

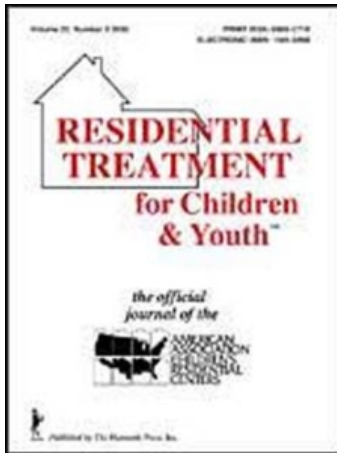
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### Strengths Moderate the Impact of Trauma on Risk Behaviors in Child Welfare

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## **Strengths Moderate the Impact of Trauma on Risk Behaviors in Child Welfare**

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*Objectives: To determine whether traumatic experiences of children entering the child welfare system have an impact on their risk behaviors and whether these behaviors are moderated by children's strengths. Method: The Illinois Department of Children and Family Services administered the Child and Adolescent Needs and Strengths (CANS) measure to 8,131 children as they entered custody and analyzed Traumatic Experiences, Risk Behaviors and Strengths using polytomous logistic regression models. Results: Children entering child welfare have suffered multiple traumatic experiences. There is a strong linear relationship between the number of these experiences and the level of the children's high risk behaviors. However, there is an interactive effect between traumatic experiences and children's strengths on the risk behaviors, with strengths having a greater moderating effect as the number of traumatic experiences increases. Conclusions: Children entering the child welfare system present with complicated histories that include multiple traumatic experiences and multiple high risk behaviors. However, the more strengths these children have developed, the less likely they are to engage in high-risk behaviors.*

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*This resilience has major implications for both prevention and treatment.*

*KEYWORDS* trauma, resilience, child welfare, adverse experiences, risk behaviors

The American Psychological Association has called for a better understanding of the impact of trauma on children (Kazdin, 2008; American Psychological Association, n.d.). Additionally, there is some debate as to whether a new diagnosis recognizing the developmental impact of traumatic experiences on children should be included in the next edition of the Diagnostic and Statistical Manual, DSM V (Cook, Blaustein, Spinazzola, & van der Kolk, 2005). Regardless of the outcome of that debate, it is clear that the understanding of childhood trauma has developed significantly over the last two decades.

In the late 1990s Felitti et al. (1998) demonstrated the impact of early adverse experiences across the lifespan. What had begun as a retrospective analysis of adult health demonstrated the negative effect of adverse childhood experiences (ACE) on emotional and cognitive development, risk behaviors, physical health and longevity. ACE include childhood exposure to physical, emotional or sexual abuse; neglect; or growing up in a household with domestic violence or an adult who is a substance abuser, imprisoned, or mentally ill. Risk behaviors that were linked to these ACE included smoking, illegal drug use, multiple sexual partners, teenage pregnancy, and suicide attempts.

Perry (1994) and Pynoos, Steinberg, Ornitz, and Goenjian (1997) have postulated ways in which these adverse experiences interfere with normal child development and result in behavioral response styles such as fight or flight and dissociation (see also Perry & Szalavitz, 2006; Stolk, Vantini, Guchait, Perry, & U'Prichard, 1984). While such response styles might serve a survival function in the abusive situation, these behaviors can be non-adaptive and problematic when generalized to other settings.

Federal funds have supported the creation of the National Child Traumatic Stress Network, where researchers have developed assessment tools and evidence-based treatments (National Child Traumatic Stress Network, 2008). Other research has focused more on resilience and protective factors, seeking to understand why some children who are exposed to adverse experiences do not experience trauma symptoms (Luthar, Cicchetti, & Becker, 2000; Bell, 2007; Cooper, Masi, Debabnah, Aratani, & Knitzer, 2007). This has led child trauma experts, such as Bell, to point out that "Risk factors are not predictive factors because of protective factors" (p. 14).

Earlier research on child welfare programs has studied the prevalence of mental illness but has not focused on trauma. In fact, the concepts of child

traumatic experiences, risk behaviors, and resilience can be directly applied to child welfare systems. Of particular importance is the concept that trauma experiences are highly related to genesis of high risk behaviors (Lyons, Uziel-Miller, Reyes, & Sokol, 2000; Rivard et al., 2003; Hillis, Anda, Felitti, & Marchbanks, 2001; Dube et al., 2001). Previously, many of these risk behaviors had been attributed to the “mental illness” of the children rather than being tied to their traumatic experiences. High risk behaviors are the factors that have greatest impact on child welfare outcomes such as level of care and number of placements (Zinn, DeCoursey, George, & Courtney, 2006). Youth who engage in violence towards self or others, run away, engage in delinquent behavior, or act recklessly have less stable foster placements and are more likely to require intensive and expensive treatment interventions such as residential treatment (Leathers, 2006; Weiner, Abraham, & Lyons, 2001). Understanding what factors influence whether children and youth engage in such behaviors is critical to creating effective child welfare systems.

Within child welfare, resilience, and psychopathology have been reported to have significant but independent relationships to both level of functioning and the likelihood of high risk behaviors (Lyons, et al., 2000). The more symptomatic a child or youth, the lower his/her level of functioning and the higher his/her risk. However, completely independent from the level of symptoms, the more strengths, the higher his/her level of functioning and the lower his/her risk.

Some systems are working to implement evidence-based practices to ameliorate the impact of trauma in child welfare (Hoagwood et al., 2007). Focusing on adverse childhood experiences, disrupted development, resilience and the development of strengths leads to different treatment approaches for children in the child welfare systems than does a focus on treating traditional mental illness or trauma symptoms.

Illinois was one of the first state child welfare systems to switch to a trauma-informed, public health approach to working with its children. In 2004, the state began its program, collecting trauma, behavioral health, and risk behavior data on all children entering custody. The present project attempts to untangle the potentially complex relationships among trauma experiences, strengths, and high risk behaviors of children in the child welfare system.

## METHOD

The Illinois Department of Children and Family Services (DCFS) initiated a program to create a trauma-informed model of care that utilizes three levels of intervention and support. First, all caseworkers and foster parents receive formal training on trauma. Next, all children are given a trauma-sensitive assessment when they come into state custody. The assessment uses a functional behavioral

health instrument, the Child and Adolescent Needs and Strengths (CANS) (Lyons, 2004; Anderson, Lyons, Giles, Price, & Estle, 2003) that includes sections on trauma experiences, trauma symptoms, risk behaviors, and strengths. Finally, those children who are identified as having trauma-related symptoms are referred to appropriate treatment, including providers using evidence-based practices and trauma-informed care (Weiner, Schneider, & Lyons, 2008).

Since children entering the child welfare system are wards of the state by court order, DCFS is the guardian, and separate parental consent is not required for assessment or treatment. The present data was collected as part of ongoing program evaluation that received all required internal review board permissions.

## Instruments

The CANS is a multi-purpose tool developed for children's services to support decision making, facilitate quality improvement initiatives, and allow for the monitoring of outcomes of services. Each CANS item suggests different pathways for service planning. There are four levels of each item with anchored definitions, where these definitions are designed to translate into the following action levels (separate for needs and strengths):

For needs:

0. No evidence—no need for action
1. Watchful waiting/prevention
2. Action required—need is interfering with child's individual, family or community functioning in a notable way
3. Immediate/Intensive Action—need is dangerous or disabling

For strengths:

0. Centerpiece strength—it can be the focus of a strength-based plan
1. Useful-strength—it can be included in a strength-based plan
2. Strength has been identified—must be developed before useful
3. No strength identified—no evidence of a strength

The DCFS CANS has 105 items. The present analyses made use of CANS items (rated 0, 1, 2, or 3), and 3 additive scales based on these items: The (a) Risk scale (RISK, 11 item sum, standardized); the (b) Traumatic Experiences scale (TE, 13 item sum, standardized); and the (c) Strengths scale (STR, 10 item sum, standardized). For all scales and items, higher scores represent poorer health or functional status, that is, higher scores represent greater risk, more traumatic experiences, and less strengths.

All individuals who complete the CANS must be trained and certified with a minimum reliability of 0.70. In most jurisdictions the average reliability of those certified is well above 0.80 on test case vignettes. Second, annual

recertification is required to ensure that individuals using the CANS maintain reliability over time. Third, the action oriented design of the CANS items allows them to be individually embedded in the treatment/service planning/supervision process. The result of all of these processes is to create a clinical assessment that has high field reliability. Two published audit studies demonstrate that the audit reliability of this method is well above accepted standards for reliability, even at the item level.

## Sample

The analyses included 8,131 DCFS wards in the CANS database. In each case, the analyses used the first CANS administered to each ward after 2004. The CANS was completed at multiple points, including: (1) new wards, at the Integrated Assessment (1,764 cases, 21.7%); and (2) other wards that were already in care and were assessed while (a) in therapeutic foster care (Specialized Foster Care or System of Care: 2,848 cases, 35%), (b) in residential placement (1,217 cases, 15%), or (c) at treatment planning meetings (Child and Youth Investment Team: 2,302 cases, 28.3%).

More than half were male (52.9%) compared to 47.1% female. Most children were African American children (62.4%) or Caucasian (31.2%) and 6.0% were Hispanic; 11.3% were younger than five years old, 19.6% were five to ten years old, 28.9% were 10 to 15 years old, 28.2% were 15 to 18 years old, and 11.9% were over 18 years old.

## Statistical Models

To evaluate the relationship between traumatic experiences and risk behaviors, we used a standard multiple regression model predicting RISK scale score (11 item sum, standardized) from 13 Traumatic Experience (TE) items on the CANS. We estimated unique and common effects for Traumatic Experience items.

To assess the possible moderating role of strengths (STR) in predicting overall risk behavior, we examined an interactive regression model with 3 standardized predictors: TE scale (13 item sum, standardized), STR scale (10 item sum, standardized), and TE scale  $\times$  STR scale interaction predictors. The dependent variable was the standardized RISK scale score. To assess the relative impact of different strength moderators, we evaluated 10 corresponding interactive regression models, also with 3 predictors: each strength item (rated 0 to 3), the standardized TE scale, and an item-by-scale interaction term.

Finally, we evaluated the relative effects of strengths and trauma history on 11 risk dimensions through a set of polytomous logistic regression models. For each of the 11 models, one risk item (rated 0 to 3) was the dependent variable. All models included three predictors: the standardized TE scale, the standardized STR scale, and the TE  $\times$  STR interaction term.

## RESULTS

## What is the Prevalence of Traumatic Experiences for Children Entering Child Welfare?

The CANS lists thirteen possible traumatic experiences (sexual abuse, physical abuse, emotional abuse, neglect, medical trauma, family violence, community violence, school violence, natural or manmade disasters, traumatic grief/separation, war affected, terrorism affected, or witness to criminal activity). Trauma Experiences are assessed by the following standards:

- 0- indicates a dimension where there is no evidence of any trauma of this type.
- 1- indicates a dimension where a single event trauma occurred or suspicion exists of trauma experiences.
- 2- indicates a dimension on which the child has experienced multiple traumas.
- 3- indicates a dimension where there has been repeated and severe trauma with medical and physical consequences.

According to 8,131 DCFS assessments, over 97% of those children being ordered into state custody are at least suspected of having one traumatic experience (Table 1) with the majority suspected of having five or more types of traumatic experiences.

Raising the standard from mere suspicion of trauma to those types of trauma where it is known that there have been multiple incidents of a particular type of trauma (Table 2) changes the numbers slightly, with over 85% of those children having experienced at least one category and the majority experiencing at least two types of multiple incident trauma.

Finally, narrowing the data to only those children where there is repeated and severe trauma with medical and physical consequences (Table 3) 37% of children qualify, with 21% experiencing this from a single trauma category.

**TABLE 1** Trauma Experience Items Endorsed at Level 1, 2, or 3

Valid	Frequency	Valid percent	Cumulative percent
0	210	2.6	2.6
1	463	5.7	8.3
2	831	10.2	18.5
3	1015	12.5	31.0
4	1102	13.6	44.5
5	1214	14.9	59.5
6	1121	13.8	73.3
7	897	11.0	84.3
8	660	8.1	92.4
9	422	5.2	97.6
10	152	1.9	99.5
11	23	0.3	99.7
12	16	0.2	99.9
13	5	0.1	100.0
Total	8131	100	

**TABLE 2** Trauma Experience Items Endorsed at Level 2 or 3

Valid	Frequency	Valid percent	Cumulative percent
0	1162	14.3	14.3
1	1520	18.7	33.0
2	1716	21.1	54.1
3	1326	16.3	70.4
4	989	12.2	82.6
5	677	8.3	90.9
6	389	4.8	95.7
7	214	2.6	98.3
8	105	1.3	99.6
9	27	0.3	99.9
10	3	0	100.0
11	1	0	100.0
12	1	0	100.0
13	0	0	100.0
Total	8131	100	

**TABLE 3** Trauma Experience Items Endorsed at Level 3

Valid	Frequency	Valid percent	Cumulative percent
0	5092	62.6	62.6
1	1726	21.2	83.9
2	734	9.0	92.9
3	334	4.1	97.0
4	156	1.9	98.9
5	50	0.6	99.5
6	30	0.4	99.9
7	6	0.1	100.0
8	2	0	100.0
9	1	0	100.0
10	0	0	100.0
11	0	0	100.0
12	0	0	100.0
13	0	0	100.0
Total	8131	100	

Regarding the types of trauma experienced, (Table 4) most children taken into custody are neglected and experiencing traumatic grief/separation while the fewest are victims of war or terrorism. Medical and physical consequences are most often associated with neglect, traumatic grief/separation, family violence, and sexual abuse.

#### Are Traumatic Experiences Related to the High Risk Behaviors of Children in Child Welfare?

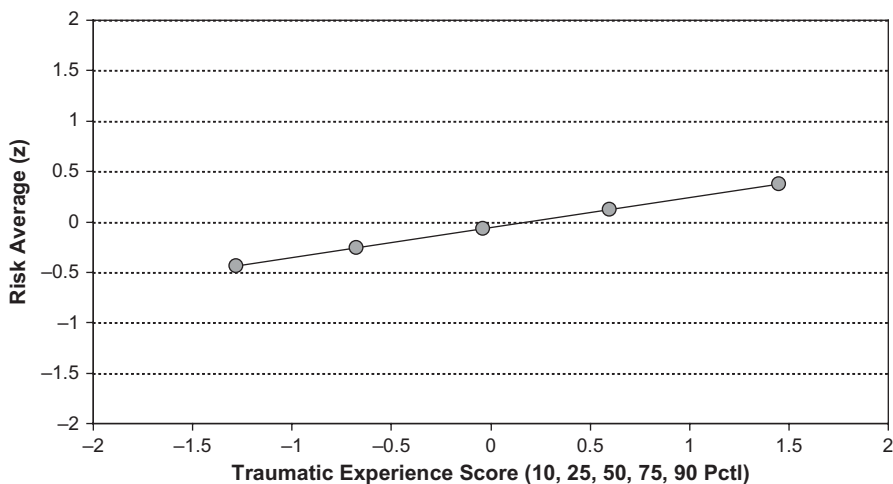
To evaluate the relationship between traumatic experiences and risk behaviors, a standard multiple regression model was used predicting RISK scale scores

**TABLE 4** Score Distributions for Each of 13 Trauma Experiences

	0 Count	1 Count	2 Count	3 Count
Sexual Abuse	5359	1143	1071	558
Physical Abuse	3719	1886	2137	389
Emotional Abuse	3232	2527	1906	466
Neglect	1501	1912	3158	1560
Medical Trauma	6501	965	491	174
Family Violence	3579	1700	2175	677
Community Violence	5479	1769	683	200
School Violence	6010	1690	399	32
Natural or Manmade Disaster	7703	311	63	54
Traumatic Grief/Seperation	1755	2717	2743	916
War Affected	8056	60	11	4
Terrorism Affected	8012	112	6	1
Witness to Criminal Activity	5036	1722	1087	286

from Traumatic Experience items. Overall, 29.1% of RISK scale variance was accounted for by the set of trauma history items,  $F(13, 7822) = 246.87$ ,  $p < .001$ . A 1 standard deviation increase in Traumatic Experiences is associated with 0.298 standard deviation increase in RISK (Figure 1).

Table 5 lists zero-order correlations and semi-partial correlations for 13 risk items based on a standard multiple regression model with associated inferential tests (t-tests). Zero-order correlations for all items were significant and positive. Most items accounted for some portion of RISK variance uniquely, with 11.7% of total risk variance unique to specific items. The strongest associations were found with sexual abuse, followed by traumatic grief/separation, school violence, physical abuse, and community violence.

**FIGURE 1** The impact of trauma experiences on risk behaviors.

**TABLE 5** Zero-Order Correlations and Semi-Partial Correlations of Trauma Experience Items with Overall RISK Scale (Sorted by Semi-Partial r-squared) with Inferential Tests

	r	t	p	s-r	t	p
Sexual Abuse	.37	35.42	<.001	.22	23.30	<.001
Traumatic Grief/Separation	.29	27.85	<.001	.14	15.10	<.001
School Violence	.29	26.68	<.001	.12	12.61	<.001
Physical Abuse	.31	29.19	<.001	.10	10.83	<.001
Community Violence	.30	28.65	<.001	.09	9.26	<.001
Emotional Abuse	.33	31.41	<.001	.07	7.21	<.001
Witness to Criminal Activity	.27	25.37	<.001	.06	6.67	<.001
Family Violence	.15	14.06	<.001	-.05	-5.50	<.001
Natural or Man-made Disaster	.03	2.56	.010	-.04	-4.05	<.001
Neglect	.16	14.91	<.001	.02	2.57	.010
Medical Trauma	.08	6.99	<.001	.01	1.38	.167
Terrorism Affected	.05	4.59	<.001	.01	1.02	.306
War Affected	.05	4.19	<.001	.01	0.82	.414

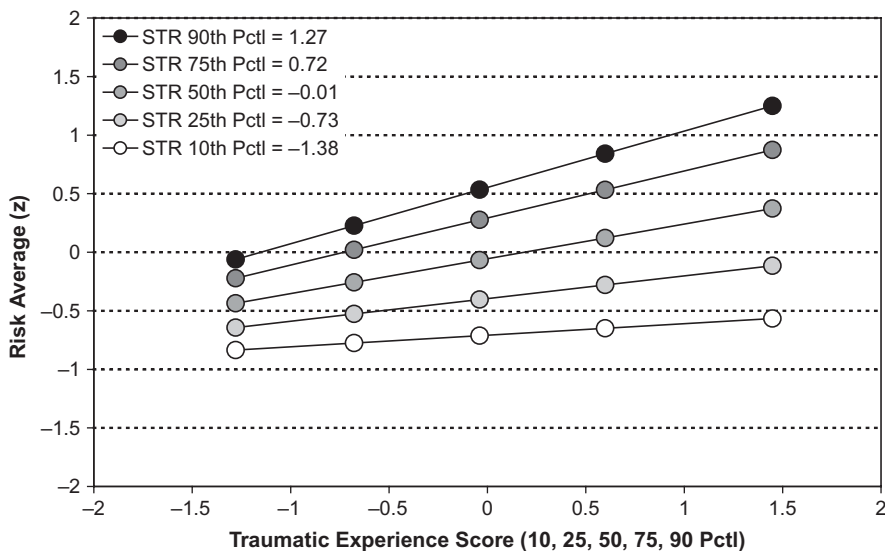
### Do Strengths of the Child Moderate the Relationship Between Traumatic Experiences and Risk Behaviors?

To assess the possible moderating role of strengths in predicting overall risk behavior, we examined an interactive regression model with 3 standardized predictors: TE scale, STR scale, and TE scale x STR scale interaction predictors. The dependent variable was the standardized RISK scale score. Table 6 lists regression model coefficients and inferential tests for an interactive regression model predicting RISK scale variance from TE scale (13 item sum, standardized), STR scale (10 item sum, standardized), and TE scale x STR scale interaction predictors. All model components (main effects and interaction) contributed significantly, and the overall model accounted for 41.4% of RISK scale variance,  $F(3, 8127) = 1911.89$ ,  $p < .001$ .

These effects are depicted graphically in Figure 2, plotted across a range of STR and TE percentiles. At average TE, a 1 standard deviation increase in STR was associated with 0.476 standard deviation increase in RISK. At average STR (Figure 1), a 1 standard deviation increase in TE was associated with 0.298 standard deviation increase in RISK. The effect of TE on RISK was increased by STR. For every 1 standard deviation above the mean, the positive effect of TE on RISK was increased by an additional 0.144 standard deviations. Or alternatively, for every 1 standard deviation

**TABLE 6** Interactive Regression Model Predicting Overall RISK (z) from TE (z) and STR (z)

	B	$\beta$	t	p	s-r	s-r <sup>2</sup>
Constant	-.050	0				
TE (z)	0.298	0.298	32.34	<.001	.27	.08
STR (z)	0.476	0.476	50.66	<.001	.43	.18
TE x STR	0.144	0.145	16.37	<.001	.14	.02



**FIGURE 2** Child strengths moderate the relationship between trauma experiences and the likelihood of high risk behaviors.

below the mean, the positive effect of TE on RISK was lessened by a  $-0.144$  standard deviations.

Additional analyses, available upon request, demonstrated that each strength item produced a significant main effect and all but one interaction contributed significantly and in a direction consistent with the full STR scale effects. Further, the main effects of STR and TE scales were significant for all RISK behaviors.

## DISCUSSION

The results demonstrate that trauma is an essential concept to understand when working with children in the child welfare system. By definition, children who are taken into state custody are suspected of having been abused or neglected and these forms of abuse and neglect constitute traumatic experiences. More traditionally viewed as mentally ill, these children can alternatively be viewed as reacting to such traumatic experiences. The data demonstrates that children in child welfare are likely to have suffered multiple traumatic experiences, and that these experiences have a direct relationship to the number of risk behaviors in which these children will engage; however, developing the individual child's strengths can moderate the relationship.

Much of the research on trauma has focused on single event disasters, such as an accident, a hurricane, or a sexual assault. Such experiences can

have a major negative impact on a person and result in Post Traumatic Stress Disorder, which includes the symptom of re-experiencing that disaster. Excellent evidence-based trauma treatments, such as Cognitive Behavior Therapy, work with the victims to reprocess that experience and, in so doing, regain control of their lives.

This current research suggests that, for children entering the child welfare system, a trauma informed model of care is essential as nearly all these children have had some traumatic experience. However, a model that focuses on single event disasters may be inadequate. By the time these children come into state custody, over half of them are suspected of having experienced at least five different types of trauma. The most frequently endorsed of the co-occurring traumatic experiences, and also the one most frequently rated to produce serious medical or physical consequences, is neglect. Neglect, as an absence of proper care, is less likely to result in direct re-experiencing and more difficult to process in single event focused therapies. Single event traumas, such as sexual abuse or community violence, are less frequent and, in any case, are not likely to stand alone as the only type of trauma a child in the state welfare system has experienced. Therefore, we need to develop more complex trauma treatment models for these children.

Data demonstrating a strong linear relationship between the number of types of trauma experienced and the level of high-risk behaviors in which the children are engaged highlight the need for a trauma treatment model for children in child welfare. These effects appear to be additive—the more trauma exposure, the greater the likelihood of risk behaviors. Such results are consistent with Felitti et al.'s (1998) original ACE research with adults. It is also the high risk behaviors that can have a dramatic effect on a child's care while in the state welfare system, affecting whether the child will experience multiple moves from foster homes or end up in a higher level of institutional care, such as residential treatment. This data suggests that, without appropriate intervention, the children who have experienced multiple abuses will end up at the high end of institutional care.

This first look at a large data set from a child welfare agency does suggest an area of focus to disrupt the relationship between traumatic experiences and risk behaviors. That relationship is moderated by the presence of strengths of these children, with more strengths being associated with fewer risk behaviors across all levels of traumatic experiences and, most importantly, a diminished relationship between the amount of traumatic experiences and the likelihood that the child engaged in high risk behavior. That is, there appears to be an interactive effect between traumatic experiences and strengths on children's risk behaviors, with strengths having a greater moderating effect as the number of traumatic experiences increases. Thus, the children's strengths hold promise for their overcoming the potentially negative impact of their adverse life experiences. These results are consistent

with other findings in the trauma field (Howard & Wang, 2005; Stevens, Murphy, & McKnight, 2003; Weiss & Wagner, 1998; Anda et al., 2001).

The present findings suggest that, independent of direct treatment of trauma stress symptoms, efforts to build strengths may be an important option in reducing the impact of traumatic experiences for children in the state welfare system. It is not enough to develop treatment plans to address clinical problems. More likely a combination of strength building approaches with trauma-informed treatments would result in optimal outcomes. These efforts may help build resiliency to cope with the past adversities or the adverse experiences that may still lie ahead. The present study suggests that, when working with children in child welfare, there is value in focusing on both the needs *and* strengths of the children to ensure that their risk factors do not become predictive factors (Bell, 2001; Danielson et al., 2006; Glodich, Allen, & Arnold, 2001).

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