of recidivism, indicating the necessity to provide mental health services in juvenile justice settings. Further, the high numbers of incarcerated youth who have trauma histories suggests that trauma-informed or trauma-specific services may be warranted. Trauma-informed care may be subsumed under current mental health practices but trauma specific interventions may be more effective and contextually appropriate for this population of youth. There have been several calls to develop systems that identify and treat traumatized youth (Berliner & Kolko, 2016; Crosby, 2016; Ko et al., 2008). Interventions such as trauma-focused CBT have led to improved outcomes for adjudicated teens including reduced depression, PTSD, and recidivism (Cohen et al., 2016).

There is a great need for juvenile justice systems to comprehensively address trauma. This may include a shift from a punitive to a more rehabilitative philosophy (Crosby, 2016). To do this the system must create an organized assessment and intake process that are sensitive to trauma and that avoid re-traumatization, that identify trauma histories through screening, and ensuring that once identified, youth receive appropriate treatment (Crosby, 2016; Ford et al., 2006). Implementing changes may require organizational oversight to ensure quality assurance for practice changes as well as incentives and reinforcement to ensure sustainability of practice changes (Berliner & Kolko, 2016). Because there have been recent changes in the PTSD and other mental health criteria according to the American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders (DSM-V; American Psychiatric Association, 2013) since this data was collected, juvenile justice personnel can be trained on how to diagnose and screen according to the most up-to-date criteria.

Ideally, standardization in mental health practices across juvenile justice systems will be developed to prepare youth for re-entry. Re-allocation of funds to develop appropriate resources related to mental health screening and service delivery is necessary to prepare youth in multiple domains of life. Pursuing educational opportunities and employment can be difficult with unaddressed mental health conditions. Looking at outcomes differently and according to youth's perceptions of success can be the next step in translational research. Behavioral change occurs through mental state transformation. This may be the first step in making determinations of "rehabilitation" for release readiness or during transitional service integration. While not a robust measure of recidivism, it can help us determine the mental statuses of our youth in facilities.

Limitations

There are several limitations that this study must address. For one, this is a secondary dataset, and the authors had no role in the study design or data collection process. The survey data was cross-sectional, and the authors cannot guarantee the time-order sequence of the factors under investigation. Further research should account for this and be designed to longitudinally and prospectively measure these constructs. The findings from this study do not imply causality; rather, they are reflective of associations and relationships between the variables of interest. The survey items were not representative of validated measurement tools, and statistical methods to ensure the validity of the composites were used. Further, mental health screening and service delivery were a somewhat reductive way to measure this complex phenomenon. Mental health treatment was used as a proxy for trauma-informed treatment because there was no assessment of trauma-informed models in this study, and there is a need for a more robust measure. Additionally, the dichotomous (yes/no) response format failed to account for the frequency of the events being measured; all such instances could change the nature of the outcomes we found. Future studies could include additional measures through convergent tools or multiple informants to increase the validity and reliability of the data, thus leading to more nuanced analyses.

Further, this discussion and literature portions of this paper may be more relevant to a more contemporary sample of juvenile justice involved youth, as a significant limitation of this study is the aged data set. The authors acknowledge little can be done regarding the age of the dataset. Also, it can be extremely difficult to collect data on juvenile justice involved youth because of the added complexities surrounding their protections. This study is the only self-report nationally representative sample of incarcerated youth to date that encapsulates measures around trauma and mental health- another difficult concept to study among this group of youth. Lastly, in our attempt to test a basic model by only including race/ethnicity, gender, and age as covariates, we have left out other variables that may also be worth considering, such as perceptions of staff or time in facility. Despite these limitations, these study findings provide some clinical implications. The large sample size allowed us to explore a relatively understudied field of research with high practical relevance.

Conclusion

This study has yielded findings that support the linkages between trauma and mental health and the use of mental health screening and service delivery in juvenile justice settings. There is a need for greater transparency of the programmatic structures among juvenile justice systems, and certainly more robust models of trauma-informed care can be introduced. Mental health screening and services can be a first step in a more comprehensive look at the provision of services offered within juvenile justice settings. While important to maintain public safety and offender accountability, juvenile correctional facilities are also charged with rehabilitating youth. In doing so, we can collectively create solutions that are sensitive to the diverse needs of youth.

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