Evaluation of a Trauma-Informed School Intervention with Girls in a Residential Facility School: Student Perceptions of School Environment

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In response to the high nationwide prevalence of psychological trauma among court-involved youth who have been exposed to abuse and neglect and the associated far-reaching adverse consequences, there are calls to develop a trauma-informed workforce across the various systems (child welfare, juvenile justice, mental health, and education) designed to serve this population. We describe a pilot test of a modified version of the Heart of Teaching and Learning (HTL) curriculum, an intervention designed to increase trauma-informed practices in education settings. This program was implemented in a public charter school that exclusively serves court-involved youth placed in residential treatment. The intervention was

*associated with decreases in trauma symptoms experienced by youth.
Because student perceptions of teachers were high both before and
after implementation of the curriculum, no statistically significant
changes were observed. The article concludes with a discussion of the
ways in which the curriculum can be used to help prepare a national
education workforce capable of implementing trauma-informed evi-
dence-based practices in school settings.*

*KEYWORDS   at-risk youth, court-involved youth, educational
well-being, residential care, residential treatment, teacher
education, trauma, trauma-informed teaching*

The United States has a sizable population of court-involved youth (those in the
foster care or juvenile justice systems). The foster care population reached
400,540 in 2011 (USDHHS, AFCARS, 2012). Thirty-one percent of all children in
foster care in 2011 met the federal definition of "youth aging out" (those between
the ages of 14 and 20 years). The Office of Juvenile Justice and Delinquency
Prevention (2013) reported that, in 2010, more than 1.3 million delinquency cases
were handled in juvenile courts across the United States. Of those, 70,792
children involved in those cases were placed in a facility as part of a court-
ordered disposition (Sickmund, Sladky, Kang, & Puzzanchera, 2011). These
cases often coincide with youths' transition into and through adolescence and
into early adulthood, a developmental stage marked by change and instability
and requiring the ability to make major adjustments, learn new skills, and cope
with a variety of challenges in the march toward greater autonomy. For foster
youth and other court wards, it can be particularly problematic.

Court-involved youth often present with a documented traumatic history
of abuse and neglect by their families of origin, which can affect normal
development, increasing the risk for emotional, behavioral, academic, social,
and physical problems (Cook et al., 2005). Trauma, defined by Wolpow,
Johnson, Hertel, and Kincaid (2009), is "an umbrella term used to describe
the inability of an individual or community to respond in a healthy way
(physically, emotionally, and/or mentally) to acute or chronic stress" (p. 2).
Complex trauma, defined as "multiple or chronic and prolonged developmen-
tally adverse traumatic events" (Wolpow et al., 2009, p. 2), poses an even
greater threat to children.

PREVALENCE OF TRAUMA IN COURT-INVOLVED YOUTH

Foster care youth demonstrate high levels of complex trauma (Greeson et al.,
2011) and have posttraumatic stress disorder (PTSD) more frequently than
their non-foster-care peers (Salazar, Keller, Gowen, & Courtney, 2012). For

youth 18 and older, rates of PTSD are over 20% higher for foster care alumni than the general population and even higher than rates for war veterans (Pecora et al., 2005). These experiences make them particularly vulnerable to negative outcomes including self-harm behavior, dating violence (Duke, Pettingell, McMorris, & Borowsky, 2010), delinquency and perpetration of violence (Bruce & Waelde, 2008), low educational attainment, homelessness, early childbearing, poverty, unemployment, dependence on public assistance, relationship difficulties (Lawrence & Hesse, 2010), and limited access to reliable transportation (U.S. Government Accountability Office, 2004). Traumatic child-hood experiences are also linked to increased risk of substance abuse, mental illness, physical health impairment, and sexually transmitted disease (Griffin, 2011). Youth who experience abuse generally begin exhibiting delinquent behaviors at earlier ages, have higher juvenile recidivism rates, and higher rates of adult criminal behavior than their counterparts (Day et al., 2013).

Court-involved female youth demonstrate gender-specific reactions to previous traumatic events, which affect their social and emotional develop-ment differently than males (Postlethwait, Barth, & Guo, 2010), including higher prevalence of PTSD, depression, and internalizing behaviors (Grande, Hallman, Underwood, Warren, & Rehfuss, 2012; Postlethwait et al., 2010). These youth often arrive at school without support networks or resources to facilitate successful transition from residential treatment to the community when they reach their treatment goals. Trauma experiences, including removal from caregivers, occurring during early formidable years often inhibit future capacity to form healthy interpersonal relationships (Cook et al., 2005). Promoting connectedness in and out of residential treatment centers and education academies is essential to promoting healthy relationships and development (Cook et al., 2005), as well as psychosocial growth (Kools, 1997).

TRAUMA AND ITS IMPACT ON STUDENTS' PERCEPTIONS OF SCHOOL ENVIRONMENT

Early trauma affects youth self-regulation and attachment (Cook et al., 2005), as well as brain development (Anda et al., 2006; Black, Woodworth, Trem-blay, & Carpenter, 2012). Dysfunction in these areas affects both learning and behavior in the classroom. Achieving school success requires meeting a combination of demands. Attention, memory, organization, comprehension, and self-regulation are some of the abilities needed for successful learning (Massachusetts Advocates for Children, 2005; Snowman & McCown, 2012). This can be very difficult to accomplish for traumatized youth. Acute or persistently stressful events can create problems with a child's ability to effectively communicate, memorize, and organize information, and form

positive peer and adult relationships (Massachusetts Advocates for Children, 2005). Trauma can also impair a child's ability to pay attention, establish appropriate boundaries, cognitively process information, and control aggression and other impulses (Cook et al., 2005).

Shonk and Cicchetti (2001) found that abused youth were less likely to become engaged in school, were less likely to display appropriate social skills, and demonstrated more externalizing and internalizing behaviors than nonmaltreated youth. Findings suggest that court-involved youth are less likely to do their homework, score lower on achievement tests, and are more than twice as likely to fail a grade (Burley & Halpern, 2001; Courtney, Terao, & Bost, 2004; Pecora et al., 2005). They are assigned to special education services with greater frequency (Macomber, 2009; Shin & Poertner, 2002; Smithgall, Gladden, Howard, Goerge, & Courtney, 2004) and are disciplined, suspended, or expelled more often than non-court-involved youth (Burley, 2010; Courtney et al., 2004). Furthermore, exposure to violence has been linked to lower grade-point average and poorer attendance (Hurt, Malmud, Brodsky, & Giannetta, 2001), lower graduation rates (Grogger, 1997), and lower IQ (Delaney-Black et al., 2002). Studies show that these students exhibit poor attachments and feelings of exclusion, which lead to lower self-esteem (Luke & Coyne, 2008). This is especially true for youth who have experienced several foster home placements (Unrau, Seita, & Putney, 2008). Long-term placements also affect youth self-esteem given the stigma of being in foster care (Kools, 1997).

THE ROLE OF SCHOOLS IN TRAUMA-INFORMED CARE

Schools are generally a main gateway into mental health services for these youth (Ko et al., 2008). Employing trauma-informed practices in classrooms and providing mental health referrals can assist them in more fully participating in their education (Wong et al., 2007). Maintaining safety, supportive connections, and management of emotions are three main objectives of trauma-informed care (Bath, 2008) and are essential to creating an appropriate classroom environment for traumatized students. Traditional punitive responses, such as suspensions and expulsions, are counterproductive and should be avoided (Griffin, 2011). Otherwise, students are at risk of being exposed to "sanctuary trauma" (Wolpow et al., 2009).

Moore, Marlene, and Holland (1997) found that, in a youth residential program, attachment-driven interventions were more effective than punishment. Penner and Wallin (2012) found a consensus between students and teachers regarding ways to improve student conduct. The conclusions in both studies were that improvements in student behavior and school attachment were heavily influenced by developing positive relationships between students and teachers, creating caring class environments, and inducing feelings

of safety. Generally, adults who lack trauma-informed training can misinterpret child trauma and its impact on behavior (Richardson, Coryn, Henry, Black-Pond, & Unrau, 2012) and can misconstrue the behaviors of traumatized children as learning disabilities or acts of defiance (Oehlberg, 2008), or as other mental health disorders (Cook et al., 2005; Massachusetts Advocates for Children, 2005), as symptoms of both are often similar (Griffin et al., 2011).

STUDENT PERSPECTIVES IN CURRENT RESEARCH

Literature suggests settings that serve court-involved youth incorporate more trauma-informed practices (Ford, Chapman, Connor, & Cruise, 2012; Miller & Najavits, 2012). Trauma-informed practices are an approach to engaging individuals with histories of trauma that recognizes symptoms and acknowledges the role trauma has played in their lives. Models for treating trauma have become more prevalent, with interventions such as Trauma Affect Regulation: A Guide for Education and Therapy (TARGET), Trauma Recovery and Empowerment Model (TREM), and Seeking Safety recommended as useful approaches to helping court-involved youth with previous trauma histories (Ford, Chapman, Hawke, & Albert, 2007). However, literature has indicated interventions that address the effects of trauma among these populations have been sorely understudied (Ford et al., 2012; Rivard et al., 2003). Further, there is little research on how students perceive trauma-informed practices in school.

Some resources are available to assist with implementing attachment and trauma-related practices (Casey Family Programs, 2013; Massachusetts Advocates for Children, 2005; National Child Traumatic Stress Network, 2008; Wolpow et al., 2009). Successful implementation of trauma-informed training and practice in schools depends on the adoption of sustainable practices and strategies and a trauma-aware organizational culture (Hummer, et al., 2010). Interventions should be guided by culturally relevant applications, varied teaching methods, sufficient dosages, theory-driven choices, positive relationships, and appropriate timing, by well-trained professionals (Nation, 2003).

THIS STUDY

This study uses ecological (Bronfenbrenner, 1977, 1986) and attachment theories (Bowlby, 1969, 1980) to examine the educational well-being of court-involved youth from a trauma-informed lens. The focus on girls in a residential treatment facility school is a critical contribution to the literature in itself, as we emphasize better understanding of these dynamics for young women who have experienced significant trauma. Ecological theory helps us understand that as individuals develop, they are not only influenced by their

unique biological and psychological characteristics, but also by the family, school, community, and larger social systems that surround them (Bronfenbrenner, 1977). The theory begins with the individual at the center and the microsystem at the next most proximal level involving caregivers, teachers and school, peers, and so on, and interaction among them at the mesosystem levels. At the exosystem level, the focus is on how events in these systems affect youth indirectly. At higher levels of this model (mesosystem), broader societal impacts are evident; for example, court-involved youth encounter challenges in their ecosystem that impede development, including counterproductive school policies and procedures (Griffin, 2011). Trauma that generally precedes court involvement can contribute to poor attachments to parents or caregivers (American Academy of Pediatrics, 2000; Manning, 2008). Removing youth from their homes of origin can also interfere with their ability to form healthy attachments with others (Rushton, Mayes, Dance, & Quinton, 2003). Furthermore, studies have shown that foster care youth, especially those with multiple placement moves, often exhibit unhealthy attachment styles and lower self-esteem (Luke & Coyne, 2008; Unrau et al., 2008). Although attachment theory generally assumes behaviors developed in childhood will persist throughout life, some methods of intervention, like the teaching intervention proposed here, might be useful in modifying maladaptive behavior. This includes exposure to supportive, emotionally corrective relationships to counteract existing views of self and expectations of others. These attachment relationships, for better or worse, continue to permeate one's functioning in each life domain and across the life span. This study's primary purpose was to assess whether the implementation of a trauma-informed teaching intervention model affects levels of trauma, self-esteem, and student attitudes toward teachers, learning, and school climate. The curriculum was informed by the experiences of both school staff and students. Data shared by school staff in regard to knowledge acquisition, how they implemented what they learned, and how they felt about the learning process have been published in another journal (Blinded for Review, in press). This article focuses on student perceptions.

METHOD

Description of Curriculum and Intervention

The school implemented a modified version of *The Heart of Teaching and Learning: Compassion, Resiliency, and Academic Success* (HTL) as the primary intervention. HTL is an integrated, manualized curriculum founded on research, theory, and clinical practice and is grounded in ecological and attachment theories applied using psychoeducational, cognitive-behavioral, and relational approaches. It was designed for use in a variety of education

settings, residential and nonresidential, including public schools, charter schools, and private education authorities. The curriculum was presented in two half-day trainings, with booster trainings occurring monthly over 2-hour periods at staff development meetings between October 2012 and May 2013. There were six modules: (a) background and definitions of trauma, (b) compassionate schools and survival, (c) self-care, (d) curriculum domains and specific strategies (Wolpow et al., 2009), (e) collaborative problem solving (Greene & Ablon, 2006), and (f) role plays, games, and case vignettes. In each training session, the format began as didactic to impart important information to all staff at once, followed by incorporation of small group and role play and practice opportunities. These were accompanied with additional tools and resources for classroom use, including examples, handouts, and idea lists. Curriculum modifications included addition of information on diversity-related issues including gender and racial identity, and inclusion of Theraplay training (Booth & Jemberg, 1998), an approach to working with children and adolescents building attachment, self-esteem, trust in others, and joyful engagement, with extra emphasis on developing healthy relationships between school staff and students. The ultimate goal is to help the students view themselves as worthy and lovable and to perceive relationships as positive and rewarding.

To ensure fidelity of intervention implementation, this modified HTL curriculum training was followed by a series of classroom observations and individual coaching by a therapist certified in trauma and attachment. Performance observation assured fidelity to the model. Group trainings were followed by meetings with the staff and consultant.

In addition to training, the school implemented the Monarch Room (MR) and Dream Catcher Room (DC), alternatives to traditional school discipline policies, to increase class time. When students become too frustrated to remain in the classroom setting, they are either sent to the MR for redirection and de-escalation or choose to go to the MR on their own. Once students are in the MR, a trauma-trained paraprofessional helps them de-escalate, refocus, and return to class. Various intervention strategies are employed in the MR, including problem solving, talk therapy, and use of sensorimotor activities. The MR is available throughout the school day. This process generally occurs within a short period of time (approximately 10 minutes), and on return to the classroom, the student can demonstrate perseverance and emotional control, helping to create a safe and orderly environment where all students are free to learn. If the student needs more than 10 minutes to regain composure, she is sent to the DC room. The DC room is an extension of the MR, and gives students more time to work out the problem. Students can remain in the DC for the entire school day, although they generally return to class after an hour or so.

Participants

All students in the study were enrolled between September 2012 and June 2013 at a public charter school that works exclusively with female court-involved students who have a history of abuse and neglect and were subsequently placed in a residential treatment facility located in the Midwest. Most participants (86%) were current residents at the residential treatment center during the study. Some (14%) are young women who have returned to community living, but continue to attend the same school. Of the 184 students who enrolled in the program in the 2012–2013 academic year and qualified for inclusion in the study, baseline data were available for 143. Matched data were available for analysis on students who completed both the baseline and posttest surveys ($n = 70$).

The majority of participants ($n = 70$) were African American (66%), followed by White (20%), Hispanic (3%), and other races or ethnicities (11%). The racial demographics presented in the sample reflect the general population of court-involved youth in Wayne County, Michigan (Wayne County Department of Children and Family Services, 2011). The charter school is a middle and high school. As the majority of young people served by residential centers are between the ages of 14 and 18 (Sickmund et al., 2011), it is not surprising that this sample includes a much larger representation of high school students (94%). The average length of stay is 3 to 6 months (Sickmund et al., 2011), so many participants were not enrolled at the charter school for the entire academic year. Seventy-two percent of the participants were exposed to the intervention for 6 months or more. Only 28% of the students who took the survey in September 2012 were still enrolled at the school by June 2013.

Measures

Sociodemographic characteristics were collected using student administrative data captured through PowerSchool (Pearson School Systems, 2000–2013), including age, race, grade level, and length of time enrolled.

STUDENT NEEDS

The Student Needs Survey (SNS) is a 25-item, self-reporting instrument using Glasser's choice theory to assess a child's school needs and measures the child's perceptions of how needs are being met (Burns, Vance, Szadokierski, & Stockwell, 2006). The measure is composed of five subscales to assess five basic needs that must be met for physiological and psychological health (Survival, Power, Belonging, Freedom, and Fun) (Burns et al., 2006). Survival represents biological desires for food, water, shelter, reproduction, safety, and security (e.g., "The school is neat and clean"). Power relates to desire for

status, dominance, respect, and achievement and is the most difficult to satisfy (e.g., "People at school listen to what I have to say"). Belonging refers to the need to be with others, to feel cared for, and to be in cooperative relationships (e.g., "I feel included by other students in this school"). Freedom, which often conflicts with Power and Belonging to some extent, is the desire to do what one wants to do and to be able to make choices (e.g., "I can choose my own partners for school projects"). Finally, Fun is the desire to play, laugh, and seek enjoyment (e.g., "I have fun with my friends in class") and is hypothesized to be linked to the ability to learn (Glasser, 2001). Students responded by selecting a point on a 5-point Likert scale, with 0 indicating *never true* and 4 indicating *always true*. The scores are summed, resulting in total scores that range from 0 (*strong need*) to 100 (*weak need*) for each respondent. In their original sample of students in a relatively high-functioning general education school, Burns et al. (2006) determined that a score of 75 and higher represented "adequately met needs." They calculated the coefficient alpha internal consistency reliability for the total scale to be .92 (with subscales ranging from .69–.75) and the 2-week test–retest reliability coefficient for the total scale at .96 (with subscales ranging from .80–.91). We established validity with a confirmatory factor analysis, which resulted in a goodness-of-fit index of .94 and comparative fit index of .81. In this study, the Cronbach's alpha internal consistency reliability coefficient was .92 at both pre- and posttest for the SNS total score. Subscale scores for this study included .73 (Survival), .77 (Power), .77 (Belonging), .69 (Freedom), and .65 (Fun).

POSTTRAUMATIC SYMPTOMS

The Child Report of Post-traumatic Symptoms (CROPS) is a 25-item, self-report instrument that assesses symptoms of PTSD in youth (e.g., "I find it hard to concentrate; I think about bad things that have happened"; Greenwald & Rubin, 1999). Each item is rated according to frequency using a 3-point scale ranging from 0 (*none*) to 2 (*lots*). Studies have shown it is a reliable measure, with an overall alpha score of .91; on retesting 4 to 6 weeks later the correlation remained at .80 (Greenwald & Rubin, 1999). The total possible range of scores is 0 to 50 with a cutoff score of 19; scores higher than 19 indicate greater problems with PTSD. In this sample, the Cronbach's alpha was .91 at pre- and .92 at posttest.

SELF-ESTEEM

The Rosenberg Self-Esteem Scale (RSE) is the most widely used self-esteem measure in the social sciences. It is a 10-item, self-report measure that assesses the self-esteem of high school students among other populations. Sample items include, "I feel that I am a person of worth" and "I take a positive

attitude towards myself." Each item is rated on a 4-point scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). The total possible score ranges from 10 to 40. A cutoff score of 30 or higher indicates high self-esteem. Studies using the RSE indicate that it has high internal consistency and reliability with alphas ranging between .77 and .88 with test–retest correlations ranging from .85 to .88 (Rosenberg, 1989). In this sample, the Cronbach's alpha was .86 at both pre- and posttest.

PERCEPTIONS OF SCHOOL CLIMATE

Finally, students were asked to respond to a series of six closed-ended questions developed by the research team to gather information on student perceptions of school climate change. These questions asked about students' relationships with teachers and staff, and are depicted in Table 1. Means and standard deviations are reported for each item on both the pre- and posttest.

Procedure

All students enrolled in the school at each data point were administered the instruments before and after the teachers and staff were trained. Not all students at pretest were still enrolled in the facility at posttest and vice versa, so only those with both pre- and posttest data were included in this study. The school chose to use its school counselor to administer pre–post surveys. To improve chances of students feeling free to be fully honest in their responses, however, the school instructed the counselor to let students complete the surveys independently, with answers covered and envelopes in which to submit final surveys, and to intervene only if the students had questions.

TABLE 1 Students' Perceptions of School Climate Before and After Implementation of the Curriculum

Item	Pretest score		Posttest score		
	μ	SD	μ	SD	t(68)
1. Of those teachers how many cared about your learning?	5.91	1.59	5.52	1.80	−1.87
2. Of those teachers how many did not meet your needs?	2.90	2.22	2.86	1.92	0.17
3. Of those teachers how many have fair rules and expectations?	5.72	1.75	5.49	1.73	−0.93
4. Of those teachers how many have good management of the classroom to create an environment you can learn in?	5.61	1.71	5.21	1.71	1.72

Analysis

Demographic and survey data were entered into SPSS and explored using frequencies and descriptive statistics. We employed a series of paired sample *t* tests to explore relationships between participants' pre- and posttest scores on the SNS, CROPS, and RSE measures. Two-tailed tests were used in the analysis, and the alpha level was set at .05. Effect sizes (*d*) were calculated using Cohen's *d* for a more concrete impression of statistically significant results.

RESULTS

The purpose of this study was to implement and evaluate the effects of the modified HLC trauma-informed teacher training intervention using a one group, pre–posttest design. Data normality was established with preliminary analysis. Table 2 depicts the means and standard deviations for Likert-type measures both pre- and postintervention.

The Student Needs scores indicate a wide range of youths' perceptions of their needs being met. A quick look at simple means and standard deviations might make one wonder why some needs became stronger over time (i.e., power, fun). However, in most cases, there was no statistically significant difference, and thus, measurement error is likely to blame. When looking at the subscale scores for belonging—Power, Freedom, Survival, and Fun—only Power rose to a high level with an average pretest score just slightly over 15. On the self-esteem measure, scores were in the normal to high range with an average of 27 in the pre- and posttest groups, signifying that self-esteem is not as much of an issue as expected. Because many of these students have documented histories of child abuse and neglect and exposure to violence,

TABLE 2 Means and Pairwise Comparisons for Pre–Post Scaled Responses

	Pretest		Posttest		
	μ	*SD*	μ	*SD*	*t*(69)
SNStotal	68.15	13.56	65.24	15.72	−1.43
Belonging	14.11	3.43	14.18	4.13	0.12
Power	15.15	2.99	14.52	3.81	−1.30
Freedom	12.42	3.24	12.27	3.59	−0.27
Survival	13.43	3.45	11.70	3.98	−3.08**
Fun	13.05	3.53	12.57	3.45	−1.03
RSE	27.96	6.24	27.97	6.16	−0.03
CROPS	22.7	10.31	20.16	9.39	−2.53*

Note: n = 70. SNS = Student Needs Survey; RSE = Rosenberg Self-Esteem Scale; CROPS = Child Report of Post-traumatic Symptoms.
*p < .05. **p < .01.

it is not surprising that several of them scored in the range of clinical significance for PTSD. The average pretest score on the CROPS was 23 and posttest was 20.

To compare students' pre- and posttest intervention scores, we conducted a series of paired sample t tests (see Table 2). Of the indicators tracked on the SNS, there appears to be only a significant difference between the pretest ($M = 13.43$, $SD = 2.99$) and posttest survival subscale ($M = 11.70$, $SD = 3.98$), $t(69) = -3.08$, $p < .01$, $d = .35$. This effect size was medium. In the case of the survival subscale, the statistically significant finding of a decrease in scores was unexpected, as it indicates more needs being unmet after the curriculum was implemented. There was also a significant difference in the pretest ($M = 22.70$, $SD = 10.31$) and post-est ($M = 20.16$, $SD = 9.39$) scores for posttraumatic symptoms, $t(69) = -2.53$, $p < .05$, $d = .30$. This effect size was medium and indicates a reduction in such symptoms. Table 1 reports the results of paired sample t tests to assess differences in student perceptions of school climate before and after curriculum implementation.

None of these measures was statistically significant. Students did not notice changes in teacher behavior in the trauma-informed curriculum. They felt a vast majority of teachers were responsive to their needs before the intervention.

DISCUSSION

The purpose of this study was to test the impact of a trauma-informed school intervention on student perceptions of trauma symptomatology, self-esteem, and school climate. Three primary themes were observed in the results. First, the students reported clinically significant levels of PTSD, but their symptoms reduced significantly after implementation of the trauma-informed teaching curriculum. This suggests the intervention was somewhat effective. Second, self-esteem in the sample was higher than anticipated and did not change significantly over the academic year. This finding warrants additional investigation. Third, students' needs for survival increased rather than decreased over the observation period. Students responded positively to teachers, indicating that the teachers who work at this school might be more aware of and sensitive to trauma than teachers in other schools even before exposure to the training curriculum. Students might have been more critical of the school environment since being stimulated to critically analyze it.

We also offer several possible interpretations and explanations for these findings. Specifically regarding the observed decrease in survival needs being met, it is important to consider the individual items comprising that subscale. It included feelings of teachers caring, order in the school, safety in the school, other students being kind, and the school being neat and clean. These cover a variety of issues and it is possible that, although this seems counterintuitive,

simply having a conversation about the issues makes the girls more attuned to and aware of their environment, which might make them more overtly scrutinizing of it. However, it is important to also consider the criterion met by the average response, which indicates that overall, their survival needs averaged just below the threshold for needs met ($M = 14.11$ across five-item subscale, which equates to 2.82 per item). This might be affected by attachments these girls have experienced over time, which could in turn affect perceptions of experiences in the school environment. Additionally, systems change is slow, and thus from an ecological perspective, the students might not have felt or observed the change at a pace they would have liked.

It is essential to note, however, that the changes were not statistically significantly different. Nonetheless, it is also important to consider that when youth have experienced fear and terror as a result of abuse and neglect, they often feel helpless and have oversensitized fear-alarm reactions whenever they feel threatened (Oehlberg, 2006). Even in the school environment, those conditions can prompt hyperarousal and related physical reactions (Linning & Kearney, 2004), which directly complicate learning and class-room climates. Because they cannot verbally communicate their sense of fear and doom, they instead disrupt the classroom. Unfortunately, uninformed adults might interpret such behaviors as disrespect, defiance, or attention deficit hyperactivity disorder (Oehlberg, 2008) rather than PTSD, and therefore administer punishment. The youths then interpret that reaction as yet another rejection, setting in motion a pattern of emotional insecurity and behavioral issues that greatly interfere with learning in the future. From an attachment theory perspective, this reflects their weak early attachments to caregivers, and if this cycle is repeated, the youths' unstable attachment styles might continue. Furthermore, more work needs to be done to better understand why they perceive their survival needs to be less catered to over time. It is also possible that the conversations throughout the year regarding trauma-informed teaching created a hyperawareness to the issues and, thus, a more scrutinized evaluation of the questions and the school's responsiveness to their specific categories of needs at posttest.

We should also point out that the students' unchanged perceptions of safety and climate at school and feelings of safety in general might come from being in a residential treatment agency (a gated and guarded facility) and students of a public charter school. This could reflect the positive impact that collaboration and coordination of child welfare, juvenile justice, and education authorities can have in decreasing trauma symptoms in the classroom and increasing educational well-being, as the residential treatment facility and school offer a more protected and structured life for these students. This likely helps explain the reduction in PTSD symptoms as well.

Implications for Policy and Practice

Educators and school staff can help mediate these youths' struggles living with unprocessed traumatic memories. The potential goes beyond identifying and referring students with traumatic stress to outside services. Although schools are not mental health facilities and teachers are not therapists, teaching these students requires alternative strategies and skills that have not traditionally been taught. Integrating trauma sensitivity into the educational system constitutes an important and necessary paradigm shift. Understanding the impact of trauma on learning has huge implications for school policies and teaching techniques.

Integration of trauma sensitivity needs to begin with school administrators who regularly assure students and staff they will be physically and emotionally safe. Furthermore, the power of relationships should be acknowledged and practiced. This is critical from an attachment perspective, as these students have learned over many years to be self-protective and mistrusting of others. It requires time and care to build those relationships, as is the goal of the Theraplay approach described earlier.

Integration of trauma sensitivity in schools that serve court-involved youth also necessitates interagency coordination, collaboration, and information sharing between child welfare, juvenile justice, mental health, and education systems to ensure educational stability and continuity. Although best practice calls for collaboration across public systems (Best et al., 2009), this has been extremely difficult for the public sector to achieve (e.g., Noonan et al., 2012). In any intervention approach, the whole ecology of youths' lives should be addressed; Bronfenbrenner's bio-ecological theory perspective and the current results support the need to address the individual and intrapersonal context and factors in the mesosystem, exosystem, and macrosystem levels. For example, in addition to understanding the dynamics of school personnel and students, it is also important to consider peer relationship dynamics. Systems change complexity should also be continually revisited within the school context to take a macrolevel perspective and thus drive momentum toward important changes.

Strengths and Limitations of the Study

This research has strengths and limitations. This is one of the first studies to assess the impact of a trauma-informed teaching curriculum on court-involved students' perceptions of the school environment. Another strength is the multidisciplinary team approach and inclusion of community partners in the research process. A critical highlight of this research is our exclusive focus on this all-girls residential facility. Gender differences in how students are affected by trauma exposure have been established, so these results might not generalize to boys and those who have not experienced residential

treatment. Nonetheless, our aim was to better understand these dynamics for young women with traumatized backgrounds.

There were also a few methodological weaknesses regarding data collection. First, project funding focused primarily on service delivery and not evaluation. Due to limited funding, the school relied on its school counselor to collect the data. As a result, there is the potential that students' responses were influenced, especially those related to school climate. Also, there was no comparison group, and the sample was relatively small. With larger samples, potential extraneous variables can be controlled for or explicitly investigated for their roles in these dynamics (e.g., baseline trauma symptoms, age, ethnicity, or length of stay). Another weakness inherent to the population and thus difficult to remedy is the transient nature of court-involved students, resulting in smaller pre–post match ups. A larger sample and a more stringent research design would strengthen future research and build on these preliminary findings.

CONCLUSION

Despite the limitations, the results of this study are encouraging and can be used preliminarily by researchers and practitioners as well as support the need for future research. A trauma-informed training curriculum is a powerful tool for educators interested in closing the achievement gap for traumatized youth. Preparing and recruiting trauma-informed learning facilitators to implement training should also be a high priority.

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REFERENCES

American Academy of Pediatrics: Committee on Early Childhood, Adoption and Dependent Care. (2000). Developmental issues for young children in foster care. *Pediatrics*, *106*, 1145–1150. doi:10.1542/peds.106.5.1145

Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C., Perry, B. D., . . . Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood: A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry Clinical Neuroscience*, *256*, 174–186. doi:10.1007/s00406-005-0624-4

Bath, H. (2008). The three pillars of trauma-informed care. *Reclaiming Children & Youth*, *17*(3), 17–21. Retrieved from http://reclaimingjournal.com

Best, A., Terpstra, J. L., Moor, G., Riley, B., Norman, C. D., & Glasgow, R. E. (2009). Building knowledge integration systems for evidence-informed decisions. *Journal of Health Organization and Management*, *23*, 627–641. doi:10.1108/14777260911001644

Black, P. J., Woodworth, M., Tremblay, M., & Carpenter, T. (2012). A review of trauma-informed treatment for adolescents. *Canadian Psychology/Psychologie Canadienne*, *53*, 192–203. doi:10.1037/a0028441

Booth, P., & Jemberg, A. (1998). *Theraplay*. San Francisco, CA: Jossey-Bass.

Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment*. New York, NY: Basic Books.

Bowlby, J. (1980). *Attachment and loss: Vol. 3. Loss, sadness, and depression*. New York NY: Basic Books.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, *32*, 513–531. doi:10.1037/0003-066X.32.7.513

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology*, *22*, 723–742. doi:10.1037/0012-1649.22.6.723

Bruce, E., & Waelde, L. C. (2008). Relationships of ethnicity, ethnic identity, and trauma symptoms to delinquency. *Journal of Loss and Trauma*, *13*, 395–405. doi:10.1080/15325020802171326

Burley, M. (2010). *High school graduation and dropout trends for Washington State foster youth (2005–2009)* (Rep. No. 10-10-3901). Olympia, WA: Washington State Institute for Public Policy.

Burley, M., & Halpern, M. (2001). *Educational attainment of foster youth: Achievement and graduation outcomes for children in state care*. Olympia, WA: Washington State Institute for Public Policy.

Burns, M., Vance, D., Szadokierski, I., & Stockwell, C. (2006). Student Needs Survey: A psychometrically sound measure of the five basic needs. *International Journal of Reality Therapy, 25*(2), 4–8. Retrieved from http://www.wglasser.com/int-journals

Casey Family Programs. (2013). *Endless dreams*. Retrieved from http://www.casey.org/resources/initiatives/EndlessDreams/

Cook, A., Spinazzola, J., Ford, J., Lanktree, C., Blaustein, M., Cloitre, M., . . . van der Kolk, B. (2005). Complex trauma in children and adolescents. *Psychiatric Annals*, *35*, 390–398. doi:10.1002/jclp.21990

Courtney, M. E., Terao, S., & Bost, N. (2004). *Midwest evaluation of the adult functioning of former foster youth: Conditions of youth preparing to leave state care*. Chicago, IL: Chapin Hall Center for Children at the University of Chicago.

Crosby, S. D., Day, A. G., Baroni, B. A., & Somers, C. L. (2015). School staff perspectives on the challenges and solutions to working with court-involved students. *Journal of School Health*, 85(6), 347–354.

Day, D. M., Hart, T. A., Wanklyn, S. G., McCay, E., Macpherson, A., & Burnier, N. (2013). Potential mediators between child abuse and both violence and victimization in juvenile offenders. *Psychological Services*, 10(1), 1–11. doi:10.1037/a0028057

Delaney-Black, V., Covington, C., Ondersma, S. J., Nordstrom-Klee, B., Templin, T., Ager, J., ... Sokol, R. J. (2002). Violence exposure, trauma, and IQ and/or reading deficits among urban children. *Archives of Pediatrics & Adolescent Medicine*, 156, 280–285. doi:10.1001/archpedi.156.3.280

Duke, N. N., Pettingell, S. L., McMorris, B. J., & Borowsky, I. W. (2010). Adolescent violence perpetration: Associations with multiple types of adverse childhood experiences. *Pediatrics*, 125, e778–786. doi:10.1542/peds.2009-0597

Ford, J. D., Chapman, J., Connor, D. F., & Cruise, K. R. (2012). Complex trauma and aggression in secure juvenile justice settings. *Criminal Justice and Behavior*, 39, 694–724. doi:10.1177/0093854812436957

Ford, J. D., Chapman, J. F., Hawke, J., & Albert, D. (2007). *Trauma among youth in the juvenile justice system: Critical issues and new directions*. National Center for Mental Health and Juvenile Justice Research and Program Brief. Retrieved from www.ncmhjj.com

Glasser, W. (2001). *Counseling with choice theory*. New York, NY: HarperCollins.

Grande, T. L., Hallman, J. M., Underwood, L. A., Warren, K. M., & Rehfuss, M. (2012). Treating detained juveniles: Measuring mental health traits and gender differences. *Review of European Studies*, 4(5), 14–23. doi:10.5539/res.v4n5p14

Greene, R., & Ablon, S. (2006). *Treating explosive kids: The collaborative problem-solving approach*. New York, NY: Guilford.

Greenwald, R., & Rubin, A. (1999). Assessment of posttraumatic symptoms in children: Development and preliminary validation of parent and child scales. *Research on Social Work Practice*, 9, 61–75. doi:10.1177/104973159900900105

Greeson, K. P., Briggs, E. C., Kisiel, C. L., Layne, C. M., Ake, G. S., Ko, S. J., ... Fairbank, J. A. (2011). Complex trauma and mental health in children and adolescents placed in foster care: Findings from the National Child Traumatic Stress Network. *Child Welfare, 90*(6), 91–108. Retrieved from http://www.cwla.org/pubs/periodicals.htm

Griffin, G. (2011). *Public systems: Responding to students affected by trauma*. Lecture notes: Child and Family Policy Forum, University of Chicago, Chicago, IL. Retrieved from http://www.chapinhall.org/events/policy/child-family-pilicy-forum.

Griffin, G., McClelland, G., Holzberg, M., Stolbach, B., Maj, N., & Kisiel, C. (2011). Addressing the impact of trauma before diagnosing mental illness in child welfare. *Child Welfare, 90*(6), 69–89. Retrieved from http://www.cwla.org/pubs/periodicals.htm

Grogger, J. (1997). Local violence and educational attainment. *The Journal of Human Resources*, *32*, 659–682. doi:10.2307/146425

Hummer, V. L., Dollard, N., Robst, J., & Armstrong, M. I. (2010). Innovations in implementation of trauma-informed care practices in youth residential treatment: A curriculum for organizational change. *Child Welfare, 89*(2), 79–95. Retrieved from http://www.cwla.org/pubs/periodicals.htm

Hurt, H., Malmud, E., Brodsky, N. L., & Giannetta, J. (2001). Exposure to violence: Psychological and academic correlates in child witnesses. *Archives of Pediatrics & Adolescent Medicine*, *155*, 1351–1356. doi:10.1001/archpedi.155.12.1351

Ko, S. J., Ford, J. D., Kassam-Adams, N., Berkowitz, S. J., Wilson, C., Wong, M., … Layne, C. M. (2008). Creating trauma-informed systems: Child welfare, education, first responders, health care, juvenile justice. *Professional Psychology: Research and Practice*, *39*, 396–404. doi:10.1037/0735-7028.39.4.396

Kools, S. M. (1997). Adolescent identity development in foster care. *Family Relations*, *46*, 263–271. doi:10.2307/585124

Lawrence, R., & Hesse, M. (2010). *Juvenile justice: The essentials*. Los Angeles, CA: Sage.

Linning, L. M., & Kearney, C. A. (2004). Post-traumatic stress disorder in maltreated youth: A study of diagnostic comorbidity and child factors. *Journal of Interpersonal Violence*, *19*, 1087–1101. doi:10.1177/0886260504269097

Luke, N., & Coyne, S. M. (2008). Fostering self-esteem: Exploring adult recollections on the influence of foster parents. *Child & Family Social Work*, *13*, 402–410. doi:10.1111/j.1365-2206.2008.00565.x

Macomber, J. (2009). *Intentions and results: A look back at the Adoption and Safe Families Act*. Washington, DC: Urban Institute.

Manning, E. (2008). *Attachment representations and life functioning of young adults "aging out" of foster care: Identifying factors involved in risk and resilience*. New York, NY: New School University.

Massachusetts Advocates for Children. (2005). *Helping traumatized children learn*. Boston, MA: Author.

Miller, N. A., & Najavits, L. M. (2012). Creating trauma-informed correctional care: A balance of goals and environment. *European Journal of Psychotraumatology*, *3*, 1–8. doi:10.3402/ejpt.v3i0.17246

Moore, K., Marlene, M., & Holland, R. (1997). A new perspective on youth care programs: Using attachment theory to guide interventions for troubled youth. *Residential Treatment for Children & Youth*, *15*(3), 1–24. doi:10.1300/J007v15n03_01

Nation, T. (2003). Creating a culture of peaceful school communities. *International Journal for the Advancement of Counselling*, *25*, 309–315. doi:10.1023/B:ADCO.0000005530.72520.40

National Traumatic Stress Network. (2008). *Child trauma toolkit for educators*. Retrieved from http://www.nctsn.org/resources/audiences/school-personnel/trauma-toolkit

Noonan, M., Matone, M., Zlotnik, S., Hernandez-Mekonnen, R., Watts, C., Rubin, D., & Mollen, C. (2012). Cross-system barriers to educational successes for children in foster care: The frontline perspective. *Children and Youth Services Review*, *34*, 403–408. doi:10.1016/j.childyouth2011.11.006

Oehlberg, B. (2006). *Reaching and teaching stressed and anxious learners in grades 4–8: Strategies for relieving distress and trauma in schools and classrooms*. Thousand Oaks, CA: Corwin.

Oehlberg, B. (2008). Why schools need to be trauma informed. *Trauma and Loss: Research and Interventions, 8*(2). Retrieved from http://www.ticinstitute.org/v5n2.html

Office of Juvenile Justice and Delinquency Prevention. (2013). *Statistical briefing book* [Data file]. Retrieved from http://www.ojjdp.gov/ojstatbb/court/qa06201.asp?qaDate=2010

Pearson School Systems. (2000–2013). *PowerSchool*. Retrieved from http://www.powerschool.com/products/powerschool/

Pecora, P. J., Kessler, R. C., Williams, J., O'Brien, K., Downs, A. C., English, D., . . . Wiggins, T. (2005). *Improving family foster care: Findings from the Northwest Foster Care Alumni Study*. Seattle, WA: Casey Family Programs.

Penner, C., & Wallin, D. (2012). School attachment theory and restitution processes: Promoting positive behaviors in middle years schools. *Canadian Journal of Educational Administration and Policy, 137*, 1–36. Retrieved from http://www.umanitoba.ca/publications/cjeap

Postlethwait, A. W., Barth, R. P., & Guo, S. (2010). Gender variation in delinquent behavior changes of child welfare-involved youth. *Children and Youth Services Review, 32*, 318–324. doi:10.1016/j.childyouth.2009.09.012

Richardson, M. M., Coryn, C. L. S., Henry, J., Black-Pond, C., & Unrau, Y. (2012). Development and evaluation of the trauma-informed system change instrument: Factorial validity and implications for use. *Child and Adolescent Social Work Journal, 29*, 167–184. doi:10.1007/s10560-012-0259-z

Rivard, J. C., Bloom, S. L., Abramovitz, R., Pasquale, L. E., Duncan, M., McCorkle, D., & Gelman, A. (2003). Assessing the implementation and effects of a trauma-focused intervention for youths in residential treatment. *Psychiatric Quarterly, 74*, 137–154. doi:10.1023/A:1021355727114

Rosenberg, M. (1989). *Society and the adolescent self-image* (Rev. ed). Middletown, CT: Wesleyan University Press.

Rushton, A., Mayes, D., Dance, C., & Quinton, D. (2003). Parenting late-placed children: The development of new relationships and the challenge of behavioural problems. *Clinical Child Psychology and Psychiatry, 8*, 389–400. doi:10.1177/1359104503008003008

Salazar, A. M., Keller, T. E., Gowen, L. K., & Courtney, M. E. (2012). Trauma exposure and PTSD among older adolescents in foster care. *Social Psychiatry and Psychiatric Epidemiology, 48*, 545–551. doi:10.1007/s00127-012-0563-0

Shin, H., & Poertner, J. (2002). *The well-being of older youth in out-of-home care who are headed to independence*. Urbana, IL: Children and Family Research Center, University of Illinois Urbana-Champaign, School of Social Work.

Shonk, S. M., & Cicchetti, D. (2001). Maltreatment, competency deficits, and risk for academic and behavioral maladjustment. *Developmental Psychology, 37*(1), 3–17. doi:10.1037/0012-1649.37.1.3

Sickmund, M., Sladky, T. J., Kang, W., & Puzzanchera, C. (2011) *Easy access to the census of juveniles in residential placement*. Retrieved from http://www.ojjdp.gov/ojstatbb/ezacjrp/

Smithgall, C., Gladden, R. M., Howard, E., Goerge, R., & Courtney, M. (2004). *Educational experiences of children in out-of-home care*. Chicago, IL: Chapin Hall Center for Children at the University of Chicago.

Snowman, R., & McCown, R. (2012). *Psychology applied to teaching* (13th ed.). Belmont, CA: Wadsworth.

U.S. Department of Health and Human Services. (2012). *Adoption and foster care analysis and reporting system*. Washington, DC: Author. Retrieved from http://www.acf.hhs.gov/programs/cb/research-data-technology/statistics-research/afcars

U.S. Government Accountability Office. (2004). *HHS actions could improve coordination of services and monitoring of states' independent living programs* (GAO-05-25). Washington, DC: Author. Retrieved from http://www.gao.gov/assets/250/244829.pdf

Unrau, Y. A., Seita, J. R., & Putney, K. S. (2008). Former foster youth remember multiple placement moves: A journey of loss and hope. *Children and Youth Services Review, 30*, 1256–1266. doi:10.1016/j.childyouth.2008.03.010

Wayne County Department of Children and Family Services. (2011). *Juvenile justice services statistical report through FY 2011*. Detroit, MI: Juvenile Services Division.

Wolpow, R., Johnson, M. M., Hertel, R., & Kincaid, S. O. (2009). *The heart of learning and teaching: Compassion, resiliency, and academic success*. Washington State Office of Superintendent of Public Instruction (OSPI) Compassionate Schools.

Wong, M., Rosemond, M. E., Stein, B. D., Langley, A. K., Kataoka, S. H., & Nadeem, E. (2007). School-based intervention for adolescents exposed to violence. *The Prevention Researcher, 14*(1), 17–20. Retrieved from http://www.tpronline.org