

Adverse Childhood Experiences and Mental Health, Chronic Medical Conditions, and Development in Young Children

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ABSTRACT

OBJECTIVE: To determine the relationships between adverse childhood experiences (ACEs) and mental health, chronic medical conditions, and social development among young children in the child welfare system.

METHODS: This cross-sectional study used a nationally representative sample of children investigated by child welfare (National Survey of Child and Adolescent Well-Being II) from 2008 to 2009. Our analysis included caregiver interviews and caseworker reports about children aged 18 to 71 months who were not in out-of-home care ($n = 912$). We examined the associations between ACEs and mental health (measured by the Child Behavior Checklist [CBCL]), reported chronic medical conditions, and social development (measured by the Vineland Socialization Scale) in bivariate and multivariate analyses.

RESULTS: Nearly all children (98.1%) were reported to have had an ACE in their lifetime; the average number of ACEs was 3.6. For every additional reported ACE, there was a 32%

increased odds of having a problem score on the CBCL (odds ratio [OR] 1.32, 95% confidence interval [CI] 1.14, 1.53) and a 21% increased odds of having a chronic medical condition (OR 1.21, 95% CI 1.05, 1.40). Among children aged 36 to 71 months, for every additional reported ACE, there was a 77% increased odds of a low Vineland Socialization score (OR 1.77, 95% CI 1.12, 2.78).

CONCLUSIONS: ACEs were associated with poor early childhood mental health and chronic medical conditions, and, among children aged 3 to 5, social development. Efforts are needed to examine whether providing early intervention to families with multiple stressors mitigates the impact of ACEs on children's outcomes.

KEYWORDS: ACE; adverse childhood experience; child welfare; mental health

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WHAT'S NEW

Adverse childhood experiences (ACEs) were prevalent in 18- to 71-month-olds in child welfare and were associated with poor mental health and chronic medical conditions, and, among 36- to 71-month-olds, social development. This suggests that ACEs may have short-term effects on young children.

TOXIC STRESS HAS been defined as exposure to chronic, severe, and prolonged stress, occurring in the absence of protective factors.¹ Excessive stress in early childhood is a particular risk because it can disrupt developing brain circuits and increase levels of stress hormones, both of which can lead to problems lasting into adulthood.²

The Adverse Childhood Experiences (ACE) study, a collaboration between the US Centers for Disease Control

and Prevention and Kaiser Permanente, was a retrospective study examining the long-term impact of adverse experiences, such as childhood abuse, neglect, and household dysfunction, that may cause stress.³ This study demonstrated that greater numbers of stressors experienced early in life were associated with later-in-life risk taking and unhealthy lifestyles, as well as with disease,⁴ suggesting that cumulative stress, or allostatic load,⁵ can have lifetime effects on health. Subsequent research has shown ACEs to be linked to neurobiologic changes, as well as both structural and functional alterations in the brain.^{6,7} However, most ACE research has occurred retrospectively among individuals already living with exposure to stress for years.^{8–10} Although some research has found relationships between adverse experiences and health outcomes among children,^{11–14} the literature is unclear as to whether early exposure to multiple stressors has relatively immediate

and measurable consequences among young children at risk for removal from the home. Further, although there is research showing that more than half of children in the child welfare system have experienced 4 or more ACEs,¹⁵ little attention has been specifically paid to the prevalence of ACEs among the at-risk group of children who have been referred to child welfare services but not removed from the home.

In this study, we examine the adverse experiences of young children investigated by US child welfare agencies using data from the National Survey of Child and Adolescent Well-Being (NSCAW) II. Specifically, we examined the prevalence of ACEs among young children who have remained in their homes, as well as the relationships between ACEs and mental health, chronic medical conditions, and social development among those children. The ability to identify the children most at risk in this highly vulnerable population will better enable limited resources to be appropriately targeted.

METHODS

DESIGN AND ANALYTIC SAMPLE

We used data from the baseline interviews of NSCAW II, a study of 5872 youth ages 0 to 17.5 years referred to US child welfare agencies for whom an investigation of potential maltreatment was completed between February 2008 and April 2009.¹⁶ Interviews were conducted with caregivers and child welfare workers. Initial interviews were conducted approximately 4 to 5 months after completed child welfare investigations.¹⁷

NSCAW II, like its predecessor, NSCAW I, used a 2-stage national probability sample. In the first stage, primary sampling units (PSUs, most often single counties) were sampled. Of the 92 original PSUs in NSCAW I, 71 were eligible and agreed to participate in NSCAW II; 10 additional PSUs were added to replace the PSUs that declined to participate or were no longer eligible.¹⁷ In the second stage, children were sampled from lists of closed child welfare investigations within participating PSUs. At the child level, only one child was sampled from each home.

MEASURES

ACEs, as defined in the original research on this topic, consist of 10 adverse events including exposure to maltreatment, and to specific caregiver and household characteristics,³ all of which were available in the NSCAW II data (Table 1). To create ACE categories that match the originals as closely as possible, we followed the categorization used by Stambaugh et al,¹⁵ with a few exceptions (Table 1). For example, although Stambaugh et al included abandonment and deceased parents in the “parental separation or divorce” ACE, we did not, based on the original definition of this ACE.³ Further, Stambaugh et al included forced sex as reported by youth, but this measure was only used among children aged >11 years in this data set, so it was not possible to analyze this variable with our young sample.

Table 1. ACE Definitions

Original CDC Study ACE Construct*	Current NSCAW II Study
Physical abuse	<ul style="list-style-type: none"> Caregiver report of physical assault ever (from CTSPC).** Caseworker report of physical maltreatment.
Sexual abuse	<ul style="list-style-type: none"> Caregiver report of sexual maltreatment ever (from CTSPC).** Caseworker report of sexual maltreatment.
Emotional abuse	<ul style="list-style-type: none"> Caregiver report of psychological aggression ever (from CTSPC).**
Physical neglect	<ul style="list-style-type: none"> Caregiver report of child neglect ever (from CTSPC).** Caseworker report of neglect (abandonment or failure to provide or supervise).
Emotional neglect	<ul style="list-style-type: none"> Caregiver report that in past 12 months he/she was not able to show child that he/she loved him/her.
Mother treated violently	<ul style="list-style-type: none"> Caregiver report of incidence of violence ever (from CTS2).*** Caseworker report of a history of domestic violence against the caregiver. Caseworker report of active domestic violence at the time of the investigation.
Household substance abuse	<ul style="list-style-type: none"> Caregiver report of alcohol dependence (from AUDIT >8) or substantial level of drug-related problem (DAST-20 ≥11). Caseworker report of active alcohol or drug use by primary or secondary caregiver.
Household mental illness	<ul style="list-style-type: none"> Caregiver report of depression (from CIDI-SF). Caseworker report of caregiver serious mental health or emotional problems at the time of investigation.
Parental separation or divorce	<ul style="list-style-type: none"> Caregiver report of separation or divorce.
Incarcerated household member	<ul style="list-style-type: none"> Caregiver report of time in prison. Caseworker report of caregiver recent history of arrests or detention in jail or prison.

ACE indicates adverse childhood experience; CDC, Centers for Disease Control and Prevention; NSCAW II, National Survey of Child and Adolescent Well-Being II; CTSPC, Conflict Tactics Scale—Parent—Child; CTS2, Revised Conflict Tactics Scale; AUDIT, World Health Organization Alcohol Use Disorders Identification Test; DAST-20, Drug Abuse Screening Test; and CIDI-SF, Composite International Diagnostic Interview, Short Form.

*Data from Centers for Disease Control and Prevention.³

**Parent-child conflict tactics scale.

***Conflict tactics scale.

In the NSCAW II data, current maltreatment type was based on information from the case file. Six variables representing different types of maltreatment over the

lifetime were coded as having been reported (not necessarily substantiated) or not by caregiver or caseworker, and were collapsed into 5 variables: 1) any physical abuse ever, 2) any sexual abuse ever, 3) any emotional abuse ever, 4) any physical neglect/abandonment ever, and 5) emotional neglect in past 12 months. The ACE category “mother treated violently” was measured systematically with 9 questions from the Physical Violence Scale of the Revised Conflict Tactics Scale (CTS2), which assesses domestic violence against the caregiver in the past year (reliability $\alpha = .86$).¹⁸ Household substance abuse was measured with risk assessment items on the caseworker questionnaire, or a score of 8 or higher on the World Health Organization Alcohol Use Disorders Identification Test (AUDIT) or an 11 or higher on the Drug Abuse Screening Test (DAST-20), both of which were systematically implemented and have been shown to have high sensitivity and specificity^{19,20}; substance abuse was defined as alcohol or drug abuse by the primary or secondary caregiver. Household mental illness was measured by direct caseworker report of primary caregiver serious mental health or emotional problem, and by the Composite International Diagnostic Interview, Short Form (CIDI-SF), which was systematically implemented and included problems experienced by both the primary and secondary caregiver in the last 12 months. The CIDI-SF is a self-report screening tool to assess for the presence of 8 mental health and substance use disorders. It was developed by the World Health Organization and adapted from the Composite International Diagnostic Interview, which has been shown to have an overall kappa value of 0.77, diagnostic sensitivity of 0.74, and specificity of 0.98.²¹ Parental separation or divorce was based on caregiver status at the time of the baseline interview. Incarcerated household member was based on the recent arrest or detention of the primary and secondary caregivers as reported on the caseworker questionnaire or by the caregiver.

DEMOGRAPHICS

Demographic information was collected from the caregiver at the baseline interview and included child age, sex, and race/ethnicity; caregiver age, education, and employment status; and family income. Federal poverty level (FPL) was calculated on the basis of income and household size.

DEPENDENT VARIABLES

The Child Behavior Checklist (CBCL 1.5-5), a symptom checklist, was administered to caregivers of children 18 to 71 months old. The CBCL provides reports from caregivers regarding a child's competencies and behavioral/emotional problems. A *T* score of ≥ 64 is considered a clinically significant problem score. We did not include the subclinical range because preliminary analyses showed that its relationship to ACE did not differ from the nonclinical range. Test-retest reliability for the Total Problem Score is .90, and the CBCL correctly classifies 84.2% of children referred for mental health services as in need of those services (7.3% false-positive findings and 8.6% false-negative findings).²²

To determine chronic medical conditions, we used a measure developed by Stein et al¹⁷ using NSCAW II data. The measure included diagnoses that are usually considered chronic, as well as others where chronicity is possible but uncertain: asthma, attention-deficit/hyperactivity disorder, AIDS, autism, Down syndrome, diabetes, cystic fibrosis, mental retardation/developmental disabilities, cerebral palsy, muscular dystrophy, heart problems, hypertension, blood problems, migraines/frequent headaches, arthritis/joint problems, dental problems, repeated ear infections and back/neck problems, depression, anxiety, and eating disorders, and other health problems. Children were considered to have a chronic medical condition if they had at least one of these reported diagnoses.

The Vineland Adaptive Behavior Scale (VABS) screener, delivered to caregivers, was designed to measure daily living skills among children ages birth to 18 years. The 45-item screener was developed from the 261-item VABS.²³ NSCAW II included both the Daily Living Skills and Socialization domains, but only the latter is included in this analysis to measure social development. The Socialization scale includes interpersonal relationships, play and leisure time, and coping skills, and has been shown to have high internal consistency ($\alpha = 0.96$), high intraclass correlation between parents (0.92), and high test-retest intraclass correlation (0.91).²⁴ Children were considered to have low scores, and thus potentially problematic social development, if their VABS was less than 70.

ANALYSIS

NSCAW-developed probability weights were used in all analyses. Analysis weights were constructed in stages corresponding to the stages of the sample design, accounting for the probability of county selection and the probability of each child's selection within a county, given the youth's county of residence. Weights were further adjusted to account for small deviations from the original sampling plan, and for nonresponse patterns. All estimates were generated using the weights, and therefore, results can be inferred to apply to the investigated US child welfare population.

Initial analyses examined the weighted distribution of demographic factors and ACEs in our sample. We then examined the association between ACEs and children's mental health (CBCL), reported chronic medical conditions, and social development (Vineland Socialization Scale) in bivariate and multivariable analyses. Weighted bivariate analyses were also stratified by age group to reflect potential differences in the relationship between ACEs and our outcomes in toddlers and preschool/school-age children (18–35 months vs 36–71 months). Weighted multivariable logistic regression models predicting a problem CBCL score, chronic medical conditions, and a low Vineland Socialization score were constructed in a stepwise fashion, and demographic factors, including child's age and race/ethnicity, caregivers' age, and FPL, were individually deleted from the model if they were not significant at $\alpha = 0.05$; demographic factors were also tested as confounders. On the basis of the bivariate

analyses, an interaction term between ACE count and child age was tested in the models as well. Full models resulted in similar findings to the reduced models, so only the reduced models are presented here.

All procedures for NSCAW II were approved by the Research Triangle Institute's institutional review board, and all analytic work on the NSCAW II deidentified data was approved by the Rady Children's Hospital institutional review board. All analyses used SAS callable SUDAAN, version 11 (SAS Institute, Cary, NC).

RESULTS

SAMPLE

Our sample is restricted to young children (aged 18 to 71 months) in order to examine stressors experienced in early childhood. Although measures were available for 12- to 17-month-olds, in some instances they were different

than the measures used for older children, so we did not include them due to difficulties making comparisons across measures. Analyses were further restricted to children and families in which the child did not experience an out-of-home placement from the time of the index child welfare report to the time of the baseline interview. This restriction was applied in order to focus on this particular vulnerable group of children, and because the stress of a current out-of-home placement may confound the relationship between ACEs and children's health.²⁵ The total sample for these analyses was 912 children (317 aged 18–35 months, 595 aged 36–71 months) and their caregivers.

Just over half (55.4%) of the sampled children were boys; almost a quarter were black (23.6%), almost a third Hispanic (30.3%), and 40.2% white. More than two thirds of the children were 36 to 71 months old (69.3%). Most caregivers were under 35 years old (81%), and more than one quarter (28.5%) had less than a high school degree.

Table 2. Baseline Characteristics and Mean ACEs, Baseline NSCAW II, 2008–2009 (n = 912)

Characteristic	Weighted %	No. of ACEs		
		Weighted Mean	SEM	Lower Mean, Upper Mean
Total sample		3.61	.11	3.40, 3.83
Child's sex				
Male	55.4	3.63	.11	3.40, 3.85
Female	44.6	3.60	.19	3.22, 3.98
Child's race/ethnicity				
Black	23.6	3.57	.18	3.22, 3.92
White	40.2	3.77	.15	3.47, 4.08
Hispanic	30.3	3.48	.19	3.10, 3.86
Other	5.8	3.50	.42	2.67, 4.34
Child's age				
18–35 mo	30.7	3.29	.19	2.90, 3.68
36–71 mo	69.3	3.76	.13	3.49, 4.02
Caregiver's age*				
≤24 y	33.9	3.41	.18	3.05, 3.77
25–34 y	47.1	3.90	.14	3.61, 4.19
35+ y	19.0	3.27	.22	2.82, 3.71
Caregiver's degree				
Less than HS	28.5	3.48	.21	3.06, 3.90
HS	47.2	3.60	.12	3.36, 3.85
HS plus	24.3	3.79	.15	3.50, 4.09
Caregiver's employment				
Any employment	47.3	3.57	.12	3.34, 3.80
Unemployed	50.6	3.63	.17	3.30, 3.97
Other	2.1	3.99	.25	3.50, 4.49
Federal poverty level*				
<100%	62.8	3.74	.15	3.45, 4.04
100–200%	25.4	3.73	.16	3.41, 4.05
>200%	11.8	3.16	.19	2.78, 3.53
CBCL score***				
≥64	13.6	4.30	.24	3.82, 4.77
<64	86.4	3.51	.10	3.31, 3.71
Chronic medical condition**				
Yes	35.5	3.93	.10	3.72, 4.14
No	64.5	3.44	.15	3.13, 3.74
Vineland Socialization score				
Severe	8.0	3.67	.63	2.43, 4.92
Moderate	92.0	3.61	.09	3.42, 3.79

ACE indicates adverse childhood experience; NSCAW II, National Survey of Child and Adolescent Well-Being II; SEM, standard error of the mean; HS, high school; and CBCL, Child Behavior Checklist.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

Half were unemployed (50.6%), and nearly two thirds (62.8%) had incomes under 100% of the FPL (Table 2).

A total of 13.6% of these young children scored over the problem score cutoff (≥ 64) on the CBCL. More than one third (35.5%) were reported to have a chronic medical condition, and 8% had a low score (< 70) on the Vineland Socialization Scale.

DISTRIBUTION OF ACEs

Nearly all children (98.1%) were reported to have experienced at least 1 ACE; 7.7% were reported to have 1 ACE, 39.9% 2 or 3 ACEs, and 50.5% 4 or more ACEs. Approximately three quarters of all young children were reported to have experienced emotional (78.0%) or physical (70.8%) abuse. About half were reported to have experienced physical neglect (53.5%) or caregiver violence (49.8%); more than a third were reported to have a caregiver with mental health or emotional problems (31.6%), and one quarter were reported to have a caregiver who was separated or divorced (26.7%). One in 5 reported household substance abuse (22.2%), and 1 in 10 reported emotional neglect (10.6%) or a caregiver with a recent history of arrest or detention (10.5%). Few children were reported to have experienced sexual abuse (7.6%) (Figure).

VARIATION IN MEAN NUMBER OF ACE

Children had a mean of 3.6 ACEs. Those whose caregivers were 25 to 34 years old had more reported ACEs than those with younger or older caregivers (3.9 vs 3.4 and 3.3, $P < .05$ for both comparisons), and children living in households at more than 200% of FPL had fewer reported ACEs than those living in $< 100\%$ or 100% to 200% of FPL (3.2 vs 3.7 and 3.7, $P < .05$ for both comparisons). There were no other differences in mean number of reported ACEs by demographic characteristics (Table 2).

There were differences in the numbers of reported ACEs by children's mental health, chronic medical conditions, and social development. Children who scored over the CBCL problem score cutoff had more reported ACEs than those who did not (4.3 vs 3.5, $P < .001$). However, stratified analyses showed that this relationship was only significant among older children (36–71 months) (4.4 vs 3.6, $P = .009$). In addition, children with chronic medical conditions had more reported ACEs than those without chronic medical conditions (3.9 vs 3.4, $P = .009$). Again, this relationship only held among older children (4.1 vs

3.5, $P = .011$). In the full sample, average reported ACEs did not differ by Vineland Socialization score. However, among older children (36–71 months) low Vineland Socialization scores were associated with having more reported ACEs (5.4 vs 3.7, $P = .049$). This relationship was not significant among younger children.

In multivariable logistic regression analyses, the number of ACE reported for a child significantly predicted CBCL score (the interaction term between ACE count and child age was not significant). For every additional reported adverse experience, there was a 32% increase in the odds of having a problem score on the CBCL (odds ratio [OR] 1.32, 95% confidence interval [CI] 1.14, 1.53; $P < .001$; Table 3). Similarly, each additional ACE increased the odds of having a chronic medical condition by 21% (OR 1.21, 95% CI 1.05, 1.40, $P = .01$); again, the interaction term was not significant. When we examined social development, we found that the interaction between adverse experiences and child age was significant ($P = .019$). Among children aged 36 to 71 months, for every additional reported adverse experience, there was a 77% increase in the odds of a low Vineland Socialization score (OR 1.77, 95% CI 1.12, 2.78; $P = .015$). Among younger children, aged 18 to 35 months, the relationship was not significant (OR 0.81, 95% CI 0.55, 1.18; $P = .266$).

DISCUSSION

In this study of children in the child welfare system, we found high rates of adverse experiences. The number of ACEs children experienced varied by only a few demographic characteristics; children with caregivers aged 25 to 34 years, on average, experienced more ACEs, as did children living in greater levels of poverty. Further, a greater number was found among those with mental health and chronic medical problems, and, among older children, social development problems. These data highlight the prevalence of adverse experiences among very young children in the most vulnerable population, and they suggest that the physiologic results of toxic stress may begin almost immediately.

On average, young children in our sample were reported to have more than 3 ACEs. This is troubling, as early childhood toxic stress has been shown to be related to physiologic disruptions, such as alterations in immune function²⁶ and increases in inflammatory markers,^{27,28} which are associated with many significant poor health outcomes.^{29–31} Prior research has also shown that adolescents and adults who experienced multiple childhood adversities are more likely to experience mental illness and adopt unhealthy later-life behaviors as coping mechanisms.^{4,8–10}

Further, half were reported to have 4 or more adverse experiences. This is similar to the 51% reported by Stambaugh and colleagues,¹⁵ who also used NSCAW II to examine adverse events among children in in-home and out-of-home care. Although data from the 2011–2012 National Survey of Children's Health showed that children living in out-of-home care reported more adverse

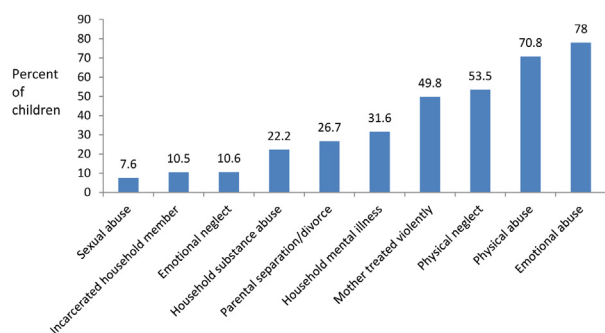


Figure. Distribution of ACEs, baseline NSCAW II, 2008–2009.

Table 3. Multivariable Models Predicting Mental Health, Chronic Medical Condition, and Development Problems, Baseline NSCAW II, 2008–2009

Characteristic	Odds Ratio	95% Confidence Interval	P
Mental health problem, ACE count*	1.32	1.14, 1.53	<.001
Chronic medical condition, ACE count†	1.21	1.05, 1.40	.010
Social development problem, child age × ACE count‡	2.2	1.14, 4.26	.019

NSCAW II indicates National Survey of Child and Adolescent Well-Being II; and ACEs, adverse childhood experiences.

*Mental health problems are measured with the Child Behavior Checklist (CBCL) total score (mental health problem ≥ 64).

†Chronic medical conditions are measured with a composite score from Stein et al.¹⁷ Model also includes child sex and caregiver education.

‡Social development problems are measured with the Vineland Socialization Scale (development problem < 70). Model also includes child race/ethnicity, caregiver employment, and main effects for the statistically significant interaction.

experiences,³² our data suggested that all children in contact with the child welfare system, not only those in out-of-home placements, are at higher risk for multiple adverse experiences.

Our analyses found high rates of mental health and chronic medical problems compared to community samples,^{33,34} but children in our study had a prevalence of social development problems similar to the general population.³⁵ Moreover, we found that a higher number of ACEs before age 5 was associated with a greater likelihood of mental health and chronic medical problems. However, the association between ACEs and social development was only significant among 3- to 5-year-olds. This suggests that response to stress may develop over time as allostatic load increases.^{36,37} Alternatively, it may be that the relationship between ACEs and social development changes over time, at different stages of development. Clearly, this study cannot establish directionality; although ACEs may lead to poor childhood outcomes, prior research has suggested that poor childhood health can lead to ACEs.³⁸ However, among very young children, the latter is less likely, and our findings suggest that adverse experiences are associated with a range of proximal negative outcomes. That signs of poor health and social development are apparent in children this young suggests that stress may have an immediate impact and should be addressed by pediatric health care providers, who are usually the only health professionals to routinely interact with children this young.³⁹ This will increasingly be true as more families have routine access to health care as a result of the Affordable Care Act.

Most previous studies have examined the association between ACEs and health outcomes retrospectively among adults who have lived with the effects of their adverse experiences for years. The few studies that have focused on children report findings similar to ours. For example, Marie-Mitchell and O'Connor¹¹ studied 4- and 5-year-olds in an urban health center and found a relationship between adverse experiences and developmental delays and injuries, but they found mixed results regarding physical health. Similarly, Burke et al¹² showed that an increased number of ACEs was associated with an increased risk of learning or behavioral disorders and a high body mass index among children and adolescents in a child health center. Flaherty et al¹³ followed young children at risk for abuse and neglect and found that an accumulation of 4 adverse experiences at 4 years tripled the

risk of illness 2 years later; similar, although somewhat mixed, results were found when these children were examined at age 12.¹⁴ Our results suggest that the effects of adverse experiences may occur almost immediately and that even the very youngest children are not immune.

These data are not without limitations. Our categorization of ACEs was slightly different from the original ACEs study, and some of our variables did not capture events over the lifetime, as the original ACEs study did. However, given the young age of our study population, the difference between these time frames is not great, and the variables used here are conceptually comparable to the original study. Additionally, all data were taken from caregiver interviews or case-worker reports; no independent verification of the accuracy of the reporting was conducted, and because some measures were not gathered with a systematic protocol, the use of case file data to describe ACEs may not accurately capture each adverse experience. Further, caregivers with mental health or emotional issues may be more likely to report worse outcomes in their children. The number of children in some categories, such as older children with severe Vineland Socialization scores, was small; small numbers and the lack of a true no-risk group may have tempered some of our findings. In addition, the measures used are not comprehensive and without limitations. For example, although the CBCL and CIDI-SF correlate well with psychiatric diagnoses, neither is a diagnostic measure. As a result, these mental health measures should be considered indicators of potential mental health problems. Similarly, although the Vineland Socialization Scale is a valid measure of social development, it captures only one domain of development and is sensitive to age effects. Finally, the data are cross-sectional and thus cannot determine causation or directionality.

CONCLUSIONS

This examination of a nationally representative sample of children in the child welfare system highlights the challenges facing even very young children who remain in their homes, and our findings indicate that early ACEs may lead to early childhood mental health, chronic medical, and social development problems. This suggests that even within the child welfare population, it may make sense to target prevention efforts to children who have experienced more adverse experiences. However, a rigorous prospective study should be performed to prove the association between ACEs and poor childhood outcomes among young

children. Once proven, efforts should be made to understand if early intervention can prevent adverse health outcomes. Assessments during prenatal and pediatric health care visits may be important to identifying at-risk caregivers and link them to needed services.⁴⁰ In fact, recognizing that addressing behavioral and developmental concerns is essential to children's health, the American Academy of Pediatrics suggests that the "boundaries of pediatric concern must move beyond the acute medical care of children"⁴¹ and provides physicians with sample screening tools to use with their patients (https://www.aap.org/en-us/Documents/ttb_addressing_aces.pdf). With early intervention, some of the short- and long-term negative outcomes associated with ACE may be averted.

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