

Trauma exposure, posttraumatic stress, and comorbidities in female adolescent offenders: findings and implications from recent studies

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Background: While males constitute the majority, female adolescent offenders are a sizeable minority of the overall delinquent population. Further, those females who become involved in delinquent activities appear to be doing so at a younger age, and they are involved in a wide range of criminal activities, including violent offenses.

Objective: The goal of this article is to consolidate an empirical base for our current knowledge about female juvenile offenders' trauma-related mental health and rehabilitation issues.

Method: We searched for studies using PILOTS, PsycLIT, PsycINFO, and EBSCOhost electronic databases.

Results: Accordingly, we present a review of findings from 33 recent studies showing consistently high rates of trauma exposure, PTSD, and common comorbidities among female adolescent offenders. We also examined recent literature on risk and protective factors for female delinquency, as well as treatments for offenders, and found that there was some early representation of trauma and PTSD as important variables to be considered in etiology and treatment.

Conclusion: Future plans for addressing the mental health needs of female offenders should be better informed by these recent findings about widespread trauma exposure and related psychological consequences.

Keywords: *delinquency; PTSD; female juvenile offenders; risk and protective factors; violence exposure*

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Although males make up the majority of offenders under the age of eighteen, the number of female juvenile offenders is also sizeable. Furthermore, those females who become involved in delinquent activities appear to be doing so at a younger age (Mullis, Cornille, Mullis, & Huber, 2004). While the rates of adolescent female arrests in the US have decreased in recent years, arrest rates for male adolescents have fallen even more sharply. This trend may be related to new policies being implemented, such as mandatory arrests for domestic violence and zero tolerance policies at

schools. These policies affect both males and females, but the effects may be stronger for girls (Zahn, Hawkins, Chiancone, & Whitworth, 2008). The types of criminal activities that female juvenile offenders are involved in have also shifted in recent years. Before 1990, most female juvenile offenders in the US were arrested for either sexual misconduct or running away (Mullis et al., 2004). Today, however, young female offenders are involved in a much wider range of criminal activity, including more violent offenses. These offenses include gang activity, drug trafficking, assault, armed robbery,

and weapons possession. In fact, rates of simple assault committed by adolescent females are increasing, suggesting that girls are committing more “acting out” crimes than ever before (Zahn et al., 2008).

Wood, Foy, Goguen, Pynoos, and James (2002) published one of the early investigations of the relationship between exposure to violence, posttraumatic stress disorder (PTSD), and delinquency among incarcerated adolescent girls. At that time only a handful of studies addressing these issues was available, and that scant literature suggested that delinquent girls may have a unique history of trauma exposure when compared to delinquent adolescent boys. For example, family-related trauma and dysfunction may be more strongly related to delinquent behavior among girls, with girls suffering more serious impairment from exposure to sexual or physical abuse than boys. In addition, Wood et al. (2002) found that neighborhood and school factors, such as community violence exposure and lack of sense of belonging at school, were more predictive of girls’ involvement in gangs, while family factors, such as high levels of family conflict, and relationships with delinquent peers were more predictive of gang involvement for boys. The Wood et al. (2002) study also found that incarcerated adolescent females scored significantly higher than males on overall PTSD severity and depressive symptoms. Thus, it seemed that males and females exhibited different trajectories for involvement in delinquent activity, and that they might best be considered separately when examining risk and protective factors, and appropriate treatments. More studies of trauma exposure and related mental health issues among female offenders were clearly needed.

Fortunately, more than 30 new studies on trauma exposure among female adolescent offenders have emerged in the past 10 years. The purpose of the current paper is to provide a brief review and critique of this recent literature in order to update our knowledge about trauma and related mental health issues for these young women. We also briefly examined current literature on risk and protective factors and available treatments for female offenders to see if trauma-related issues were being addressed. Table 1 presents a comparison of pertinent characteristics of the 33 studies found in our literature review. We located these studies through electronic searches of PILOTS, PsycLIT, PsycINFO, and EBSCO-host databases.

Among the studies reviewed in Table 1 it is notable that eight are international- four from Europe (one each from Austria, Belgium, Germany, and the United Kingdom), and two each from Australia and Japan. The remaining 25 studies were conducted within the United States. Sample sizes for many (16/33) studies fell in the range of 100–250 participants. Ten studies used samples of less than 100 participants, while only two studies were reported with more than 250. In terms of quality of

research designs represented, the majority (21/33) were single group or cross-sectional in nature. However, the remaining studies employed more rigorous designs, with nine studies using a control group, and the remaining three studies featuring longitudinal designs. By far, most studies were conducted in detention facilities (26/33) with incarcerated female adolescents.

In terms of demographic and personal factors reported in the studies, ethnicity was almost universally reported (32/33), while educational level (12) and socioeconomic status (10) were less frequently assessed. Gang affiliation (9) and high risk sexual activity (9) were also characteristics reported often. Family risk factors were addressed in many studies as well: transience (19/33); foster care placement (14); single parent family (12); parental involvement/ monitoring (10); criminality (10); substance abuse (7); and psychopathology (4).

Most of the studies in Table 1 assessed for exposure to multiple sources of trauma (27/33), with family, intimate partner, and community domains represented. Twenty-five studies examined both physical abuse and sexual abuse among their female offenders; 20 studies assessed for community violence, eight reported on girls’ exposure to domestic violence between their parents, and three studies examined intimate partner violence in the adolescents’ dating relationships. In addition to multiple trauma exposure, emotional abuse or neglect was specifically assessed in 12 studies. PTSD case rates were reported in 17 studies. Other frequently assessed comorbidities included: depression (26/33); substance abuse (23); anxiety (21); suicidality (16); attention deficit hyperactivity disorder (13); and conduct disorder or oppositional defiant disorder (11).

A key finding from the set of 33 studies is that uniformly high rates for exposure to the several types of trauma are represented, and that exposure to multiple types of trauma is most common. In fact, female offenders have often experienced both family-based violence (childhood physical and sexual abuse; domestic violence), as well as various incidents of community violence. PTSD rates reported in 17 studies ranged from less than 15% (three studies) to more than 30%, with 13 of them reporting PTSD positive cases exceeding 30% in their samples. While there are differences in diagnostic assessment methods across studies, there is consistency in that there are more than four times as many studies with very high PTSD prevalence than studies reporting low rates. Several studies also reported high prevalence for suicidality, and that both severity of trauma exposure and PTSD were significantly related to it. For other comorbid disorders or conditions (e.g., depression, anxiety, substance abuse, conduct disorder, ODD, ADHD) studies in Table 1 also showed higher rates for their occurrence and positive correlations with the number of traumas, as well as exposure severity.

Table 1. Studies of Traumatic Exposure (TE) and PTSD in female juvenile offenders

Study	Research	Sample (N)	Measurement	Major findings
Abram et al. (2007)	Prevalence of PTSD and co-morbid psychiatric disorders among incarcerated juveniles	USA, Illinois Sample (360) Age: $M = 14.8$, $SD = 1.4$	DISC-IV	Reported PTSD prevalence: 14.7%; among those females diagnosed with PTSD, 82% had at least one comorbid disorder; most commonly reported comorbidity: SUD (63%)
Abrantes, Hoffmann, and Anton (2005)	Prevalence and severity of co-occurring disorders in two juvenile detention centers	USA, Maine Sample (34) Age: $M = 16.3$, $SD = 1.1$	PADDI	In the sample TE i.e., abuse, was reported by >70% of females: emotional—50%, sexual—44%. Reported prevalence: PTSD—35% (subclinical—23%), SUD—72%, MDD—65%. Assessed suicidal ideation among participants—58%; attempts—38%
Ariga et al. (2008)	Extent of TE, prevalence of PTSD, and comorbidity in the sample of incarcerated juvenile females	Japan Sample (64) Age: $M = 17.2$, $SD = 1.0$	CAPS; DSD; IES-R; MINI-KID	TE found in 76.5% of females; most participants described poly-traumatization: sexual abuse—54.7%, maltreatment—32.8%, victim of violence—45.3%, exposure to traumatic news—32.8%, PTSD prevalence—32.8%. Found high comorbidity: mood disorders, anxiety, anorexia, bulimia, SUD, etc.
Barnett (2004)	Prevalence of PTSD symptomatology in incarcerated adolescent females vs. high school students	USA, California Sample/Control (65+47) Age $M = 16.8$ $SD = 1.6$	ATS; IES-R	Repeated TE to more violent poly-victimization may be a factor in higher IES scores in incarcerated females. Common PTSD precipitating events: threatened with a weapon, seeing a loved one die, being physically abused, being raped, being robbed
Cauffman, Feldman, Waterman, and Steiner (1998)	PTSD among incarcerated juvenile females	USA, California Sample (96) Age $M = 17.2$ $SD = 1.8$	PDI-R; WAI	Reported PTSD prevalence—48.9%, subclinical—11.7%. Assessed lifetime PTSD symptomatology in >65% of females. Poly-TE included: witnessing severe injury, or someone being killed—76%, badly hurt, or in danger—74%, raped, or in danger—60%
Cernkovich et al. (2008)	Predicting adolescent and adult antisocial behavior among high-risk delinquent females; longitudinal study	USA, Ohio Sample (109) Age $M_1 = 16.7$ Age $M_2 = 29.7$	CTS-R	Serious adult criminology correlates with sexual and physical abuse during childhood and adolescence: TE to sexual abuse increased the likelihood of serious adult offending by 264–344%, whereas TE to physical abuse: between 579 and 605%
Chapman and Ford (2008)	Suicidal ideation in incarcerated youth: relation to substance use and TE	USA, Connecticut Sample (235) Age $M = 14.3$ $SD = 1.1$	MAYSI-2; SIQ	Endorsed TE in the sample: 2.92 types per participant (e.g., something terrible happened, severe injury, rape, or witnessing violence). Traumatic stress significantly increased risk of suicide: reports of posttraumatic intrusive re-experiencing, inter-personal sensitivity, etc. correlated with suicidality

Table 1 (Continued)

Study	Research	Sample (N)	Measurement	Major findings
Chauhan and Reppucci (2009)	Racial differences in the impact of neighborhood disadvantage, exposure to violence and criminal recidivism	USA, Virginia Sample (122) Age $M = 16.8$ SD = 1.3	CVM; CTS	African American females were more likely than Caucasians to live in impoverished areas, but both races reported similar levels of TE (e.g., parental and peer abuse, witnessing violence, etc.). Established associations with recidivism: community TE for African American participants and parental physical abuse for Caucasians
Chitsabesan et al. (2006)	Effectiveness of mental screening of female juvenile offenders	England and Wales Sample (69) Age $M = 15.7$ SD = 1.3	SNASA; WASI; WORD	Reported prevalence: PTSD—19%, self-harm—17%, depression—35%. In the sample, various mental health needs were unmet. Educational, social (peer and family) and substance abuse are lowered during incarceration, re-emerging upon release
Cruise, Marsee, Dandreaux, and DePrato (2007)	Prevalence and severity of co-occurring disorders in two juvenile detention centers	USA, Louisiana Sample (145) Age $M = 15.3$ SD = 1.7	MAYSI-2; TSCC	Undiagnosed females scored lower on anger, suicidality, and TE than those with high mental health symptoms (33.8%) and comorbidity (19.3%). Diagnosed females were seven times more likely to report physical abuse, and twice as likely sexual
DeLisi et al. (2010)	Link between early life exposure to violence and victimization in regards to the cycle of violence in incarcerated youth	USA, California Sample (153) Age $M = 16.9$ SD = 1.1	MAYSI-2	Incarcerated females exhibited similar levels and types of psychopathology and TE, as males. Once incarcerated, youth with greater exposure to early trauma evinced more sexual and total misconduct, with females showing greater levels of suicidality
Dembo and Schmeider (2003)	Classification of incarcerated youth based on personal characteristics, TE, substance use, and mental health	USA, Florida Sample (142) Age $M = 14.5$ SD = 1.6	CTS-R, adapted; SCL-90-Revised	High-level delinquency correlated to elevated TE (i.e., physical abuse). Every 3rd female was a sexual victim. Self-reported drug users experienced more family and mental health problems than low-level delinquents/drug users, high-level delinquents, and hair-test identified marijuana/cocaine users
Dixon, Howie, and Starling (2004)	Psychopathology in incarcerated adolescent females in relationship to SES, mental health status, family, and trauma variables	Australia, Sydney Sample/Control (100+100) Age $M = 16.5$ SD = 1.2	FACES-II; K-SADS-PL	Incarcerated sample exhibited high prevalence of disorders (PTSD—20%, past—17%, SUD—85%, depression—33%, CD—91%) and comorbidity of 3 or more diagnoses in 78%. Results: higher TE in incarcerated females than in the control group (e.g., witnessing a violent crime—70 vs. 30%)
Goldstein et al. (2003)	Comorbidity of psychiatric disorders in incarcerated adolescent females	USA, Massachusetts Sample (232) Age $M = 16.1$	MACI; MAYSI-2; CBCL-YSR	Reported prevalence in the sample: anxiety disorder—56.3%, depression—63%, SU—71.7%, suicidal ideation—36.6%. Characteristic TE: rape—44%, and witnessing someone being killed—52%

Table 1 (Continued)

Study	Research	Sample (N)	Measurement	Major findings
Gore-Felton, Koopman, McGarvey, Hernandez, and Canterbury (2001)	Relationship between abuse, emotional (internalizing), and behavioral (externalization) problems in incarcerated youth	USA, Southern State Sample (133) Age $M = 15.8$ SD = 1.3	YSR	Females were likely to internalize their problems and emotional abuse, reporting withdrawal, somatization, anxiety, and depression. Externalization (e.g., substance use, delinquency, aggression) was correlated with physical (e.g., excessive hitting with objects) and sexual abuse
Gover (2004)	Assessment of childhood sexual trauma among incarcerated youth, in regards to gender and depression	USA, National Sample (206) Age: 15.7 SD = 1.4	JI, integrated in a survey	Females were significantly more likely than males to have a history of childhood sexual abuse ($t = -7.96, p < 0.01$), with reported prevalence of 37.5% in females vs. 8.4% in males. Females were significantly more depressed than males: depression recorded at 3.4 in females vs. 3.08 for males
Jaycox, Ebener, Damesek, and Becker (2004)	PTSD, TE, and psycho-social functioning in youth referred from the juvenile justice system to drug treatment centers	USA, National Sample (42) Age $M = 16.5$ SD = 1.6	CPTSD-I; PYLS; TEQ; YSR	Reported TE in females: overall—68%, sexual, i.e., touched sexually without consent—35.7%, sexually attacked—33.3%, natural disasters—19%. More than 1/3 of the females have had both TE and PTSD vs. 18% of males in the sample
Karnik et al. (2009)	Prevalence of mental disorders in juvenile offenders after 9 months of incarceration	USA, California Sample (140) Age $M = 16.8$ SD = 1.2	SCID-IV; DICA	Excluding CD and ODD, 92% of females met criteria for at least one psychiatric disorder, including: PTSD—13%, SUD—84%, anxiety—55%, mood—32%, etc. Comorbidity of 3 or more diagnoses was established in 86% of the sample
Kenny and Nelson (2008)	Examination of health, welfare, and criminogenic needs in young offenders on community-based orders	Australia, South Whales Sample (120) Age $M = 16.8$ SD = 1.3	APS-SF; K-10; CTQ	Reported PTSD prevalence—45% (moderate—28%, mild—17%). Moderate TE was found in 45% of the sample, while severe TE in 28%: sexual abuse—22%, emotional—11%, physical—11%. SUD was frequent: severe—44%, mild to moderate—33%
Kerig, Ward, Vanderzee, and Moeddel (2009)	Interrelationship between TE, PTSD, and mental health in juvenile delinquents	USA, Midwest Sample (90) Age: 11–18	PTSD-I, CAPS-CA; MAYSI-2	In the female sample, reported PTSD prevalence—45% (clinical) and 21% (subclinical). Key finding—PTSD mediates the relationship between interpersonal trauma & mental health problems, with higher correlation for females than males
Krischer and Sevecke (2008)	Early traumatization, violence, and neglect as a significant impact on psychopathology in incarcerated juveniles	Germany Sample/Control (89 + 45) Age $M = 17.3$ SD = 1.4	CTQ; PCL-YV	The sample of incarcerated adolescent females had elevated scores on all abuse scales, compared to the control group and incarcerated males. Parental criminality and familial breakdown showed highest correlation with psychopathology, whereas emotional neglect was related to antisocial tendencies

Table 1 (Continued)

Study	Research	Sample (N)	Measurement	Major findings
Lederman, Dakof, Larrea, and Li (2004)	Characteristics of incarcerated adolescent females	USA, National Sample (493) Age $M = 15.2$ SD = 1.5	DISC; TEQ	TE found in 84% of the participants, who disclosed three types of TE on average, with half of the sample recently witnessing a violent attack. Every fourth female reported sexual abuse. Mental disorders co-morbidity was at 78% (anxiety—59%, SUD—61%)
Leve and Chamberlain (2004)	Defining early age-onset pathway of delinquency in serious female juvenile offenders	USA, Oregon Sample (62) Age $M = 15.3$ SD = 1.1	AES-III; CES-D; CSEQ	Familial environment (transitions; injurious punishment, e.g., burns, cuts, broken bones, bruises; sexual abuse), personal characteristics (IQ) and parental criminality were significantly correlated to the first arrest (e.g., biological parent criminality increased the odds of an early arrest from 15 to 283 times)
McReynolds et al. (2008)	Assessment of mental disorders in adolescent offenders during an intake at a juvenile detention center prior to adjudicatory incarceration	USA, California Sample (248) Age: 15.4 SD = 1.6	V-DISC	Reported prevalence: anxiety disorders—25.8% (panic—5%, agoraphobia—10.5%, specific phobia—12.9%), separation anxiety—22.8%, MDD—9.4%, PTSD—5.1% (vs. 2.4% in males). Results: higher rates on nearly all components of anxiety and affective disorders in the sample, compared to incarcerated young males, or general population
Mueser and Taub (2008)	Correlates and prevalence of PTSD in adolescents with severe psychopathology involved in the multiple service system, including detention	USA, New Hampshire Sample/Control (26 + 48) Age $M = 14.1$ SD = 1.9	CBCL-YSR; ChiPS	Prevalence of PTSD in the incarcerated females sample—42%. Sexual abuse was described as the most distressing event, and was correlated with higher rates of PTSD. Reported TE: sexual abuse—50%, sexual victimization—54%, death of the loved one—50%, witnessed domestic violence—42%
Odgers, Reppucci, and Moretti (2005)	Victimization in the sample of incarcerated adolescent females and investigation of utility of the PCCL-YV	USA, South-East Sample (125) Age $M = 16.2$ SD = 1.3	CTS-R; DICA; PCL-YV; YSR	The sample exhibited high comorbidity: >50% met criteria for two or more disorders (PTSD—25%, ADHD—17%, MDD—27%, GAD—25%). Majority of participants reported familial victimization: psychological abuse—88%, physical abuse—53%, domestic violence—36%
Plattner et al. (2009)	Gender-specific predictors of re-offending and psychopathology in detained juveniles	Austria, Vienna Sample (56) Age $M = 17.8$ SD = 1.7	MINI-KID	The sample exhibited high comorbidity of disorders: PTSD—51.8%, SUD—75%, MDD—23.2%, etc. GAD, found in every fourth participant was a predictor for re-offending, whereas dysthymia (16.1%) appeared to serve as a protection
Robertson, Dill, Husain, and Undesser (2004)	Prevalence of psychiatric disorders among incarcerated juvenile offenders in training schools and detention centers	USA, Mississippi Sample (161) Age $M = 15.3$ SD = 1.4	APS	The sample was characterized by high comorbidity and prevalence of disorders: PTSD—41% (mid-to-severe symptomatology), separation anxiety—51.9%, MDD—31%, schizophrenia—30.6%, bulimia—28%, anorexia—17.8%

Table 1 (Continued)

Study	Research	Sample (N)	Measurement	Major findings
Ruffalo, Sarri, and Goodkind (2004)	Risks and protective factors for delinquent, diverted, and high-risk adolescent females in home-based, open, and closed residential settings	USA, urban sample Sample/Control ₁ / Control ₂ (44 + 68 + 47) Age $M_1 = 15.5$ Age $M_2 = 15.3$ Age $M_3 = 17.3$	CES-D; CTQ; LE/SC	Compared to females in diversion and less restrictive programs, incarcerated females had upsurge in TE and risk factors: lower SES, parental criminality, substance use, familial and school disruptions, sexual abuse, etc. Prevalence in the incarcerated sample: suicidal ideation—31%, depression—80%
Smith, Leve, and Chamberlain (2006)	TE and health-risking sexual behaviors in adolescent females, mandated to out-of-home care by court	USA, Oregon Sample (88) Age $M = 15.3$ SD = 1.1	DISC; CSEQ; TSS	Prevalence of PTSD: full—16%, partial—46%. TE in the sample was 200–300 higher than in general population: sexual or physical—93%, both sexual & physical—63%, sexual abuse before 13 years of age—76%
Suk et al. (2009)	Suicidal ideation and psychopathology in incarcerated youth compared to a general population sample	Belgium, Flanders Sample (62) Age $M = 15.7$ SD = 1.2	CES-D; CPTS-RI; SRSA, adapted	Suicidal ideation in incarcerated females was at 58.1 vs. 14.4%, recorded in the general population. In the incarcerated sample, the suicidal group scored higher on depression, anxiety and post-traumatic stress than the non-suicidal group
Wood et al. (2002)	Prevalence of TE and PTSD in an incarcerated juvenile females sample, compared to a sample of high school students	USA, CA Sample/Control (100 + 100) Age $M = 15.8$ SD = 1.6	AEIII; CES-D; CTS; FES; GII; LASC-RA; PSS-F; SAEQ; SCECV	Nearly as 3X more incarcerated females reported sexual assault or molestation compared to high schoolers. Physical, sexual abuse, and community violence were significant predictors of PTSD in incarcerated females. Prevalence of PTSD: incarcerated—52%; control sample—30%
Yoshinaga, Kadomoto, Otani, Sasaki, and Kato (2004)	Prevalence of PTSD and TE in incarcerated adolescent females	Japan, Tokyo Sample (45) Age $M = 17.0$ SD = 1.5	CAPS, adapted	Prevalence of PTSD (past and current): full—18%, partial—27%. Most of the sample (81%) reported more than one type of TE, describing physical assault, physical abuse, sexual assault, unwilling sexual experience, witness of death, injury, etc.

Notes: ATS, Adolescent Trauma Scale (Berton & Stabb, 1996); CAPS, Clinically Administered PTSD Scale (Blake et al., 1995); DISC, Diagnostic Interview Schedule for Children (Shaffer, Fisher, & Lucas, 2003); DSD, DSM Scale for Depression (Roberts, Roberts, & Chen, 1995); IES, Impact of Event Scale (Horowitz, Wilner, & Alvarez, 1979; Weiss & Marmar, 1997); MINI-KID, Mini-International Neuropsychiatric Interview for Children and Adolescents (Sheehan et al., 1998); PADDI, Practical Adolescent Diagnostic Interview (Estroff & Hoffmann, 2001); PDI-R, Psychiatric Diagnostic Interview—Revised (Othmer, Penick, Powell, Read, & Othmer, 1981); WAI, Weinberger Adjustment Inventory (Weinberger & Schwartz, 1990); CTS-R, Conflict Tactic Scale (Straus, 1979), CTS-R, CTS—revised (Straus & Gelles, 1990); CVM, Community Violence measures (Chauhan & Reppucci, 2009); MAYSI-2, Massachusetts Youth Screening Instrument (Grisso & Barnum, 2000); SIQ, Suicide Ideation Questionnaire (Reynolds, 1987); SNASA, Salford Needs Assessment Schedule for Adolescents (Kroll et al., 1999); WASI, Wechsler Abbreviated Schedule Interview (Psychological Corporation, 1999); WORD, Wechsler Objective Reading Dimension (Psychological Corporation, 1992); FACES-II, Family Adaptability and Cohesion Scale II (Olson, Portner, & Bell, 1982); K-SADS-PL, Kiddie-Schedule for Affective Disorders and Schizophrenia for School-Age Children—Present and Lifetime Version (Kaufman, Birmaher, Brent, Rao, & Ryan, 1996); MAYSI-2, Massachusetts Youth Screening Instrument (Grisso & Barnum, 2000); SCL-90, Symptom Checklist (Derogatis, 1983); TSCC, Trauma Symptom Checklist for Children (Briere, 1996); CBCL-YSR, Child Behavioral Checklist Youth Self-Report (Achenbach, 1991); CPTSD-I, Children PTSD Inventory (Saigh et al., 2000); JI, Jesness Inventory (Jesness, 1983); MACI, Millon Adolescent Clinical Inventory (Millon, 1993); MAYSI-2, Massachusetts Youth Screening Instrument (Grisso & Barnum, 2000); PYLS, Past Year Life Stressors (Jaycox et al., 2004); TEQ, Traumatic Experience Questionnaire (Jaycox et al., 2004); YSR, Youth Self Report (Achenbach, 1991); APS-SF, Adolescent Psychopathology

Scale—Short Form (Reynolds, 1998); CAPS-CA, Clinician Administered PTSD Scale for Children and Adolescents (Nader et al., 1996); CTQ, Childhood Trauma Questionnaire (Bernstein & Fink, 1998); DICA, Diagnostic Interview for Children and Adolescents (Reich, Shayka, & Taibleson, 1991); K-10, Kessler Psychological Distress Scale (Kessler et al., 2002); MAYSI- 2, Massachusetts Youth Screening Instrument (Grisso & Barnum, 2000); PCL-YV, The Psychopathy Checklist—Youth Version (Forth, Kosson, & Hare, 2003); PTSD-I- UCLA, Posttraumatic Stress Disorder Index for DSM-IV, Adolescent Version (Pynoos, Rodriguez, Steinberg, & Stuber, 1998); SCID-IV, Structured Clinical Interview for DSM-IV (Pfohl, Blum, & Zimmerman, 1997); AES-III, Assessing Environments Scale-III (Knutson, 1978); CBCL-YSR, Child Behavioral checklist Youth Self-Report (Achenbach, 1991); CES-D, Center for Epidemiological Studies-Depression Scale (Radloff, 1977); ChIPS, Children's Interview for Psychiatric Syndromes (Weller, Weller, Fristad, Rooney, & Schechter, 2000); CSEQ, Childhood Sexual Experience Questionnaire (Zaidi et al., 1991); TEQ, Trauma Experience Questionnaire (Lederman et al., 2004); V-DIC, Voice Diagnostic Interview Schedule for Children (Shaffer et al., 2003); APS, Adolescent Psychopathology Scale (Reynolds, 1998); CES-D, Center for Epidemiological Studies—Depression Scale (Eaton, 2001); CTQ, Childhood Trauma Questionnaire (Scher, Stein, Asmundson, McCreary, & Forde, 2001); CTS-R, Conflict Tactics Scale, revised (Straus & Gelles, 1990); DICA, Diagnostic Interview for Children and Adolescents (Reich et al., 1991); LE/SC, Life Events/Stress Scale (Bynum, 1995); MINI-KID, Mini-International Neuropsychiatric Interview for Children and Adolescents (Sheehan et al., 1998); PCL-YV, Psychopathy Checklist—Youth Version (Forth et al., 2003); YSR, Youth Self Report (Achenbach, 1991); AEIII, Assessing Environments (Berger, Knutson, Mehm, & Perkins, 1988); CAPS, Clinically-Administered PTSD Scale (Blake et al., 1995); CES-D, Center for Epidemiological Studies- Depression Scale (Eaton, 2001); Radloff, 1977); CPTS-RI, Child Posttraumatic-Reaction Index (Pynoos et al., 1993); CSEQ, Childhood Sexual Experience Questionnaire (Zaidi et al., 1991); CTS, The Conflicts Tactics Scale (Straus, 1979); DISC, Diagnostic Interview Schedule for Children (Shaffer et al., 2000); FES, Family Environment Scale (Moos & Moos, 1981); Gill- The Gang Involvement Index (Layne, 1996); LASC-R, Los Angeles Symptom Checklist, revised (Foy, Wood, King, & Resnick, 1997); PSS-F, Perceived Social Support- Family (Procidano & Heller, 1983); SAEQ, Sexual Abuse Exposure Questionnaire (Rowan, Foy, Rodriguez, & Ryan, 1994); SCECV, Survey of Children's Exposure to Community Violence (Richters & Saltzman, 1990); SRSA, Self-Reported Suicide Attempts (Safer, 1997); TSS, Trauma Stress Schedule (Norris, 1990).

Increasingly, studies of female offenders are assessing prevalence of well-known family risk factors, as well as trauma exposure and mental health consequences. Among the studies in Table 1, 19 included measures of family transience and/or discord. Fourteen studies reported out-of-home (foster care) placement rates, while parental criminality and involvement (monitoring and supervision) were assessed in 10 studies. Seven studies included measures of parental substance abuse, while four addressed parental psychopathology. Fewer than half ($n = 13$) of the studies in Table 1 failed to include family risk factors at all. Findings with regard to family risk factors suggest that the sum of these factors found in individual cases may be more important than attempts to weight or consider the impact of individual risk factors.

It is notable that, while ethnicity was reported as a demographic variable in almost all studies, only the Chauhan and Reppucci (2009) study actually used it as a study variable to examine differences between African American and Caucasian female offender groups. While there were no differences in measures of trauma exposure, ethnic differences were found among factors related to recidivism such that with African Americans community violence exposure severity was related, while severe physical discipline was associated for Caucasians.

Are the findings from our review on trauma and related mental health issues reflected in the literature on etiology of female offending? Risk and protective factors for female adolescent offending span five domains including: community, family, interpersonal/peer, school, and individual. *Community violence* has been identified as a risk factor in the community domain, along with living in inner city neighborhoods lacking in key community resources for social support and pro-social activities for adolescents (Mullis et al., 2004). Community violence is particularly dangerous, as exposure to violent events, either directly as a victim or as a witness increases the likelihood of both developing PTSD and becoming involved in the juvenile justice system (Ariga et al., 2008; Mullis et al., 2004).

Family risk factors including poverty or low socioeconomic status, weak parental support, conflict, lack of communication, psychopathology, substance abuse, criminality, and poor parenting practices have all been associated with increased risk for offending (e.g., Bloom, Owen, Deschenes, & Rosenbaum, 2002; Cernkovich, Lanctôt, & Giordano, 2008; Patterson, Forgatch, Yoerger, & Stoolmiller, 1998). In these US studies (e.g., Cernkovich et al. 2008) poverty is usually assessed on the basis of parental income level, socioeconomic status is derived from parents' education and occupational levels, and offender psychopathology includes PTSD, depression and suicidality. Other family-based risk factors include the disapproval of peers by parents, parental

history of violence or involvement in criminal activities, and *physical, sexual, and emotional abuse* (Bloom et al., 2002; Cernkovich et al., 2008).

Interpersonal and/or peer-related risk factors include being a *victim of dating violence* (Goguen, 1998), along with strong attachments to a deviant peer group (Patterson et al., 1998), and gang participation (Mullis et al., 2004). Trauma is not reflected among current school risk factors that include poor school performance, low attachment to school, expulsion or dropping out, and limited involvement in extracurricular activities (Mullis et al., 2004). However, some of the mental health issues identified in our review of studies are found among studies of individual risk factors. For example, a diagnosis of *Oppositional Defiant Disorder or Conduct Disorder* has been reported as a risk factor for delinquency in both males and females (Vermeiren, 2003). In addition, delinquent girls have been reported as likely to suffer from comorbid mental disorders such as *depression, anxiety disorders, and eating disorders* (Vermeiren, 2003).

Protective factors decrease the risk for female juvenile offending and include family variables such as *consistency in parental discipline, monitoring, and bonding* (Mullis et al., 2004). Adolescents with stable caregivers may benefit from a buffering effect against the risk factors associated with the community (Patterson et al., 1998), showing reduced risk for involvement in delinquent activities (Mullis et al., 2004).

Individual factors can also serve as protection against involvement in delinquency for adolescent females. Girls with higher self-esteem have been found to be less likely to become involved in criminal activities, as well as girls who scored high on measures of optimism and confidence (Bloom et al., 2002; Cernkovich et al., 2008; Mullis et al., 2004). In addition, girls who are committed to school and academic pursuits, who participate in extracurricular school activities, and are attached to both their parents and conventional peers are more likely to resist involvement in delinquent activities (Cernkovich et al., 2008; Mullis et al., 2004).

Finally, resiliency is an interesting individual factor that has been associated with protection against involvement in delinquency and the development of PTSD (Fincham, Altes, Stein, & Seedat, 2009). Resilience has been defined in a number of ways in the literature, but it is generally thought of as dynamic or active, involving an interaction between risk and protective processes that reduce the effects of an adverse life event. It involves both internal and external factors that enable the individual to bounce back from crises. In their study of a community sample of South African adolescents exposed to high levels of violence, Fincham et al. (2009) found that resilience moderated the relationship between risk factors and PTSD.

Are the findings from our review on trauma and related mental health issues reflected in the literature on psychological treatment of female offenders? Zahn, Day, Mihalic, and Tichavsky (2009) recently reviewed outcome studies on treatment programs for adolescent girls in custody. Nine programs were found that were designed exclusively for girls, and an additional six programs that targeted both boys and girls were also evaluated. Overall, they found that comprehensive programs targeting multiple risk factors seemed to work best at reducing delinquency, regardless of whether they targeted both genders or girls specifically. However, gender-specific programs appeared to have positive effects on a variety of outcomes, such as self-esteem, education, relationships with family and friends, and other social-psychological outcomes (Zahn et al., 2009). Among the female-specific programs two in particular showed modestly favorable outcomes through rigorously controlled research. Both these programs, Reaffirming Young Sisters' Excellence [RYSE] (Burke, Keaton, & Pennell, 2003) and Working to Insure and Nurture Girls Success [WINGS] (National Council on Crime and Delinquency, 2001), randomly assigned girls to either receive that particular gender-specific treatment or be part of a comparison group receiving traditional treatment. Both programs were comprehensive and targeted multiple risk factors, including school, peers, and family while incorporating individualized treatment plans (Zahn et al., 2009). However, neither RYSE nor WINGS programs specifically addressed girls' traumatic experiences and related distress.

Seeking Safety is an adult intervention that has also been adapted for use with adolescent girls (Najavits, Gallop, & Weiss, 2006). This intervention is unique in that it specifically focuses upon both traumatic experiences and substance abuse. A key modification for use with adolescents included brief updates with parents, if participants agreed to it. Those receiving the Seeking Safety treatment showed more positive results on measures of substance abuse and PTSD than girls receiving treatment as usual. Improvements were also seen on problems that were not targeted by the treatment, such as anorexia and somatization (Najavits et al., 2006). While results from this preliminary study are encouraging, studies employing Seeking Safety with female adolescent offenders are now needed.

Summary

In the past 10 years an impressive number (33) of new studies on female offenders' trauma exposure and related mental health issues have emerged. Further, nearly one-fourth of these new studies are from non-US sources. Key findings from our review of these studies indicate that severe exposure from multiple types of trauma is most often found among these young women, and that PTSD

rates generally exceed 30%. High prevalence rates for other comorbidities, such as depression, substance abuse, anxiety, and suicidality are also reported. Given the extensiveness of these findings, it seems clear that severe trauma exposure and serious mental health sequelae are to be expected in high proportions of incarcerated female offenders, both in international and US forensic settings. While there is modest representation of trauma exposure and related psychological disorders among studies of etiology for female delinquency, present treatments for offenders do not specifically target trauma effects. We hope that the results of this review will encourage the inclusion of trauma as a prominent consideration in future treatment planning for female offenders.

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