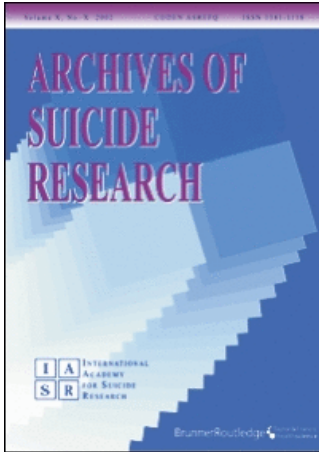


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### Relationships Between Suicide Risk, Traumatic Experiences, and Substance Use Among Juvenile Detainees

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# Relationships Between Suicide Risk, Traumatic Experiences, and Substance Use Among Juvenile Detainees

John F. Chapman and Julian D. Ford

*Youth suicide ideation in juvenile justice settings is a phenomenon with multiple determinants. This article examines relationships among determinants of suicidal ideation utilizing various screening instruments. Consecutive youth admitted to detention in Connecticut (N = 757) completed the Massachusetts Youth Screening Instrument 2 (MAYSI-2), the Suicidal Ideation Questionnaire (SIQ), measures of substance use, and risk and protective factors for violence during intake screening. In bivariate and multivariate analyses (controlling for demographic and MAYSI-2 sub-scale scores), relationships were found between the Traumatic Experiences and Alcohol and Drug Use subscales of the MAYSI-2 and the SIQ. The potential impact of traumatic stress and substance use symptoms in understanding and detecting youths who are at risk for suicide is discussed.*

**Keywords** detention, juveniles, MAYSI-2, suicide, screening, trauma

## INTRODUCTION

The American juvenile justice system is holding increasing numbers of youth. In 2002, there were 2,261,000 juvenile arrests reported (Snyder, 2004). Youth in custody in the United States were calculated at over 134,011 on a given day (Sickmund, 2004). Many enter the juvenile justice system with significant psychiatric needs (Briscoe, 1996). Epidemiological studies indicate that in addition to conduct disorder, affective disorders (10–30% prevalence) occur frequently in juvenile delinquent populations (Abram, Teplin, McClelland et al., 2003;

Teplin, Abram, McClelland et al., 2002; Wierson, Forehand, & Frame, 1992). Almost two in three detained youths (65%) have at least one psychiatric disorder, and most are never detected or treated (Desai, Goulet, Robbins et al., 2006). Children with mental health problems are detained longer on average than other children (U.S. House of Representatives, 2004). Behavioral health screening of children entering juvenile detention now is common practice (American Academy of Child and Adolescent Psychiatry, 2005; Grisso, 2005; Grisso & Underwood, 2004; Metzner, 2003; National

Commission on Correctional Health Care, 2004; Wasserman, Jensen, Ko et al., 2003; Wasserman, McReynolds, Ko et al., 2004).

Suicide is of particular concern for triage in juvenile justice settings because of its surprising prevalence and serious nature. Among youth in the general population in the United States, 16.9% report seriously considering attempting suicide, 13% having made a plan, 8.4% attempting suicide, and 2.3% having made an attempt of such lethality that medical attention was required (Centers for Disease Control and Prevention, 2006). Morgan and Hawton (2004) reported a higher incidence in a U.K. sample of juvenile offenders: 15.6% reported deliberate self harm, and 26.6% reported suicidal ideation.

Hayes (2005) cites suicide rates for children in detention as four times higher than for the general population. One in three suicides in Canada involved young people involved in either juvenile justice or child welfare systems (Farand, Chagnon, Renaud et al., 2004). Nationwide, 69% of juvenile detention facilities report suicide attempts or aggressive behavior in youths waiting for community treatment (U.S. House of Representatives, 2004). Penn and colleagues (2003) found that approximately 12% of a sample of detained youth had attempted suicide, and of these, 60% were violent attempts. Moreover, suicides in correctional facilities are often found to be preventable, and thus determining suicide risk upon admission may save lives (Metzner, 2003). Among juvenile detainees it is estimated that 22% contemplate suicide, 20% plan suicide, 16% attempt, and 8% are injured by attempts (Morris, Harrison, Knox et al., 1995). Delinquent behavior is associated with serious suicidal planning, attempts, and attempts with injury (Thompson, Ho, & Kingree, 2007).

In considering how to detect youths in the juvenile justice system who are at risk for suicide, it is important to keep in mind differences between screening and

assessment. Screening is intended to identify a subset of problems or troubled individuals who require some immediate response, where assessment is an individualized examination of needs, problems, and treatment matching or prognostic factors (Grisso & Underwood, 2004). Therefore, measures of ideation are important, especially since adolescents tend to be better reporters of internalizing disorders including thoughts and gestures of suicide, than parents who are better reporters of externalizing behaviors (Bailey, Doreleijers, & Tarbuck, 2006). However, assessment of ideation or thought alone is not sufficient for thorough screening. In issues of suicide risk, there should be a very limited number of false negatives and screening must be comprehensive (Wasserman, Jensen, Ko et al., 2003). Therefore evaluation of thoughts and behaviors are important and reference to assessment of both ideation and behavior is made in the American Academy of Child and Adolescent Psychiatry Practice Parameters for Treatment of Youth in Juvenile Detention and Correctional Facilities (American Academy of Child and Adolescent Psychiatry, 2005). Supporting this is research suggesting that the identification of suicidal ideation and suicidal behavior among instruments designed to measure each construct is moderate at best. Since results of measurement of each construct are different, use of multiple measures and informants is important (Prinstein, Nock, Spirito, & Grapentine, 2001).

Despite the fact that many young people experience suicidal ideation, few will go on to attempt suicide. Suicidal ideation is an extremely important precursor to suicidal behavior among youth because it "lends itself to the earliest possible detection of suicide potential ..." (Reynolds, 1987, p. 1). Adolescents who attempt suicide report more frequent thoughts about death and suicide than non-suicidal peers, and the likelihood of attempts

increases with severity of suicidal ideation (Overholser & Spirito, 2003). The duration of ideation has been shown to be predictive of suicide attempts (Borges, Angst, Nock et al., 2006; Gould, Greenberg, Velting et al., 2003; Kuo, Gallo, & Tien, 2001). Consequently, measurement of suicidal ideation can serve as an important first step in suicide prevention (Peña & Caine, 2006). Suicidal ideation may be conceived of as a warning sign rather than a risk factor for suicide as defined by the American Association of Suicidology working group convened to differentiate the more proximal warning signs from risk factors (Rudd, Berman, Joiner et al., 2006).

Although suicide is a significant risk among youths in the juvenile justice system due to levels of depression, impulsivity, and drug abuse similar to those reported by cohorts on inpatient psychiatric units (Sanislow, Grilo, Fehon et al., 2003), most correctional suicide prevention training curricula are based on research with non-incarcerated adolescent populations (Hayes, 2005). Detained or incarcerated youths may be subject to conditions that exacerbate the risk of suicide, such as mechanical restraints, use of restraints for discipline, and locked cells (Gallagher & Dobrin, 2006). Therefore, data are needed to guide juvenile detention programs in early identification of youths at risk for suicide in their unique settings, and that is the purpose of this study.

In addition to identifying detained youths who have evident problems with depression, hopelessness, and impulsivity, screening to detect youths at risk for suicide may be enhanced by assessing traumatic stress history, PTSD, and substance abuse. In the present study, consecutively admitted juvenile detainees were screened with the Suicidal Ideation Questionnaire (SIQ) (Reynolds, 1987) and the Massachusetts Youth Screening Instrument, version 2 (MAYSI-2) (Grisso & Barnum, 2000). The present study was

designed to examine the association between the SIQ and MAYSI-2 suicide risk scores with the MAYSI-2 sub-scales for traumatic stress and substance abuse, controlling for depression and anxiety, problems with anger and aggression, severe psychiatric problems, and physical health problems with additional MAYSI-2 sub-scales.

Youth in juvenile detention commonly report histories of trauma exposure and post-traumatic stress symptoms (Abram, Teplin, Charles et al., 2004; Steiner, Garcia, & Matthews, 1997) which may place them at risk for suicidality (Borowsky, Ireland, & Resnick, 2001; Hukkanen Sourander, & Bergroth, 2003; Kaplan, Pelcovitz, Salinger et al., 1997; Laederach, Fischer, Bowen et al., 1999; Lipschitz, Winegar, Nicolaou et al., 1999; Oquendo, Friend, Halberstam et al., 2003). Sexual assault prior to age 16 (Davidson, Hughes, George et al., 1996) and childhood maltreatment (particularly among girls; Roy, 2005; Roy & Janal, 2006) are correlates of attempted suicide and suicidal ideation among youths. Sexual abuse reported by teens is associated with suicide attempts among girls and indirectly (mediated by hopelessness) in boys (Bergen, Martin, Richardson et al., 2003).

Among adults, child maltreatment and current PTSD are separate and synergistic risk factors for suicide attempts (Brodsky, Oquendo, Ellis et al., 2001; Thompson, Kaslow, Lane et al., 2000). Other forms of psychological trauma (e.g., life-threatening accidents, illness, or assaults) also have been shown to be related to suicide risk in women (Ullman & Brecklin, 2002) and adults of both genders (Dube, Anda, Felitti et al., 2001), although another study found that the number and type of traumatic experiences did not contribute to risk of self harm and suicidal behavior in a cohort of women with co-morbid PTSD and substance abuse (Harned, Najavits, & Weiss, 2006). Based on the overall weight of the evidence suggesting that there may be a relationship between suicidality and

a history of traumatic stressors or PTSD, this study investigated that relationship among juvenile detainees.

An additional potential risk factor for suicidality among youths is substance abuse (Putnins, 2005; Sanislow, Grillo, Fehon et al., 2003). Teplin and colleagues (2002) reported prevalence estimates for substance use disorders among detained juveniles of 50.7% for boys and 46.8% for girls. Substance use and risky behaviors such as binge drinking are reported to start earlier among detained youth than others (Morris, Harrison, Knox et al., 1995). Therefore, the second focus of this study was to empirically evaluate the association between substance use problems and suicidal ideation among detained youths.

## METHOD

### Sample and Procedure

Adolescents ( $N = 757$ ) consecutively admitted to juvenile detention centers in Connecticut between 2002 and 2003 were routinely screened for mental health and substance abuse risks within the first 24 hours of admission. Connecticut has three main juvenile detention centers for pre-adjudicated young people located in three of its larger cities, Hartford, New Haven, and Bridgeport. The average capacity at the time this sample was constructed was approximately 42, 38, and 24 respectively. Eight cities in Connecticut contribute 71% of young people to the detention centers indicating a primarily urban population (Chapman, Wasilesky, & Zuccaro, 2000). Youths ranged in age from 10 to 17 years ( $M = 14.27$ ,  $SD = 1.048$ ) and were predominantly male (69%). Almost two in three participants were of color, including African-American (39%) and Hispanic (24%) ethnocultural backgrounds. Eleven children self-identified as Asian-American youth or "other." The remaining participants

were Caucasian (36%). Non-violent charges including breach of peace, violations of orders, and larcenies accounted for 51% of the subject sample. Violent non serious charges such as simple assaults accounted for an additional 12% while non-violent but serious charges (e.g., sale of narcotics) accounted for 10% more. Only 16% of the sample included serious violent crimes such as rape, murder, or assaults with weapons. A negative correlation between severity of crime (from minor violations to non-violent offenses to serious violent offenses) with SIQ score was found in this sample ( $r^2 = -.147$ ,  $p = .008$ ). Youths completed screening measures independently, with assistance from trained detention staff members if requested or if a youth was observed to have difficulty in answering the questions.

Data from screening measures were entered into an SPSS database with all personally identifying information redacted, according to a procedure approved by the Internal Research Review Committee of the Connecticut Judicial Branch's Court Support Services Division and the Institutional Review Board of the University of Connecticut Health Center. In order to ensure the safety of all children in detention, Connecticut's suicide prevention policy requires that any child who detention staff members are concerned may be at risk for self-harm is placed on suicide precaution that can be removed only following evaluation by a licensed mental health professional.

We attempted to match the 757 admissions which were completed on paper and kept in files to a MAYSI-2 data record. The MAYSI-2 record was produced electronically in text format. In a number of cases errors in transcription or assignment of identifying information was incorrect. As a result only 487 of the 757 subject's paper files could be matched to a MAYSI-2 data record in text format.

Another 82 subjects had SIQ scores that could not be distinguished as either SIQ or SIQ-JR, resulting in a final sample  $N = 405$  (54% of the total sample, 83% of the sample matched with MAYSI-2 data) which did not differ significantly in distribution of age, gender, or ethnicity from the sample of 352 other youths admitted to detention.

### Measures

*Massachusetts Youth Screening Instrument – 2 (MAYSI-2; Grisso & Barnum, 2000).* The MAYSI-2 is a 52-item true–false measure that is used in juvenile justice programs nationally and internationally, and has been shown to provide reliable and valid numerical indices of several mental health concerns on factor-analytically derived subscales for depression and anxiety, anger problems, thought disturbance, somatic complaints, alcohol and drug use, suicide risk, and Traumatic Experiences (TE). TE items are as follows:

- 1) Have people talked about you a whole lot when you're not there? (Hypervigilant interpersonal sensitivity).
- 2) Have you ever in your whole life had something very bad or terrifying happen to you? (Bad/terrifying experience).
- 3) Have you ever been badly hurt, or been in danger of getting badly hurt or killed? (Actual or threatened physical harm).
- 4) Have you ever been raped, or been in danger of getting raped? (Sexual assault).
- 5) Have you had a lot of bad thoughts or dreams about a bad or scary event that happened to you? (Post-Traumatic Intrusive Re-experiencing).
- 6) Have you seen someone severely injured or killed (in person—not in

movies or on TV? (Witness Injury/Death).

In the process of identifying the TE subscale of the MAYSI-2, four out of five items loaded high for both boys and girls. One item loaded high on this factor only for boys (MAYSI-2 question number 46, "Have people talked about you a lot when you are not there?"), and another only for girls (MAYSI-2 question number 50 "Have you ever been raped, or in danger of getting raped?"). Therefore different traumatic experiences scales exist for boys and girls (Grisso & Barnum, 2000).

*Suicidal Ideation Questionnaire (SIQ; Reynolds, 1987).* The SIQ is a self-report inventory with two versions, the SIQ-HS (High School form) and the SIQ-JR (Junior form). The SIQ-HS is 30 questions in length and administered to those in grades 10 and higher, while the SIQ-JR has 15 questions and is administered to those in grades seven through nine. SIQ-HS and SIQ-JR scores show strong convergent validity with other measurements of depression in children and adolescents. Based on clinical validation studies, a score of 41 (of a possible 180) is considered the threshold for suicidal risk in the SIQ-HS, while 31 of a possible 90 is the threshold for the SIQ-JR. Predictive validity for suicidal thinking and attempts with the SIQ-JR is found in a study by Huth-Bocks, Kerr, Ivey et al. (2007), who also noted acceptable sensitivity and specificity in published cutoff scores. This supports an earlier finding of good predictive validity for future suicide attempts among a Native American boarding school population (Keane, Dick, Bechtold et al., 1996). The distribution of SIQ scores was highly skewed due to a preponderance of 0 or very low scores. Therefore, the SIQ scores were dichotomized into risk (SIQ HS > 41; SIQ JR > 31); and no risk (SIQ scores below these cutoffs).

## RESULTS

Eighty-eight SIQ-HS forms were identified (22% of the sample), and of these only four, (5%) scored above 41, the suggested cutoff for suicide risk identified in the manual. Of the 317 (78% of the sample) SIQ-JRs, 37 (12%) scored above the cutoff of 31, therefore, a total of 41 SIQ-HS and SIQ-JR forms of the 405 were positive for suicide risk based on cutoff score (10% of the total sample). Respondents completing the SIQ-JR were significantly more likely than those completing the SIQ-HS to be classified as at risk ( $\chi^2 = 3.845, p = .032$ ).

Exposure to potentially traumatic experiences was common, endorsed by 70% of the sample, with almost half (48%) reporting at least two of the four types of potentially traumatic experiences (i.e., something terrible happened, severe injury, rape, or witnessing violence). The data do not permit us to infer how many times or for how long each of these potentially traumatic experiences occurred, so these figures are a low estimate of the true extent to which these youths have been exposed to potentially traumatic events. Girls endorsed more types of potentially traumatic experiences ( $M = 2.92, SD = 2.26$ ) than boys ( $M = 1.50, SD = 2.26$ ) ( $t[324] = -6.133, p = .000$ ).

All MAYSI-2 sub-scale scores significantly correlated with the dichotomized SIQ score and the MAYSI-2 Suicide Ideation sub-scale score. Separate analyses for boys and girls (not reported but available from the first author) confirmed this pattern for each gender as well as for the entire sample. However, the specific TE items were variably related to suicide risk, as assessed by the separate dichotomous SIQ measure (Table 1). Relationships were found between suicide risk as measured by the SIQ and MAYSI-2 Traumatic Experiences sub-scale items for post-traumatic intrusive re-experiencing (#51),

interpersonal sensitivity (#46), and any potentially traumatic event (#48). More robust relationships were found between the MAYSI-2 Suicidal Ideation subscale and MAYSI-2 Traumatic Experiences items (Table 1), although the greater strength of these correlations may be in part due to shared method variance (i.e., the same questionnaire, continuous rather than dichotomous scores).

Finally, multivariate analyses were done to test whether the apparent relationship between traumatic experiences and traumatic stress symptoms with suicide ideation was an artifact of demographic factors, alcohol or drug problems, or potential psychological problems suggested by elevated MAYSI-2 scores. We conducted logistic regression (with the SIQ dichotomous risk score) (Table 2) and linear regression (with the MAYSI-2 Suicide Ideation sub-scale score) analyses. In both analyses, age, gender, ethnocultural background, and all MAYSI-2 sub-scales except Suicidal Ideation were entered as independent variables. The results for both multivariate regression analyses showed that the alcohol and drug use and traumatic experiences sub-scales were significantly associated with suicide risk.

## DISCUSSION

One in ten youths in this juvenile detention population reported suicidal ideation sufficient to qualify them as being at risk. Prinstein and colleagues (2001) concluded that clinical and scientific studies are needed to inform juvenile justice policies and mental health professionals' clinical decision making when treating youths in the juvenile justice system. The findings of the present study provide a preliminary empirical basis for recommending that screening for suicide risk in detained juvenile justice populations should include brief measures that identify youths with

TABLE 1. Relationship of the SIQ with MAYSI-2 Substance Abuse and Trauma Items

	People talk (Boys) MAYSI 46 <i>hypervigilant</i>	Something happened MAYSI 48 <i>bad</i> <i>experience</i>	Raped or danger (girls) MAYSI 50 <i>bad</i> <i>experience</i>	Hurt or danger (boys) MAYSI 50 <i>bad</i> <i>experience</i>	Thoughts or dreams MAYSI 51 <i>re-experience</i>	Seen injured/ killed MAYSI 52 <i>bad</i> <i>experience</i>	SIQ score	MAYSI-2 SI scale
Done something when drunk? MAYSI-2 #10	$X^2 = 5.002$ $p = .018$	$X^2 = 29.656$ $p = .000$	$X^2 = 22.763$ $p = .000$	$X^2 = 22.735$ $p = .000$	$X^2 = 23.939$ $p = .000$	$X^2 = 9.863$ $p = .001$	$X^2 = 14.288$ $p = .001$	$r^2 = .330$ $p = .000$
Parents friends say drink too much? MAYSI-2 #19	$X^2 = 1.130$ $p = .182$	$X^2 = 5.584$ $p = .014$	$X^2 = 4.654$ $p = .031$	$X^2 = 9.484$ $p = .003$	$X^2 = 12.953$ $p = .001$	$X^2 = 6.760$ $p = .008$	$X^2 = 6.783$ $p = .019$	$r^2 = .117$ $p = .035$
Gotten in trouble? MAYSI-2 #23	$X^2 = 1.522$ $p = .131$	$X^2 = 8.911$ $p = .002$	$X^2 = 6.627$ $p = .009$	$X^2 = 7.682$ $p = .005$	$X^2 = 7.495$ $p = .006$	$X^2 = 7.883$ $p = .004$	$X^2 = 5.124$ $p = .025$	$r^2 = .221$ $p = .000$
Fighting? MAYSI-2 #24	$X^2 = 2.704$ $p = .069$	$X^2 = 4.784$ $p = .021$	$X^2 = 2.051$ $p = .119$	$X^2 = 8.113$ $p = .005$	$X^2 = 1.616$ $p = .139$	$X^2 = 8.118$ $p = .004$	$X^2 = 5.354$ $p = .031$	$r^2 = .259$ $p = .000$
Used to feel better? MAYSI-2 #33	$X^2 = 9.665$ $p = .001$	$X^2 = 10.924$ $p = .001$	$X^2 = 14.315$ $p = .000$	$X^2 = 4.342$ $p = .028$	$X^2 = 7.170$ $p = .007$	$X^2 = 6.692$ $p = .007$	$X^2 = 16.153$ $p = .000$	$r^2 = .342$ $p = .000$
Drunk high at school? MAYSI-2 #37	$X^2 = .815$ $p = .213$	$X^2 = 13.895$ $p = .000$	$X^2 = 6.196$ $p = .011$	$X^2 = 11.110$ $p = .001$	$X^2 = 6.122$ $p = .011$	$X^2 = 11.094$ $p = .001$	$X^2 = 2.361$ $p = .097$	$r^2 = .205$ $p = .000$
Alcohol/drugs same time? MAYSI-2 #40	$X^2 = .169$ $p = .378$	$X^2 = 5.277$ $p = .014$	$X^2 = 9.493$ $p = .002$	$X^2 = 15.756$ $p = .000$	$X^2 = 2.632$ $p = .069$	$X^2 = 5.139$ $p = .016$	$X^2 = 1.850$ $p = .127$	$r^2 = .184$ $p = .001$
Couldn't remember? MAYSI-2 #45	$X^2 = 3.188$ $p = .048$	$X^2 = 11.041$ $p = .001$	$X^2 = 8.389$ $p = .004$	$X^2 = 15.056$ $p = .000$	$X^2 = 10.583$ $p = .001$	$X^2 = 4.868$ $p = .019$	$X^2 = 12.347$ $p = .001$	$r^2 = .259$ $p = .000$
SIQ	$X^2 = 15.594$ $p = .000$	$X^2 = 5.093$ $p = .020$	$X^2 = 1.736$ $p = .140$	$X^2 = .056$ $p = .560$	$X^2 = 6.705$ $p = .013$	$X^2 = .367$ $p = .338$	—	$r^2 = .579$ $p = .000$
MAYSI-2 SI Scale	$r^2 = .235$ $p = .000$	$r^2 = .253$ $p = .000$	$r^2 = .326$ $p = .000$	$r^2 = .208$ $p = .007$	$r^2 = .349$ $p = .000$	$r^2 = .089$ $p = .109$	$r^2 = .579$ $p = .000$	—

TABLE 2. Logistic Regression Analysis Predicting Suicide Risk Scores on the SIQ

Model	B	S.E	Wald	df	Sig.	95% Confidence intervals		
						Odds ratio	C.I lower	C.I upper
<b>Age</b>	.623	.264	5.560	1	<b>.018</b>	1.864	1.111	3.128
<b>Gender</b>	-2.022	.531	14.503	1	<b>.000</b>	.132	.047	.375
RaceAfAm	.969	.548	3.123	1	.077	2.636	.900	7.724
RaceHisp	-.463	.728	.405	1	.524	.629	.151	2.619
Angry irritable	.075	.115	.425	1	.515	.515	.860	1.351
<b>Alcohol/drug</b>	.572	.572	8.053	1	<b>.005</b>	1.772	1.194	1.345
Dep/anx	.001	.151	.000	1	.995	1.078	.029	2.630
Somatic	.125	.098	1.612	1	.204	1.001	.745	1.374
TD	-.203	.176	1.328	1	.249	.817	.934	1.153
TE	.295	.144	4.228	1	<b>.040</b>	1.344	1.014	1.781

RaceAfAm = African-American Race, RaceHisp = Hispanic Race, Angry Irritable = MAYSI-2 Angry Irritable Scale; Alcohol/Drug = MAYSI-2 Alcohol and Drug Use Scale; Dep/Anx = MAYSI-2 Depressed Anxious Scale; Somatic = MAYSI-2 Somatic Scale, TD = MAYSI-2 Thought Disturbance Scale; TE = MAYSI-2 Traumatic Experiences Scale

histories of potential psychological trauma and traumatic stress symptoms. These findings are consistent with evidence that traumatic stress disorders are prevalent in the juvenile justice population (Abram, Teplin, Charles et al., 2004) and of particular risk because of their relationship to suicidal behavior (Mazza & Reynolds, 1999; Oquendo, Friend, Halberstam et al., 2003). These traumatic stress factors found in juvenile justice facilities should be therapeutically addressed and researched (Ford, Chapman, Mack et al., 2006).

The finding that a smaller proportion (5% vs. 12%) of older youths (who completed the SIQ-HS (versus younger detainees who completed the SIQ-JR) scored in the risk range is of interest. In Connecticut, the cutoff for juvenile versus adult criminal justice handling ends at an individuals 16th birthday. As a result, few youths in our detention population are in grade 10 or higher (required for the SIQ-HS), and therefore the relatively low prevalence estimate of suicide risk among older youths may not be generalizable to other juvenile justice systems that have a larger number

of older youths. The SIQ-JR has fewer items and a lower cut-off for determining risk than the SIQ-HS, so the difference may be due to the different SIQ forms and the smaller number of youths completing the SIQ-HS than the SIQ-JR. That possibility suggests that further attention may be needed to be paid to cross-validation of the SIQ-HS risk cut-off score in juvenile justice populations in order to avoid Type II (false negative) errors. Our review of the literature found studies where the predictive validity of the SIQ-JR has been established (Huth-Bocks, Kerr, Ivey et al., 2007; Keane, Dick, Bechtold et al., 1996), but not the SIQ-HS form. However, the average per-item score on the SIQ-JR required for risk status is actually higher than that on the SIQ-HS. Therefore, this discrepancy is of interest because it may indicate that younger detainees are either at greater risk for suicidal ideation or more willing than older detainees to acknowledge suicidal ideation. In either case, screening for suicidal ideation among younger detainees in juvenile justice facilities seems particularly warranted, in order to identify

at-risk youth at an early age when they may be less guarded about admitting to suicidal ideation. Further research is needed in order to determine if (e.g., based on actual suicidal behavior) younger detainees actually are at greater risk (e.g., due to less competence in coping with stressors associated with justice-involvement or troubled families and communities) or are less defensive reporters.

The robust relationships between negative life events, traumatic exposure among young people, suicidal ideation and substance abuse illustrated in Table 2 give pause for practitioners working with a juvenile justice population. We found particularly strong relationships between the individual items on the MAYSI-2 TE score and MAYSI-2 SI sub-scale scores. These results are consistent with earlier work which found depression and suicidal ideation not directly related to violence exposure (Mazza & Reynolds, 1999). However, Wasserman and McReynolds (2006) found that, among juvenile justice-involved youths, mood disorder symptoms accounted for a substantial portion of the association between substance use disorder and suicide attempt history. These findings and those of the present study are suggestive of a complex relationship between trauma exposure, depression, and suicide risk that warrants further investigation.

The connection between traumatic stress and suicidality is furthered by findings that exposure to violence along with “housing stress” or neighborhood characteristics contribute to suicidal behavior among young offenders (Howard, Lennings, & Copeland, 2003). Thus, while exposure to violence may lead to traumatic stress and psychosocial problems, suicidality per se may be more related to a range of “bad” experiences (e.g., family conflict, parental substance use or divorce, problems in school or with peers) and associated distress (e.g., feeling rejected) than to traumatic stress per se.

Problematic alcohol and substance use, and use of alcohol and substances to cope with distress were consistently associated with reporting each type of potential traumatic experience and intrusive re-experiencing symptoms, as well as with suicide risk (Table 2). The finding above that mood disorder tends to be more consistently associated with suicidal behavior than substance use disorders (Wasserman & McReynolds, 2006) suggests the need for a closer look at these determinants. These findings suggest that screening for a history of traumatic experiences and distressing trauma memories as well as other problems are important screening practices in juvenile justice programs. The results are consistent with research and clinical observations linking psychological trauma early in life to a progressively worsening trajectory of distress, substance use problems, isolation or deviant peer groups, problems with the law, and impulsivity and despair that can lead to risky or self-harming behavior (Ford, Chapman, Mack et al., 2006).

Limitations in this study should be considered when interpreting the results. The findings are based on self-report scores from screening measures which, although psychometrically robust, may be subject to response biases. Additionally, both the SIQ and the MAYSI-2 SI scale are measures of ideation. Inclusion of reported suicidal behaviors would have strengthened this study and provided further interesting analysis. Corroboration with observational or institutional records data would provide an independent assessment of suicide risk/behavior. The data were collected only at admission, and therefore do not reflect suicide risk or its relationships to screening status later during the course of detention stay or upon adjudication and release or subsequent confinement. The role of family support (Flouri & Buchanan, 2002) and demographic factors were not systematically explored in this study. Risk and protective

factors for actual violence were not assessed, although problems with anger and aggression were included in the multivariate model using a MAYSI-2 sub-scale.

In conclusion, these findings suggest that traumatic stress and substance use problems are an important area for screening in juvenile justice facilities. In addition to potentially being helpful in terms of treatment planning, while in custody and after release, identifying youths with traumatic stress and substance abuse problems may contribute to the monitoring for risk of suicide as well. Youths who are identified as at risk for suicide also may benefit from education, counseling, and support designed to help them cope with or recover from traumatic stress and substance abuse as well as the depression, hopelessness, and impulsivity that are more commonly addressed in suicide prevention and the treatment of suicidality (Miller, Eckert, DuPaul et al., 1999).

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