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Exposure to Traumatic Events and the Behavioral Health of Children Enrolled in an Early Childhood System of Care

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Abstract

Children may be exposed to numerous types of traumatic events that can negatively affect their development. The scope to which studies have examined an array of events among young children has been limited, thereby restricting our understanding of exposure and its relationship to behavioral functioning. The current cross-sectional study describes traumatic event exposure in detail and its relationship to behavioral health among an at-risk sample of young children ($N=184$), under 6 years of age, upon enrollment into an early childhood, family-based, mental health system of care. Caregivers completed home-based semistructured interviews that covered children's exposure to 24 different types of traumatic events and behavioral and emotional functioning. Findings indicated that nearly 72% of young children experienced 1 or more types of traumatic events. Multiple regression model results showed that exposure was significantly associated with greater behavioral and emotional challenges with children's age, gender, race/ethnicity, household income, and caregiver's education in the model. These findings highlight the prevalence of traumatic exposures among an at-risk sample of young children in a system of care and suggest that this exposure is associated with behavioral and emotional challenges at a young age.

Exposure to traumatic events (e.g., violence, abuse, natural disasters) among children is a major public health concern in the United States that carries an enormous cost to society, both in lives affected and dollars spent (Leventhal, Martin, & Gaither, 2012). The annual financial burden to society of childhood abuse and trauma—encompassing medical costs, mental health utilization, law enforcement, child welfare, and judicial system costs—is approximately \$103 billion (Wang & Holton, 2007). It is estimated that among a healthy cohort of children, 26% will witness or experience a traumatic event before the age of 4 years (Briggs-Gowan, Ford, Fraleigh, McCarthy, & Carter, 2010) and that the majority of maltreatment and family violence occurs during the first 5 years of life (Fantuzzo & Fusco, 2007). Research has shown that exposure to traumatic events early in life can have negative effects throughout the lifespan (Goodwin & Stein, 2004; Heim, 2001). Little, however, is known about the specific types of trauma young children (under 6 years of age) experience.

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To design more effective programs, there is a need to gain a detailed understanding of the specific types of traumatic events experienced by young children and the relationship between exposure and behavioral health. Further, it is important to understand the behavioral health of young children exposed to trauma as this period is crucial for the development of positive emotional and behavioral functioning (Osofsky, 1999).

With a focus on the importance of the mental health needs of young children, in 2005 the Substance Abuse and Mental Health Services Administration (SAMHSA) provided funds to develop six early childhood systems of care. These were created to support the complex and multiple needs of at-risk children and families, including those young children who experience trauma. Systems of care is an organizational philosophy and framework that involves collaboration across agencies for the purpose of improving services and supports for children and youth with or at risk for emotional and behavioral health challenges and their families (Stroul & Friedman, 1986).

The SAMHSA-funded system of care evaluation asks caregivers to indicate whether or not a child has a history of exposure to traumatic events including domestic violence, sexual abuse, physical abuse, familial mental illness, and exposure to crime (Community Mental Health Services, 2005). Trauma in childhood is more complex, however, and unfortunately, young children may develop in a context that includes many types of traumatic stressors. Thus, a more thorough screening with targeted questions about other events that may be traumatic for young children (i.e., accidents, loss of family members, significant medical history, and animal attacks; Briggs-Gowan, Carter, et al., 2010) is needed. In the present study, as in others, we were unable to assess if children perceive an event as traumatic. Although a growing body of research has established that young children may be affected by traumatic events, we are unaware of any studies that have described specific traumatic stressors and their relationship to the behavioral health functioning of at-risk young children who enter into a system of care. The purpose of the current study was to describe young children's exposure to a wide array of traumatic events upon enrollment into a system of care and the relationship between exposure to events and children's behavioral health.

Method

Participants and Procedures

The present cross-sectional study examined data collected as part of an evaluation of an early childhood, family-based, mental health system of care that took place in an urban community in the northeastern United States. The project was funded by the Center for Mental Health Services of SAMSHA with the goal of developing an integrated system of care for children under 6 years of age with or at risk for severe emotional and behavioral challenges and their families. Families in the study were seeking mental health, developmental, and screening assessment, and intervention services for their children. All families who enrolled into this early childhood system of care were scheduled to receive in-home therapeutic services provided by a master's level clinician, care coordination, family advocacy services, and an array of wrap-around services individualized to the families' needs.

At intake into services, families were invited to participate in an outcome evaluation. Data used in the current study were collected at the time of intake into services from 184 caregivers who consented to participate in the evaluation. The majority of caregivers were biological parents ($n = 155$; 84.2%); other relationships included adoptive parents or stepparents ($n = 10$; 5.4%), grandparents ($n = 9$; 4.9%), foster parents ($n = 8$; 4.4%), or others ($n = 2$; 1.1%). Nearly all caregivers were female ($n = 179$; 97.3%), and all but one

caregiver indicated that the child had lived with them in the last 6 months. Children were, on average, 3.9 years of age ($SD = 1.1$; range = 1.4–5.9).

Home-based semistructured interviews conducted by trained research interviewers were completed within 30 days of enrollment into the system of care. Research interviewers conducted the interviews by reading all questions aloud and recording responses to address any literacy issues. Caregivers received a \$40 gift card at the completion of the interview. The Human Investigation Committee at Yale University School of Medicine provided oversight with regard to human subjects protection. Descriptive characteristics of the sample including children's behavioral health functioning are presented in Table 1.

Measures

Child and caregiver descriptive data were collected. Exposure to traumatic events was assessed by the Traumatic Events Screening Inventory-Parent Report Revised-Long Version (TESI-PRR; Ghosh-Ippen et al., 2002), a 24-item measure, to capture in-depth information regarding children's exposure to events. For the current study, we calculated an event history score that represented a sum of the TESI-PRR items that caregivers endorsed (i.e., yes, a child has been exposed to an event at any time in the past; thus, the score had a potential range of 0–24). For each event, caregivers were also asked to report the child's age of first exposure. The primary outcome measure was the *Child Behavior Checklist* (CBCL; Achenbach & Rescorla, 2000) for children aged 1 ½ to 5 years, a widely used 100-item norm-referenced measure of problem behaviors that provides two broadband syndrome scales. The Internalizing subscale (CBCL-I; $\alpha = .90$) assesses behaviors such as withdrawal, anxiousness, and depression; the Externalizing subscale (CBCL-E; $\alpha = .91$) assesses behaviors such as hyperactivity, noncompliance, and aggressive behaviors. Scores greater than 63 are considered in the clinical range. To measure functional impairment, the Columbia Impairment Scale (CIS; Bird, Shaffer, Fisher, & Gould, 1993), a 13-item scale ($\alpha = .48$), was used to assess the extent to which young children aged 3 years and older experience disruption in several life domains. Scores for the CIS range from 0 to 52, with a score greater than 15 considered clinically impaired. Although the reliability of the CIS was poor in this sample, CBCL reliability was excellent, and the CIS measure was used to corroborate results.

Data Analysis

We conducted descriptive analyses to describe characteristics of the sample and the proportion of caregivers endorsing specific types of traumatic events. To examine the relationship between traumatic events and young children's behavioral health outcomes, we carried out a separate multiple regression analysis for each of our three dependent variables of interest. Each multiple regression model included the traumatic event history score, the child's age, gender, race/ethnicity, household income, and caregiver's education as the independent variables. Missing data were not present for the outcome variables though the sample size for each outcome examined is less than the total sample size due to the outcome measures' age restrictions (as mentioned above). Missing data were minimal for the individual TESI-PRR items, with 92.3% to 100% complete data. The traumatic event history scores did not include missing data as the scores represent the sum of caregiver-endorsed traumatic events.

Results

Caregivers reported that young children were exposed to, on average, 2.4 types of traumatic event ($SD = 2.5$; range = 0–13). The majority (71.7%; $n = 132$) of young children in the study faced one or more event. Children exposed to one or more event were exposed to, on

average, 3.3 types of event ($SD = 2.4$). As shown in Table 2, the most prevalent traumatic events reported included child separation (33.7%; $n = 62$), exposure to familial physical violence (23.4%; $n = 43$), and verbal threats of harm by a family member (20.7%; $n = 37$). Among children exposed, the average age of first exposure across all events was 2.0 years ($SD = 1.2$) and, on average, children were first exposed to a traumatic event at age 1.4 years ($SD = 1.3$).

The multiple regression model results for each of the three outcomes (CBCL–I, CBCL–E, and CIS) are displayed in Table 3. The regression model for the CBCL–I showed that traumatic event history scores were significantly associated with greater internalizing with child’s age, gender, race/ethnicity, household income, and caregiver’s education in the model. The models for both the CBCL–E and CIS demonstrated similar significant effects of event history scores on young children’s challenging behaviors.

Discussion

Studies can do more to encompass the numerous traumatic events to which young children may be exposed. In this study, we examined specific types of traumatic events that young children entering a system of care can experience and extended findings that show traumatic events are associated with behavioral and emotional challenges among children at a young age. Upon enrollment into a system of care, caregivers reported that young children experienced a variety of traumatic events, and these experiences were associated with internalizing and externalizing problem behaviors after we controlled statistically for children’s age, gender, race/ethnicity, household income, and caregiver’s education.

To our knowledge, this is the first study to describe specific traumatic events and their relationship with the behavioral health functioning of young children who entered into a system of care. The results are consistent with previous work that shows trauma exposure can negatively impact children’s behavioral functioning (Crusto et al., 2010; Goodwin & Stein, 2004; Heim, 2001). Because health problems that are a result of childhood trauma are largely preventable (Felitti, 2009), this study speaks to the need to gain a greater understanding of the context in which young children develop. Such insight could assist with the development of trauma-informed practice and more appropriate intervention strategies.

There were some limitations to this study that should be considered. This study is representative only of families choosing to receive services. Moreover, the study used caregiver-report data, and this information could be substantiated with an additional respondent such as a health professional. Although our objective was to examine traumatic events and their relationship to behaviors among young children upon entry into a system of care, a longitudinal design would help strengthen the findings of the multiple regression models. Future research could use a longitudinal design to examine the impact of traumatic events on young children’s developmental trajectories. Further, we were unable to assess whether a young child perceived an event as traumatic, and the use of child-focused research methods (e.g., play-based assessment) could help address this concern in future research. Lastly, although the TESI-PRR is a promising measure, future research on trauma measurement is needed to ensure health services are trauma-informed. For example, more precise event categories can be defined that may provide a better understanding of the number and severity of different types of trauma.

Overall, few studies have examined a detailed breadth of trauma among young children. The current findings suggest that young children may be exposed to a wide array of traumatic events that are associated with behavioral and emotional challenges. These findings

underscore the need to better understand the various types of traumas that young children may experience and how to address them. Doing so has the potential to lower the financial burden to society and positively affect behavioral health across the lifespan.

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Table 1

Descriptive Statistics for Demographics and Emotional and Behavioral Functioning

Variable	<i>M</i> or <i>n</i>	<i>SD</i> or %
Age	3.9	1.1
Gender		
Female	46	25.0
Male	138	75.0
Race/ethnicity		
White/Caucasian	108	58.7
Hispanic	40	21.7
Multiracial	22	12.0
Other	13	7.1
Household income		
<\$10,000	53	28.8
\$10,000–\$19,999	31	16.9
\$20,000–\$49,999	41	22.3
>\$50,000	52	28.3
Caregiver education		
<High school	29	15.8
High school or GED	116	63.0
>High school	39	21.2
CBCL-I	65.7	8.9
CBCL-E	72.8	11.9
CIS	20.1	9.4

Note. *N* = 184; Percentages may not equal 100 due to rounding. CBCL-I = Child Behavior Checklist Internalizing Subscale; CBCL-E = Child Behavior Checklist Externalizing Subscale; CIS = Columbia Impairment Scale.

Table 2

Caregiver's Report of Frequency of Exposure to Traumatic Events

Event	<i>n</i>	%
Child has been separated from caregiver.	62	33.7
Child has heard or seen people in the family assaulting each other.	43	23.4
Child has seen or heard family members threaten to harm each other.	37	20.7
Child experienced the severe illness or injury of someone close to him/her.	36	19.6
A family member was arrested, jailed, or imprisoned.	31	17.1
Child experienced serious illness/medical problem.	25	13.6
Death of someone close to the child.	24	13.3
Child has been without food, drink, shelter, etc.	19	10.5
Child has been physically assaulted or beaten.	14	8.1
Someone has threatened the child with physical harm.	14	8.1
Child repeatedly told he/she is no good, yelled at in a scary way, or threatened with abandonment.	10	5.7
Child witnessed physical assault between nonfamily members.	9	5.0
Someone close to the child has attempted suicide or harmed him or herself.	9	4.9
Child has been in a serious accident where someone could have been (or actually was) injured or died.	8	4.4
Child attacked by a dog or other animal.	7	3.8
Child forced to see or do something sexual.	6	3.5
Child directly exposed to war, armed conflict, or terrorism.	6	3.3
Child exposed to war or terrorism on the television or radio.	5	2.8
Child experienced a natural disaster.	5	2.7
Child kidnapped or someone close to the child was kidnapped.	4	2.2
Child witnessed a serious accident.	3	1.6
Child was present when someone else was forced to engage in sexual activity.	2	1.1
Child has been present during theft or mugging.	1	1.0
Other events ^a	62	34.1

Note. The number of caregiver self-reports varied for the individual items, ranging from $n = 170$ – 184 .

^aOther category included responses such as “exposed to parents’ divorce” and “child relocated frequently.”

Table 3

Multiple Regression Models for Functioning and Behavioral Outcomes

Variable	CBCL-I (<i>n</i> = 175)			CBCL-E (<i>n</i> = 175)			CIS (<i>n</i> = 148)		
	B	β	95% CI of B	B	β	95% CI of B	B	β	95% CI of B
Event score	1.04	.30	[0.52, 1.56]***	1.05	.23	[0.37, 1.74]**	0.98	.27	[0.37, 1.58]**
Age	0.35	.04	[-0.84, 1.54]	-0.67	-.06	[-2.24, 0.91]	0.34	.03	[-1.38, 2.07]
Male	0.59	.03	[-2.45, 3.63]	0.08	.00	[-3.95, 4.12]	0.29	.01	[-3.40, 3.98]
Race/ethnicity ^a									
Hispanic	2.64	.12	[-0.71, 5.98]	-0.18	-.01	[-4.62, 4.26]	1.04	.04	[-3.00, 5.07]
Multiracial	1.20	.04	[-2.94, 5.33]	2.61	.07	[-2.88, 8.10]	4.66	.16	[-0.29, 9.61]
Other	-7.78	-.22	[-13.15, -2.40]**	-7.14	-.16	[-14.28, 0.01]*	-3.79	-.10	[-10.16, 2.58]
Household income ^b									
\$10,000, \$19,999	0.31	.01	[-3.71, 4.32]	-3.10	-.10	[-8.44, 2.23]	0.39	.02	[-4.46, 5.24]
\$20,000, \$49,999	0.33	.02	[-3.37, 4.03]	1.62	.06	[-3.30, 6.53]	5.62	.26	[1.19, 10.04]*
>\$50,000	2.33	.12	[-1.45, 6.11]	-3.36	-.13	[-8.38, 1.66]	4.60	.23	[0.02, 9.17]*
Caregiver education ^c									
High school diploma or GED	-1.46	-.08	[-5.40, 2.49]	-0.09	-.00	[-5.33, 5.15]	-.86	-.04	[-5.39, 3.67]
Degree greater than high school	-1.28	-.06	[-6.10, 3.53]	1.50	.05	[-4.90, 7.90]	-2.07	-.09	[-7.59, 3.45]
Intercept	61.69	-	[55.29, 68.10]***	73.80	-	[65.28, 82.31]***	13.76	-	[5.15, 22.37]**

Note. CBCL-I = Child Behavior Checklist Internalizing subscale; $R^2 = .15$, $F(11,163) = 2.66^*$; CBCL-E = Child Behavior Checklist Externalizing subscale; $R^2 = .12$, $F(11,163) = 2.02^*$; CIS = Columbia Impairment Scale; $R^2 = .14$, $F(11,136) = 1.95^*$.

^aRace reference category = White/Caucasian.

^bHousehold income reference category = <\$10,000.

^cCaregiver education reference category = Less than a high school diploma.

* $p < .05$.

** $p < .01$.

*** $p < .001$.