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ORIGINAL ARTICLE

Trauma and Violence as Predictors of Internalizing and Externalizing Symptoms of Youth in Residential Child Welfare Placements

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Abstract

Youth in residential treatment centers have high rates of internalizing and externalizing symptoms, and most youth in residential placements do not demonstrate long-term positive improvements in mental health. These youth also often experience high levels of exposure to violence and trauma, yet little is known about the interrelationships between exposure to violence, trauma, and mental health outcomes including internalizing and externalizing symptoms. As such, the primary purpose of this study was to determine the linkages between youth exposure to violence, trauma, and internalizing and externalizing symptoms. The current study examined these interrelationships and tested gender and race as moderators. The sample included youth in residential treatment with a mean age of 13.75 years, a diverse racial makeup, and almost an equal percentage of males and females. Trauma and exposure to violence were associated with internalizing and externalizing symptoms, and gender significantly moderated the relationship between trauma and externalizing symptoms, demonstrating a strong positive relationship for males in particular. Results highlight key associations between trauma and exposure to violence and youths' internalizing and externalizing symptoms. Findings also revealed that gender moderated the link between trauma and externalizing symptoms with a positive association for males and a negligible association for females.

Keywords Children · Externalizing symptoms · Internalizing symptoms · Trauma · Violence

Residential out-of-home placements for youth involved with the child welfare system are typically a last resort for those who have experienced unsuccessful placements in less restrictive home-based care (Knoverek et al. 2013). Youth in residential placements have more serious mental health concerns, including internalizing and externalizing symptoms, compared to peers in other out-of-home settings (Baker et al. 2007; van Dam et al. 2011), and most youth in residential care do not demonstrate long-term positive improvements in mental health (den Dunnen et al. 2012; Frensch and Cameron 2002). There is an emerging push to recognize the mental health concerns of youth in residential placements as possible symptoms of exposure to violence and trauma (e.g., Collin-Vezina et al. 2011; Zelechoski et al. 2013). Indeed, youth in residential settings have high levels of trauma exposure and histories of child maltreatment (Briggs et al. 2012); however, little is known about the combination of trauma and mental health symptoms of youth in residential care (Zelechoski et al. 2013). The primary aim of this study was to determine the linkages between youth exposure to violence, trauma, and internalizing and externalizing symptoms of youth in residential out-of-home care.

For youth involved with the child welfare system (CWS), residential out-of-home placements are more restrictive compared to kinship and foster care settings (Collin-Vezina et al. 2011), and with the Family First Prevention Services Act (P.L. 115–123) there is increased pressure to demonstrate improved mental health outcomes of youth in residential settings. This is important because the mental health concerns of youth in residential placements are well documented, and prevalence rate

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of psychological disorders "far exceeds" rates of youth in the general community (Zelechoski et al. 2013, p. 641). However, the mental health services often provided to CWS youth in residential settings may not match their needs (Zelechoski et al. 2013) due to a lack of knowledge of the constellation of mental health concerns of youth in residential care (Frensch and Cameron 2002; Zelechoski et al. 2013). As such, a goal of this paper was to contribute to the knowledge on the mental health of CWS youth in residential settings.

Internalizing and Externalizing Symptoms

Some youth who enter residential treatment struggle significantly with internalizing symptoms. These internalizing symptoms, often presented as depression or anxiety, can be serious because many youth suffering with internalizing symptoms have histories of self-injurious behaviors and suicidal ideation (Baker et al. 2007; Briggs et al. 2012; Frensch and Cameron 2002). Although longitudinal research demonstrates little improvement in mental health symptoms of youth in residential care (den Dunnen et al. 2012; Frensch and Cameron 2002), results of a meta-analysis demonstrated that improvements in internalizing symptoms were even smaller than improvements in externalizing symptoms (Knorth et al. 2008).

Youth in residential settings also tend to demonstrate externalizing symptoms. Such youth are often described as destructive, aggressive, defiant and oppositional, with some of their main challenges including aggressive behaviors, impulse control, and difficulty understanding and following rules (Frensch and Cameron 2002; Knoverek et al. 2013). Youth who exhibit externalizing symptoms are more likely to be characterized as having behavioral problems and diagnosed with conduct disorder (Baker et al. 2007; Frensch and Cameron 2002; Knoverek et al. 2013; Lee and Thompson 2008; Silver et al. 1992).

Theoretical Frameworks

A developmental trauma perspective (van der Kolk 2017) provides a framework for understanding how exposure to violence and trauma may be the underpinning of CWS youths' expressions of internalizing and externalizing symptoms. Under the developmental trauma framework, chronic exposure to maltreatment and violence can have pervasive effects on child development (van der Kolk 2017). Chronic stress may affect a youth's ability to integrate sensory, cognitive, and emotional experiences, which, in turn, can result in fight, flight, or freeze responses to stress (van der Kolk 2017). Over time and repeated exposure to stressors, the child may not be able to modulate their arousal and effectively manage their stress responses (van der Kolk 2017). Chronically traumatized children may demonstrate deficits in emotional self-regulation characterized by poorly modulated affect and impulse control, and aggression against self and others (van der Kolk 2017). The developmental trauma framework suggests that these symptoms are often misunderstood and ascribed by an array of diagnoses, including oppositional defiant disorder, conduct disorder, depression and anxiety (Zelechoski et al. 2013), rather than attempts to minimize threats and regulate emotional distress (van der Kolk 2017).

Trauma and Violence

Many youth involved with the CWS often experience trauma as an antecedent to their removal from the home (Briggs et al. 2012; Greeson et al. 2011) and the majority of youth in residential care have high levels of trauma exposure (Brady and Caraway 2002; Briggs et al. 2012; Zelechoski et al. 2013). In fact, evidence suggests that of youth in residential placements who have traumatic histories, as many as 92% reported experiencing multiple or chronic traumatic events (Zelechoski et al. 2013). Research varies on the most prevalent type of trauma experienced for youth in residential care, but exposure to violence is common (Zelechoski et al. 2013), and exposure to violence is correlated with higher levels of both internalizing and externalizing symptoms (DuRant et al. 1994; El-Sheikh and Harger 2001; Evans et al. 2008; Flannery et al. 2001; Fantuzzo et al. 1991; Litrownik et al. 2003; Spilsbury et al. 2007).

Research specifically examining the interrelationships between exposure to violence, trauma, and mental health outcomes of CWS youth in residential placements, however, is quite limited. One study of 53 youth in residential care in Montreal found significant associations between trauma and symptoms of anxiety, depression, and anger with females demonstrating higher rates of post-traumatic stress disorder (PTSD) than males (Collin-Vezina et al. 2011). Another study compared different groups of youth in residential settings in New York. Findings suggested that compared to youth who entered residential programs due to involvement with juvenile justice or from inpatient psychiatric settings, youth involved with the CWS experienced high rates of child maltreatment and demonstrated the highest levels of mental health concerns (Dale et al. 2007).

Gender and Race Differences

Although Caucasian males represent the majority of youth in residential settings, there has been an increase in the number of females and African Americans placed in residential care in recent years (Sternberg et al. 2013). Because of the emerging

changes in demographic characteristics of youth in residential settings, it may also be important to consider gender and race. Research suggests females in residential placements tend to demonstrate higher rates of internalizing symptoms compared to males (e.g., Handwerk et al. 2006), and a meta-analysis of adolescent gender differences of youth in residential settings revealed the "unique and distinct" finding that females also had higher levels of externalizing symptoms compared to males (Holtberg et al. 2016, p. 225). While some past research suggests females may struggle more than males with regard to internalizing symptoms (e.g., Handwerk et al. 2006), others suggest there are no significant differences (Singer et al. 2000). Knowing that males in residential settings also struggle with internalizing symptoms (Barry et al. 2015), we tested gender as a moderator.

Specific to race and ethnicity, minority youth are disproportionately overrepresented in the CWS (USDHHS 2018). Despite the disproportionate racial composition of youth in the CWS, the issue of mental health racial disparities of children in the CWS has largely been ignored (Burns et al. 2004; Fluke et al. 2010), and research specific to minority youth in residential care is limited. One study that examined race as a predictor of mental health service utilization prior to admission to residential care settings indicated that African American youth were much less likely to have accessed and used mental health care compared to Caucasian youth (Barksdale et al. 2009). This finding is consistent with other research also suggesting that youth of color are less likely to receive mental health services than their white counterparts (Garcia et al. 2012, 2015; Horwitz et al. 2012; Nguyen et al. 2007). This may help explain why racial mental health disparities increase over time (Kim and Garcia 2016). Similarly, youth of color have a higher likelihood than White peers to be referred to CWS and are more likely to be placed in out-of-home care and for longer periods of time (Church 2006; Church et al. 2005; Garcia et al. 2012).

The Present Study

In sum, youth in residential settings have high rates of mental health concerns (Connor et al. 2004). There is a growing trend to consider the mental health symptoms of youth involved with the CWS from a developmental trauma lens. According to this framework, exposure to violence and trauma may be linked with mental health symptoms (van der Kolk 2017). Unfortunately, research examining the intersections of these constructs is limited. Some suggest that in order to improve outcomes of CWS youth in residential settings, more needs to be known about specific constellations of mental health symptoms (den Dunnen et al. 2012; Frensch and Cameron 2002). As such, the primary purpose of this study was to determine the linkages between youth exposure to violence, trauma, and internalizing and externalizing symptoms. Given the changing demographic characteristics of youth in residential settings (Sternberg et al. 2013), we also tested the extent to which gender, race and ethnicity moderates those associations for youth involved with the child welfare system.

Method

Sample and Procedures

The data used for this study were derived from the National Survey of Child and Adolescent Well-Being II (NSCAW II; Dowd et al. 2010) with permission from the investigators' University Institutional Review Board (IRB# 2018.26592). The NSCAW II is a nationally representative longitudinal survey of children and families who have been the subjects of CWS investigations. The dataset includes youth who were involved in CWS investigations but remained in their homes and youth who were removed from their homes and placed in out-of-home placement settings ($n = 1676$ at wave 1). Because we were specifically interested in mental health outcomes, data were restricted to only youth who were old enough to complete the outcome measures of interest ($n = 435$). The sample was then further limited to youth who were not placed in kinship or traditional foster care settings and were instead placed in more restrictive residential settings (i.e., group homes or residential facilities) at the time of data collection ($n = 118$). Lastly, the sample was limited to youth who identified as who identified as African American, Caucasian or Hispanic ($n = 75$). The youth in the analytic sample ranged in age from 8 to 17 years with a mean age of 13.75 years ($SD = 2.5$). The racial makeup of the youth included 50% African American, 33% Caucasian, 11% American Indian, 4% Asian/Hawaiian/Pacific Islander, and 2% who reported not knowing or preferred not to answer. The ethnic identity of the subsample was 43% African American/Non-Hispanic, 24% Hispanic, 20% Caucasian/Non-Hispanic, and 13% other. Gender distribution was balanced with 51% male and 49% female participants.

Measures

Youth Internalizing and Externalizing Symptoms Youth internalizing and externalizing symptoms were measured using the Youth Self Report (YSR; Achenbach 1991), the parallel version of the parent-report Child Behavior Checklist (Achenbach and Rescorla 2001). The YSR is a widely used measure that assesses youth mental health symptoms using two "broadband" scales: internalizing and externalizing symptoms. The measure consists of 113 items measured on 3-point Likert scale (0 = not true, 1 = somewhat or sometimes true, or

2 = very true or often true). The Cronbach's alphas were $\alpha = .94$ for internalizing, $\alpha = .96$ for externalizing.

Exposure to Violence The Violence Exposure Scale for Children (VEX-R; Fox and Leavitt 1995) was used to assess the frequency of exposure to violent acts in the home. The VEX-R is a 23-item youth self-report measure that uses cards depicting 13 violent acts (Kolko et al. 2010). Youth are then asked to describe the frequency of their exposure to such acts, either as a victim or a witness, on a scale ranging from 0 = never, 1 = once, 2 = a few times, and 3 = lots of times. Cronbach's alpha of this measure for the purposes of this study was $\alpha = .90$.

Trauma Youth also completed The Trauma Symptom Checklist for Children (TSCC; Briere 1996). This measure provides an index of current post-traumatic stress (PTS) symptomology based on youth self-report. Youth indicate how often they experienced a thought, feeling, or behavior such as "bad dreams or nightmares" or "going away in my mind, trying not to think" using a 4-point scale (0 = never, 1 = sometimes, 2 = lots of times, 3 = almost all the time). The measure provides age and gender norm comparisons (*T* score mean = 50) and was standardized on a large sample of racially and economically diverse children (Kolko et al. 2010). For the present study, Cronbach's alpha was $\alpha = .93$.

Statistical Analyses

To test the hypotheses that internalizing and externalizing symptoms were a function of trauma symptoms and violence exposure and explore whether gender or race and ethnicity moderated the effects of violence and trauma, two hierarchical ordinary-least squares (OLS) regression analyses were conducted, one for internalizing and another one for externalizing symptoms. The scores for trauma and violence were centered prior to the creation of interaction terms. Gender was coded 0 for males and 1 for females. In terms of race/ethnicity, participants were in one of three groups for race/ethnicity: African American, Caucasian, or Hispanic. Only these three groups were included in the moderation analyses because the subsample size of youth who identified their race/ethnicity as other than African American, Caucasian, or Hispanic (e.g., American Indian, Pacific Islander) was too small to detect statistical differences. In the analyses, African American participants were used as the reference group and dummy coded variables were made for the Caucasian and Hispanic groups. Analyses were then run to compare the Caucasian participant group to the African American participant group and the Hispanic participant group to the African American participant group. Given the two predictors, the mediator, and the interactions between the predictors and the moderator, the current sample size of 75 youths allowed us to detect an effect size of $f^2 = .185$ or larger (Faul et al. 2007), which is between medium and large according to Cohen's (1988) conventions.

Results

Preliminary Analyses

Table 1 shows the means, standard deviations, and correlations, and Cohen's *d* for the study variables for both males and females. Correlations for males are represented below the diagonal, and females are represented above the diagonal. For males, trauma was positively correlated with both internalizing and externalizing symptoms, while violence was positively related to externalizing symptoms but not internalizing symptoms. Trauma and violence were not related to one another. For females, trauma was significantly correlated with internalizing symptoms. In contrast to males, there was a positive and significant correlation between trauma and exposure to violence for females, which was significantly correlated with internalizing and externalizing symptoms.

There were substantial mean differences, with the females having, on average, higher scores on all variables than the males. The differences between females and males were large in size and statistically significant for trauma and internalizing symptoms, while the differences for violence and externalizing symptoms were small in size and not statistically significant.

Main Analyses

In both hierarchical regression models, three variables were included in the first analytic step: trauma, exposure to violence and gender. These variables accounted for a significant amount of variance in youths' internalizing symptoms ($R^2 = .449$, $F(3, 55) = 14.947$, $p < .001$), as well as externalizing symptoms ($R^2 = .276$, $F(3, 55) = 6.994$, $p < .001$). Next, the interaction terms between trauma and gender, as well as exposure to violence and gender, were added to the regression model, which accounted for a significant proportion of the variance for internalizing symptoms ($R^2 = .455$, $F(5, 53) = 8.851$, $p < .001$) and externalizing symptoms ($R^2 = .341$, $F(5, 53) = 5.485$, $p < .001$).

As shown in Table 2, in this final model, trauma was significantly related to externalizing symptoms and gender significantly moderated that relationship. This interaction is illustrated in Fig. 1, which shows that males with high levels of trauma reported higher externalizing symptoms. Trauma was significantly related to internalizing symptoms ($p = .033$), and this relationship was independent of individuals' gender ($p = .729$). Exposure to violence was not significant for both internalizing ($p = .121$) and externalizing symptoms

Table 1 Means, standard deviations, and correlations for study variables

					Male		Female			
Variable	1	2	3	4	*M*	*SD*	*M*	*SD*	*t*	Cohen's *d*
1. Trauma	–	.532**	.609**	.252	6.00	4.997	12.24	7.529	3.739***	0.980
2. Violence	.055	–	.454*	.560**	6.53	3.902	7.76	5.423	0.993	0.261
3. Internalizing symptoms	.460*	.079	–	.506**	9.80	7.654	18.93	12.375	3.395**	0.891
4. Externalizing symptoms	.478**	.344	.762**	–	16.30	10.505	20.21	12.963	1.274	0.332

SD = standard deviation. Females' correlations are represented above the diagonal, males' correlations are represented below the diagonal. * $p < .05$. ** $p < .01$. *** $p < .001$ (2-tailed)

($p = .079$), and gender did not significantly moderate either relationship; however, particularly given the small sample size, it should be noted that results for externalizing symptoms approaches significance.

We also tested to see if race moderated the association between trauma and internalizing symptoms, trauma and externalizing symptoms, and exposure to violence and internalizing and externalizing symptoms. Using three groups for race and ethnicity: African American, Caucasian, or Hispanic, race and ethnicity did not reach statistical significance for moderation, indicating that the effects of trauma and exposure to violence on internalizing and externalizing symptoms may be independent of youth's race and ethnicity.

Discussion

The primary purpose of this study was to determine the linkages between exposure to violence, trauma, and internalizing and externalizing symptoms of youth in residential out-of-home care. Results indicated several key findings. Trauma was significantly associated with internalizing symptoms of both males and females and with externalizing symptoms of males. Moreover, exposure to violence was associated with higher levels of externalizing symptoms of males and females and internalizing symptoms of females. On average, females demonstrated higher scores on all variables compared to males. Lastly, moderation analyses indicated that males with high levels of trauma reported significantly higher externalizing symptoms.

These findings extend existing research in several important ways. The elevated rates of internalizing and externalizing mental health concerns of youth in residential placements is well established (e.g., Baker et al. 2007; van Dam et al. 2011; Zelechoski et al. 2013), and few youth in residential settings experience long-term positive improvements in their mental health (den Dunnen et al. 2012). Some suggest that the lack of improvement may be because the services provided do not match the needs of youth in residential settings (Zelechoski et al. 2013) because research specific to youth in residential care is limited (Frensch and Cameron 2002; Zelechoski et al. 2013). Findings of this study contribute to the limited research by demonstrating significant associations between exposure to violence, trauma, and mental health symptoms of youth in residential out-of-home settings.

The linkages between violence, trauma, and mental health symptoms are important and can be explained through a developmental trauma framework that suggests maltreatment

Table 2 Gender as a moderator of internalizing and externalizing symptoms

	Internalizing				Externalizing			
Predictor	Estimate	*SE*	*p*	R^2	Estimate	*SE*	*p*	R^2
Constant	12.039	1.876	.000		19.967	2.19	.000	
Step 1				.449***				.276***
Violence	.105	.411	.799		.859	.479	.079	
Trauma	.700	.321	.033		.969	.374	.012*	
Gender	4.051	2.573	.121		−.017	3.004	.996	
Step 2				.455***				.341***
Violence x Gender	.307	.543	.574		.563	.633	.378	
Trauma x Gender	.143	.410	.729		−1.081	.478	.028*	

SE Standard Error

***$p < .001$

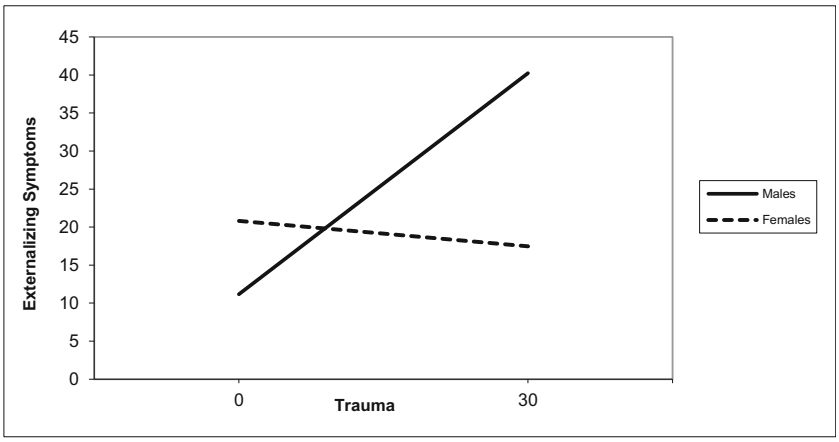

Fig. 1 Gender as a moderator of the association between trauma and externalizing symptoms

and violence may be the underpinning of some youths' expressions of internalizing and externalizing symptoms (van der Kolk 2017). Indeed, youth involved with the CWS often experience trauma prior to their removal from their family home (Briggs et al. 2012; Greeson et al. 2011), and some may continue to endure trauma post-CWS involvement (Bruskas 2008). Over time, such youth may develop ineffective coping strategies that may manifest into emotional self-regulation deficits and aggression (van der Kolk 2017). Often, the expression of these symptoms is misunderstood, and the youth becomes labeled as defiant, aggressive, or destructive (Knoverek et al. 2013). According to the developmental trauma framework, however, these symptoms are perhaps better understood as attempts to minimize threats and regulate emotional distress (van der Kolk 2017). Viewing youths' symptoms in this manner may help shape intervention efforts aimed to improve their mental health.

Because of the changing demographic characteristics of youth entering residential placements, we also explored differences based on youth gender, race and ethnicity. With regard to gender, although some research on youth in the general population indicates that, generally speaking, females tend to internalize symptoms and males externalize (e.g., Espelage et al. 2003; Fuemmeler et al. 2002), past research specific to youth in residential settings suggests that females demonstrate higher rates of internalizing (e.g., Handwerk et al. 2006) and externalizing symptoms compared to males (e.g., Holtberg et al. 2016). Findings of this study corroborate past research findings by demonstrating that females had, on average, higher internalizing and externalizing symptoms than males. Plus, females also had higher scores on exposure to violence and trauma. Interestingly, results of the moderation analyses highlighted that gender served as a moderator between trauma and externalizing symptoms with a substantial association for males and a negligible association for females.

Because there is no known prior research testing these associations for youth in residential settings, we posit that differential displays of symptoms may be, in part, due to differences in female and male socialization. Beginning in adolescence, youth face increased pressure to conform to culturally sanctioned gender roles, stemming from a variety of sources including family, peers, educators, and the media (Priess et al. 2009). Across adolescence, girls tend to become more self-conscious, report lower self-esteem, and are more likely to accommodate and be more compliant in their interactions. In addition, there are differences in the socialization of youth's emotional expression, with females being more likely to show sadness, while boys are more likely to show anger (Chaplin et al. 2005). The socialization pressures may not always be overt and can include subtler messages such as "boys don't cry," and be conveyed through differential attention paid to males' and females' expressions during emotional events (Chaplin et al. 2005). These differences in attention may subtly encourage or discourage certain emotions, which may contribute to a tendency for females to be more likely to convey submissive emotions (enhancing the gender role of warmth and accommodation), and males to be more willing to express assertive emotions (enhancing the gender role of self-confidence and competitiveness; Chaplin et al. 2005). This gender socialization then may play a significant role in the ways in which youth cope with their emotions and their willingness to reach out and express their struggles. Our finding that gender significantly moderated the relationship between trauma and externalizing symptoms, with a strong positive association for males, indicates that males with high levels of trauma express their feelings through externalizing symptoms. A possible explanation for this positive effect is that externalizing symptoms are more socially acceptable for males than the expression of emotions such as sadness.

While the results regarding race and ethnicity were not significant, it is important to note that insufficient power to detect statistical differences could be one explanation for the lack of significance for race and ethnicity. This is particularly salient given that extant research demonstrates disparities in access to and usage of mental health services for racial and ethnical minority youth involved with the CWS (Barksdale

et al. 2009; Garcia et al. 2015; Horwitz et al. 2012; Kim and Garcia 2016; Nguyen et al. 2007). Past work also highlights that racial and ethnic minority youth are equally likely compared to their White counterparts to experience mental health symptoms and yet receive less services, which may be linked with further increases in mental health disparities over time (e.g., Kim and Garcia 2016). Therefore, future studies should include larger and more diverse samples to better test these effects.

Clinical Implications

These findings point to ways in which we can better target clinical approaches to youth in residential treatment settings. This is key because under the Family First Prevention Services Act (n.d.) there is a need to demonstrate improved mental health outcomes of youth in residential settings. Results highlighting linkages between trauma, exposure to violence, and mental health symptoms bolster the relevance of the developmental trauma perspective for youth in residential settings. This perspective suggests that rather than focusing treatment directly on quelling aggressive and defiant behaviors, for example, it may be useful to address the trauma the youth has experienced (van der Kolk 2017). Viewing trauma as the underlying issue contributing to the youth's struggles to integrate sensory, cognitive, and emotional experiences may be clinically helpful (Knoverek et al. 2013).

There has been a recent emergence of new models of trauma-informed care for youth in residential settings. Treatment foci shared by these models include prioritizing emotional and physical safety, open communication, trust, collaboration, and emotional regulation and self-control (Knoverek et al. 2013). Whenever safely possible to do so, research suggests that it may also be beneficial to include other family members in the treatment process (Knoverek et al. 2013). A shift to increase family involvement may not only address the youth's struggles but also contextual factors that may be underlying the emotional manifestations of their struggles such as pressures to conform to traditional gender roles. Including the family when confronting contextual pressures is likely to be beneficial given the key role parents play in creating and maintaining these pressures (Hill and Lynch 1983).

The finding indicating that gender acted as a moderator between trauma and externalizing symptoms, with a substantial association for males and a marginal association for females, may also inform clinical approaches. This finding suggests that males involved with the CWS who are expressing externalizing symptoms may need more clinical attention regarding traumatic experiences and ways in which they process and regulate their emotions in response to trauma. In Western cultures, the perception of sadness or other internalizing affects are often considered non-masculine (Root and Denham 2010), and externalizing expressions such as anger are more accepted in males (BBirnbaum et al. 1980; Root and Denham 2010). These narratives also may influence emotions that parents encourage or discourage for their sons or daughters, this direct socialization shapes the emotional understanding, expression, and regulation (Root and Denham 2010). Thus, it may be clinically helpful to deconstruct the social norms and narratives surrounding male expression of emotion in the context of the youth's life, increase the youth's emotional vocabulary, as well as understand the meaning behind the traumatic event or the emotions that may underly the externalizing symptoms. This emphasizes the necessity of a developmental trauma framework to address the culmination of mental health needs in order to address the outward expressions of aggressive and defiant behaviors.

Limitations

Despite the strengths of this study, including the use of a nationally representative dataset of youth involved with the CWS and the diversity of the sample, there are limitations that also warrant consideration. For instance, although it is noteworthy that there were no significant differences regarding race and ethnicity, it is possible that there was insufficient power to detect statistical differences. Therefore, we cannot conclude that racial and ethnic differences did not exist. Moreover, findings regarding gender moderating the relationship between exposure to violence and externalizing symptoms may be viewed as marginally significant (0.079). Future research with larger samples is needed for further test these associations. In addition, the types of residential settings varied, and it is possible that mental health outcomes may differ depending on youths' residential care. Although NSCAW II includes longitudinal data, this study was limited to the use of wave I data because youths' placements changed over time. Relatedly, although this study demonstrated key linkages between trauma, exposure to violence, and internalizing and externalizing symptoms, causation cannot be determined. Plus, there may be other key influential factors such as different experiences of trauma or types of child maltreatment that may also affect the results. Future research should take those into consideration. Although there are many strengths of the NSCAW II data, restricting the data to include only youth old enough to complete the measures of interest and in residential out-of-home placement settings resulted in an analytic sample size small in comparison to the NSCAW II overall sample which limits the generalizability of the study findings. Nevertheless, the use of NSCAW II data was appropriate because of the use of highly regarded, standardized measures relevant to the research questions and the diverse and randomly sampled participants. Future research should test associations between trauma, exposure to violence, and internalizing and externalizing symptoms longitudinally to further

contribute to our understanding of causes and consequences of complex trauma.

Despite the study limitations, results highlight key associations between trauma and exposure to violence and youths' internalizing and externalizing symptoms. Findings also revealed that gender moderated the link between trauma and externalizing symptoms with a positive association for males and a negligible association for females. Future research should test the extent to which gender socialization plays a role in the expression of mental health needs. Approaching the mental health needs of youth in residential settings from complex trauma (Knoverek et al. 2013) and developmental trauma perspectives (van der Kolk 2017) may decrease problematic symptoms while also addressing the underlying trauma. Doing so may promote better long-term outcomes for youth in residential care.

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