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## Adverse childhood experiences and preschool suspension/expulsion: A population study

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### ARTICLE INFO

#### Keywords:

Preschool  
Child  
Adverse childhood experiences  
Parental notification

### ABSTRACT

**Background:** Preschool suspension and expulsion rates are typically based on teacher reports, and don't simultaneously account for adverse childhood experiences (ACEs).

**Objective:** To examine estimates in the United States of parent-reported preschool suspension and expulsion rates, in the context of ACEs.

**Participants and setting:** Parents of children aged 3–5 years old ( $N = 6,100$ ) in the 2016 National Survey of Children's Health dataset.

**Method:** We reported the prevalence estimates of preschool suspension and expulsion, and estimated the unique variance of ACEs as risk factors using weighted sequential logistic regression. **Results:** An estimated 174,309 preschoolers (2.0%) were suspended, and 17,248 (0.2%) children were expelled annually. If divided by 36 school weeks, the instances of weekly suspension and expulsion were at least 4,842 and 479 respectively. Controlling for previous risk factors (i.e., age, gender, race, ethnicity), the odds ratio increased by 80% for every unit of ACEs increment. Children were more likely to be suspended or expelled if they had domestic violence ( $OR = 10.6$ ,  $p < .001$ ), living with mental illness ( $OR = 9.8$ ,  $p < .001$ ), adult substance abuse ( $OR = 4.8$ ,  $p < .001$ ), and victim of violence ( $OR = 4.5$ ,  $p = .004$ ), living in high poverty ( $OR = 3.9$ ,  $p = .001$ ), divorced parents ( $OR = 3.3$ ,  $p = .001$ ), and parent incarceration ( $OR = 3.0$ ,  $p = .009$ ).

**Conclusion:** The alarming suspension and expulsion rates call for more comprehensive outreach prevention and response efforts in preschool settings. Cross system collaboration and family support are essential to this work.

### 1. Introduction

Preschool education is critical for young children because it builds the foundation of learning, health and well-being. This foundation is critical because optimal early learning experiences can lead to later success in school and life (Campbell & Ramey, 1994). Preschool suspension and expulsion, however, deprive children of positive learning experiences that nurture learning and development (Gilliam & Shahar, 2006). Preschool suspension is considered the temporary removal of a child from their classroom, while expulsion is the termination of educational services (American Academy of Pediatrics Committee on School Health, 2013). Regardless of the short- or long-term nature, both preschool expulsion and suspension have been identified as and remain critical

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<https://doi.org/10.1016/j.chiabu.2019.104149>

Received 22 March 2019; Received in revised form 24 July 2019; Accepted 21 August 2019  
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issues in contemporary early childhood education (U.S. Department of Health & Human Services & U.S Department of Education, 2014).

### 1.1. Preschool expulsion and suspension

Children with early suspension and expulsion experiences are more likely to encounter academic failure and grade retention, hold negative school attitudes, dropout of high school, and be involved in juvenile justice systems (American Academy of Pediatrics Committee on School Health, 2013; American Psychological Association Zero Tolerance Task Force, 2008; Petras, Masyn, Buckley, Ialongo, & Kellam, 2011). Given the adverse effects of preschool expulsion and suspension, AAP advocates replacing these practices with prevention efforts that focus on early identification of support needs (American Academy of Pediatrics Committee on School Health, 2013). The U.S. Department of Health and Human Services and U.S Department of Education (2014) jointly released a policy statement which condemns suspension and expulsion practices in preschools and instead, advocates that preschool suspension and expulsion rates should be zero.

Despite the national interest, the progress to reduce suspension and expulsion remains unclear, and at the very least, preschool suspension and expulsion is under researched. Recent research stems from the seminal work of Gilliam (2005), which suggested the expulsion rate for preschool children was 6.7 out of 1,000 children in state-funded preschool programs (Gilliam, 2005), and over 10% of preschool teachers in state-funded preschool programs reported expelling at least one preschooler. This rate of preschool expulsion is 3.2% higher than the expulsion rate in K-12 settings (Gilliam, 2005). Subsequently, more than 300,000 children may be expelled each year based on the estimated rates and the current enrollment of young children in early care and education settings (Schachner et al., 2016).

While these preschool suspension and expulsion rates are striking, the estimates are primarily based on teacher (Gilliam, 2005) or superintendent report (Gilliam & Shahar, 2006). No other sources of data have been utilized to triangulate the findings. Research suggests the negative impact of preschool suspension or expulsion extends beyond the child themselves to their parents and family members (Meek & Gilliam, 2016). Estimates based on parental reports could confirm, negate, or extend the current research about preschool expulsion and suspension.

### 1.2. Disparity in suspension and expulsion

Recent studies suggest a disparity in discipline practices in preschool settings (Schachner et al., 2016). Children with certain characteristics are more likely to be suspended or expelled. Specifically, age is an important indicator as four-year-olds are expelled at a rate about 50% greater than 3-year-olds (Gilliam & Shahar, 2006). Moreover, boys are expelled at a rate more than 4.5 times that of girls (Gilliam & Shahar, 2006). Black children account for almost 50% of public preschool suspensions but less than one-fifth of all preschoolers. Black children are 2 times as likely to be expelled as Latino and White children (Krezmien, Leone, & Achilles, 2006; Schachner et al., 2016).

Certain program and teacher characteristics are related to higher rates of suspension and expulsion. More suspensions and expulsions occur with large group sizes, higher child-teacher ratios, and a lack of support for teachers with regard to managing challenging behaviors, as well as staff characteristics such as depression or sense of job stress (Carlson et al., 2012; Schachner et al., 2016). Teachers' implicit bias and cultural differences in views on discipline strategies and their application to teacher-child relationships play a role in exclusionary discipline practices (Gilliam, Maupin, Reyes, Accavitti, & Shic, 2016; Gilliam, Maupin, & Reyes, 2016). While risk factors related to child, teacher, and program characteristics have been identified, the relation between adverse childhood experiences and preschool suspension and expulsion have yet to be explored.

### 1.3. Adverse childhood experiences

Adverse Childhood Experiences (ACEs) are broadly defined as stressful or traumatic events that people experience early in life (Felitti et al., 1998). These experiences are negative events that occur in a child's family or social environment and may cause harm or distress (Vervoort-Schel et al., 2018). ACEs not only include all forms of physical and emotional maltreatment, sexual abuse, neglect, and exploitation but also include experiences such as witnessing domestic violence, parental divorce or incarceration, caregiver alcohol or drug or substance abuse disorders (Centers for Disease Control & Prevention, 2018; Substance Abuse & Mental Health Services Administration, 2017).

Family well-being is a strong predictor of children's school readiness (Duncan & Magnuson, 2011) while ACEs such as parental mental health difficulties and substance abuse contribute to behavioral and academic challenges for children (Mensah & Kiernan, 2010; Costello, Compton, Keeler, & Angold, 2003). Children with high levels of exposure to adversity are associated with higher rates of disabilities such as mental disorders (McLaughlin et al., 2012), behavior disorders (Hunt, Slack, & Berger, 2017), anxiety and depression (Rose, Xie, & Stineman, 2014), which may potentially increase the likelihood of preschool suspension or expulsion.

Preschool is a unique school setting in which children are introduced to school and how to express and regulate their emotions. While supporting the social emotional development of young children is an essential responsibility of early childhood educators, many teachers report feeling unprepared or ill equipped to support children with challenging behavior (Martin, Bosk, & Bailey, 2018). Additionally, teachers may not be familiar with what ACEs are and how ACEs impact the lives of children and families they support. Despite the overlapping nature of preschool suspension and expulsion and ACEs, few research studies have examined these phenomena simultaneously.

We argue that preschool children with ACEs may experience suspension/expulsion at higher rates. Children who are exposed to cumulative ACEs experiences are experiencing constant toxic stress (Center on the Developing Child, 2019) and as a result, toxic stress can negatively affect the development of the body and brain by disrupting learning, behavior, immunity, and gene development (Ridout, Khan, & Ridout, 2018). Therefore, children who experience ACEs may also have difficulty developing important executive functioning skills such as self-regulation skills (i.e. controlling emotions in challenging situations). The challenging behaviors often triggers a response from a teacher in the form of discipline. Understanding the links between ACEs with preschool suspension and expulsion may better inform prevention and response strategies and policies in early childhood settings.

#### 1.4. Objectives

To address these gaps, the objectives of this study are to a) estimate the prevalence of preschool suspension and expulsion based on parental report and b) understand how ACEs may impact the likelihood of preschool suspension and expulsion. Specifically, we addressed the following research questions: (1) What is the preschool suspension and expulsion estimate based on national parent-reported data? (2) What is the cumulative effect of ACEs on the likelihood of preschool suspension and expulsion? (3) How does each ACE impact the likelihood of preschool suspension and expulsion?

We hypothesized that the preschool suspension and expulsion rates would be higher compared to previous studies. We also hypothesized ACEs would significantly impact expulsion and suspension even controlling for children's demographic characteristics (i.e., age, gender, home language, race and ethnicity). This work extends preschool expulsion and suspension and ACEs research. By examining the intersection of ACEs and preschool suspension and expulsion through this nationally representative data set, the findings can further inform how early childhood educators can provide safe supportive early learning environments for all children and families.

## 2. Method

### 2.1. Data

This study used the 2016 National Survey of Children's Health (NSCH) dataset collected from June 2016-February 2017. The NSCH is designed to produce national data on the physical and emotional health of American children age 0–17 years old. The 2016 NSCH used an address-based sample covering the 50 states and the District of Columbia. Addresses were randomly sampled within states using a child identifier that was developed by the Census Bureau's Center for Administrative Records Research and Applications and builds on multiple sources of administrative data. A sample of 364,150 households were screened with a questionnaire to determine if they meet the criteria (i.e., at least one child with health concern indicated in the screening survey). Eligible household ( $N = 68,961$ ) received a more detailed, age-specific questionnaire. Of the 50,212 (response rate = 72.8%) participants, the analyses for this study were restricted to children under 5 years old who attended preschool or childcare ( $N = 6,100$ ). A number of 1,245 children were excluded as they did not attend preschool or childcare. Weighted estimates (composed of a base sampling weight and adjusted for both screener and topical nonresponse) from the dataset generalize to state and national resident child populations. The denominator of all the analyses was all the households which were screened. A full description of the survey methods has been published (United States Census Bureau, 2018).

### 2.2. Variables

#### 2.2.1. Suspension and expulsion

Participants reported if they were asked to keep their child home from any child care or preschool because of their behavior (e.g. hitting, kicking, biting, tantrums or disobeying). Suspension was selected if the participants chose "Yes, I was told to pick up my child early on 1 or more days" or "Yes, I had to keep my child home for 1 full day or more." Expulsion was defined as "Yes permanently, I was told my child could no longer attend this child care center or preschool." Descriptive results suggest the expulsion category may not have enough sample for the regression analysis. To maximize statistical power, a new binary variable was created and marked as "yes" if the child had either suspension or expulsion.

#### 2.2.2. Adverse childhood experiences

While there are over 14 ACEs assessment methods (Bethell et al., 2017), the 2016 NSCH followed the 2011/12 NSCH design and included the list of ACEs used in the original CDC/Kaiser adult ACEs study, with modifications overseen by a technical expert panel and evaluated using standard cognitive interviewing-based survey item testing through the CDC's National Center for Health Statistics (Bethell, Newacheck, Hawes, & Halfon, 2014). We chose the seven ACEs indicators as follows: (1) household below the poverty level; (2) parent or guardian divorced, indicating that the child had lived with a parent or guardian who got divorced or separated after the child was born; (3) parental or guardian incarceration, indicating that the child had lived with a parent or guardian who served time in jail or prison after the child was born; (4) domestic violence, indicating that the child had seen or heard parents, guardians, or other adults in his/her home slap, hit, kick, punch, or beat each other up; (5) victim of violence, indicating that the child was the victim of violence or witnessed violence in his/her neighborhood; (6) household member mental illness, indicating that the child had lived with someone who was mentally ill, suicidal or severely depressed for more than a couple of weeks; and (7) household member substance abuse, indicating that the child had lived with someone who had a problem with alcohol or drugs. To

measure the accumulated effect of ACEs, we created a sum score by adding up the number of ACEs a child experienced.

### 2.2.3. Covariates

The multivariate analyses are adjusted for a number of child characteristics that might be associated with preschool suspension or expulsion based on previous literature. The variables included age (ranging from 3 to 5), gender (male, female), race (White, Black, other), and ethnicity (Hispanic, non-Hispanic).

### 2.3. Data analysis

All analyses were conducted with SAS 9.4 (SAS Institute Inc., 2015) complex sample weights to account for unequal probability of selection of households and children, nonresponse, and the underlying demographic distribution of U.S. noninstitutionalized children (Cheema, 2014). Meanwhile, the ACEs, suspension and expulsion variables had missingness less than 5% (0.8% to 3.8%). Therefore, the complete cases were used as the effect of imputation is trivial for low missing rate (Young, Weckman, & Holland, 2011). Secondary analysis of these de-identified data was exempt from the institutional human subject board review.

The prevalence ratio was estimated using weighted descriptive statistic. We conducted bivariate analyses (chi-square test of independence) to explore potential differences between children with and without suspension and expulsion based on child and family characteristics. To estimate the associations between the accumulative effect of ACEs and preschool suspension and expulsion (binary outcome (i.e., “yes” if the child had experienced either suspension or expulsion) while controlling the child level variables, we used weighted sequential logistic regression with the number of ACEs as the independent variable. Model 1 included child age, gender, ethnicity and race. Model 2 added the accumulated ACEs variable with control for the variables in model 1. To further examine how each specific ACEs associate with suspension and expulsion, we used weighted sequential logistic regression with each ACEs as the independent variable. Model 1 included child age, gender, ethnicity and race. Model 2 added each ACEs bivariate variable with control for the variables in model 1. The  $p$  value was adjusted to .006 (.05/8) using Bonferroni correction to control for type I error (Abdi, 2007). Model fit was evaluated using the Nagelkerke  $R^2$  effect size. Nagelkerke  $R^2$  is an adjusted version of the Cox & Snell  $R$ -square that adjusts the scale of the statistic to cover the full range from 0 to 1 (Nagelkerke, 1991). Logistic regression with a continuous predictor (i.e., accumulated ACEs) is interpreted as a one-unit increase in ACEs, we expect to see about certain percentage of increase in the odds of being suspended or expelled. Meanwhile, logistic regression with a dichotomous predictor is interpreted as having each specific ACEs and the odds ratio of being suspended or expelled (UCLA Statistical Consulting Group, 2019).

### 3. Results

The respondents were primarily biological or adoptive caregivers (91.6%) and 74% were married. The mean age was 37.4 years old and over 75% of respondents had high school degree. About 18% (1.6 million) of the households were below the federal poverty level. For the focus child, 50.9% were boys, the mean age was 4.1 years old, and identified their race as: White (67.6%), Black (14.3%) and other (18.1%). Over 88% of families used English as their home language and 21.8% were from Hispanic origins.

The population estimates of preschool suspension and expulsion are presented in Table 1. Based on parental report, an estimated 174,309 preschoolers (2.0%) were suspended (asked to pick up early or kept home), and 17,248 (0.2%) children were expelled in the past 12 months because of the child’s challenging behavior. Because participants were asked to choose one of the options even if the child were suspended and/or expelled multiple times, the estimates is conservative and the actual incidents could be much higher if respondents were asked to report the frequency count. Nonetheless, when divided the conservative estimates by 36 school weeks, the instances of weekly suspension and expulsion were at least 4,842 (174,309/36) and 479 (17,248/36) respectively.

Descriptive results of bivariate analyses (Table 2) suggested that the percentage of children who experienced suspension or expulsion differed based on child age ( $p < .001$ ) and ethnicity ( $p = .038$ ) but not other demographic characteristics. Meanwhile, there were significant differences between the two groups based on six out of the seven ACEs (except parent incarceration).

Results of weighted sequential logistic regression (Table 3) further illustrated the associations between suspension or expulsion and ACEs with control of the child demographic characteristics. Specifically, model 1 (Nagelkerke  $R^2 = .076$ ) indicated that male ( $OR = 2.6, p = .010$ ) and Hispanic ( $OR = 3.7, p = .002$ ) children were more likely to experience suspension or expulsion. Although minority (black or other) and older children tended to have higher suspension or expulsion ratios, there were no statistically significant relations among these variables.

Importantly, we observed a main effect regarding the number of ACEs a child experienced and the increased odds ratio of

**Table 1**  
Weighted Prevalence Estimates of Parent-Reported Preschool Suspension and Expulsion, National Survey of Children’s Health, 2016.

	Unweighted count	Population estimate	%	[95% CI]
Asked to pick up early on 1 or more days	84	124,075	1.4	[0.9 2.1]
Keep home for 1 full day or more	24	50,234	0.6	[0.3 1.1]
Expulsion	25	17,248	0.2	[0.1 0.3]
No S&E	5,967	8,839,142	97.9	[97.1 98.5]

Note. Population estimate was calculated based on unweighted count and sampling weight.

**Table 2**

Descriptive Statistics of Parent-Reported Children with and without Preschool Suspension and Expulsion, National Survey of Children’s Health, 2016.

		Suspension or Expulsion (N = 133)			Without Suspension and Expulsion (N = 5967)			p
		n <sup>†</sup>	Weighting %	[95% CI]	n <sup>†</sup>	Weighting %	[95% CI]	
Age	3	24	13.1	[5.8 27.2]	1,714	27.3	[25.1 29.6]	< .001
	4	55	50.5	[34.9 66.1]	2,096	36.8	[34.2 39.4]	
	5	54	36.3	[23.3 51.7]	2,157	36.0	[33.5 38.5]	
Gender	Male	98	73.1	[56.7 84.9]	3,121	50.4	[47.8 53.1]	.054
	Female	35	26.9	[15.1 43.3]	2,846	49.6	[46.9 52.2]	
Home language	English	128	96.4	[88.0 99.0]	5,561	88.6	[86.1 90.7]	.120
	Other	5	3.6	[1.0 12.0]	379	11.4	[9.3 13.9]	
Hispanic	Yes	14	6.1	[2.6 13.5]	620	22.1	[19.4 25.1]	.038
	No	119	93.9	[86.5 97.4]	5,347	77.9	[74.9 80.6]	
Race	White	98	54.4	[38.2 69.8]	4,598	67.9	[65.2 70.4]	.384
	Black	15	24.1	[12.0 42.4]	368	14.1	[12.1 16.4]	
	Other	20	21.5	[11.2 37.3]	1,001	18.0	[16.0 20.3]	
Poverty	< 100%	25	42.2	[26.7 59.4]	502	17.7	[15.4 20.2]	< .001
	100-200%	24	15.9	[8.3 28.5]	837	18.0	[15.8 20.3]	
	> 200%	84	41.9	[27.8 57.3]	4,628	64.4	[61.6 67.0]	
Domestic violence	Yes	21	31.3	[17.6 49.1]	155	3.3	[2.5 4.2]	< .001
	No	108	68.7	[50.9 82.4]	5,672	96.7	[95.8 97.5]	
Victim of violence	Yes	7	5.2	[2.1 12.4]	121	94.8	[87.6 97.9]	.004
	No	74	1.4	[0.9 2.0]	5,749	98.6	[98.0 99.1]	
Divorced	Yes	35	40.8	[25.7 57.9]	758	17.6	[15.3 20.2]	< .001
	No	92	59.2	[42.1 74.3]	5,094	82.4	[79.8 84.7]	
Incarceration	Yes	18	16.8	[8.6 30.5]	200	5.6	[4.3 7.1]	.212
	No	111	83.2	[69.5 91.4]	5,635	94.4	[92.9 95.7]	
Mental illness	Yes	22	30.6	[16.1 50.4]	293	5.3	[4.2 6.6]	< .001
	No	107	69.4	[49.6 83.9]	5,538	94.7	[93.4 95.8]	
Substance abuse	Yes	24	23.3	[11.3 42.1]	313	6.3	[5.1 7.7]	.020
	No	106	76.7	[57.9 88.7]	5,531	93.7	[92.3 94.9]	

Note. † The numbers were unweighted counts.

**Table 3**

Weighted Logistic Regression of Parent-Reported Preschool Suspension and Expulsion based on Disability Status and ACEs, National Survey of Children’s Health, 2016.

		Model 1			Model 2 <sup>†</sup>				
		OR	SE	Wald F	p	OR	SE	Wald F	p
Gender	Male	2.9	0.4	7.3	.007	2.5	0.4	4.7	.029
Age		1.22	0.2	1.5	.225	1.3	0.2	2.1	.147
Hispanic	Yes	4.1	0.5	9.6	.002	4.5	0.5	9.8	.002
Race	Other	1.4	0.4	1.2	.316	1.8	0.4	1.0	.381
	Black	2.0	0.5	1.3	.289	1.7	0.6	1.2	.321
# ACEs						1.8	0.1	42.8	< .001
# ACEs*Race	Other					1.2	0.2	0.4	.691
	Black					1.2	0.3	0.5	.211

Note. † Model 2 included the demographic variables, the number of ACEs and the interaction between ACEs and Race.

preschool suspension and expulsion. Specifically, the odds ratio of being suspended or expelled increased by 80% for every unit of ACEs increment (OR = 1.8, p < .001). Meanwhile, there is no significant interaction effect based on race (OR = 1.2, p = .691), meaning the association between the number of ACEs and preschool suspension and expulsion didn’t seem to differ based on different ethnicity subgroups.

The logistic regression results between each specific ACEs and preschool exclusion further illustrate the strong associations. As shown in Table 4, children were more likely to experience suspension or expulsion if having any of the ACEs (Nagelkerke R<sup>2</sup> ranged from .087 to .155), including domestic violence (OR = 10.6, p < .001), living with mental illness (OR = 9.8, p < .001), adult substance abuse (OR = 4.8, p < .001), and victim of violence (OR = 4.5, p = .004), living in high poverty (OR = 3.9, p = .001), divorced parents (OR = 3.3, p = .001), and parent incarceration (OR = 3.0, p = .009).



**Table 4**

Weighted Logistic Regression of Parent-Reported Preschool Suspension and Expulsion Based on Specific ACEs, National Survey of Children's Health, 2016.

		Model 1			<i>p</i>	Model 2 <sup>†</sup>			<i>p</i>
		OR	[95% CI]			OR	[95% CI]		
Gender	Male	2.61	[1.26	5.42]	.010				
Age	4	3.11	[1.17	8.24]	.105				
	5	2.20	[0.85	5.71]	.331				
Hispanic	Yes	3.68	[1.64	8.26]	.002				
Race	Other	1.84	[0.81	4.18]	.144				
	Black	2.00	[0.81	4.94]	.133				
Poverty	< 100%					3.90	[1.81	8.41]	.001
	100–200%								
Domestic violence	Yes					10.56	[4.58	24.36]	< .001
Victim of violence	Yes					4.45	[1.61	12.30]	.004
Live with mental illness	Yes					9.82	[4.05	23.83]	< .001
Substance abuse	Yes					4.84	[2.04	11.47]	< .001
Divorced	Yes					3.29	[1.58	6.86]	.001
Incarceration	Yes					2.99	[1.32	6.77]	.009

Note. <sup>†</sup>Model 2 controlled child level characteristics (i.e., gender, age, ethnicity, and race). The seven adverse childhood experience variables in Model 3 were analyzed separately.

#### 4. Discussion

This study provides the first prevalence estimate of preschool suspension and expulsion based on the parent report data from the 2016 National Survey of Children's Health. An estimated 0.2% of the preschool children are expelled at least once. The ratio is lower compared to previous findings (e.g., 0.6%, Gilliam, 2010). Several potential reasons may help explain the discrepancy. First, participants were asked in the current survey "whether or not" the children were expelled, while previous studies asked teachers and superintendents to report the frequency count of expulsion (Gilliam, 2010). In other words, a child may be expelled for multiple times but it was only counted once in the current study. Also, the data sources (parents versus teachers) and time difference may contribute to the difference. Nonetheless, the current results provide a different source of information that captures the expulsion and suspension prevalence estimates based on parent-reported data.

Out-of-school suspension is one of the most severe consequences that a school can impose for a child's challenging behavior (American Academy of Pediatrics Committee on School Health, 2013). This study provides one of the first parent-reported estimates of out-of-school suspension in the United States: an alarming 2% of preschool children were suspended at least once. This estimate may be an underestimate compared to counting the absolute frequency, as some students may be suspended more than once in a school year. While the National Association of Education of Young Children (National Association for the Education of Young Children, 2016) and other national agencies argue that suspending or expelling preschoolers should not be considered an intervention nor recommended practice, preschool expulsion and suspensions are happening regularly. Evidence from other literature (e.g., American Psychological Association Zero Tolerance Task Force, 2008; Petras et al., 2011) suggests that children with early suspension and expulsion are more likely to encounter academic failure such as grade retention, dropout of high school, and involve in juvenile justice systems. Given the prevalence of expulsion and suspension in preschool, early childhood programs should work to identify and utilize more inclusive, effective, and appropriate practices for young children who are in preschool and have experienced ACEs (American Academy of Pediatrics Committee on School Health, 2013).

Consistent with previous literature, the suspension and expulsion rates differ based on children's demographic characteristics. Although not statistically significant, black children are twice as likely to be suspended or expelled compared to their peers, which aligns with previous research related to teachers' implicit bias towards African American boys (Gilliam & Reyes, 2018b; Gilliam, Accavitti et al., 2016). Surprisingly, our study first reveals that preschoolers with Hispanic status are more likely to be suspended and expelled. Previous literature only documented Hispanic students and their high dropout rate in middle or high school settings (e.g., Carpenter & Ramirez, 2007; Driscoll, 1999). As the preschool Hispanic population continues to grow, it is very concerning to identify this new risk factor and further research is needed to explore the mechanism behind this phenomenon.

Comparing the weighted sequential logistic models, however, the accumulated ACEs and most of the ACEs indicators are stronger predictors of preschool expulsion and suspension. The odds ratio of being suspended or expelled increased by 80% for every unit of ACEs increment and the log odds for each of the specific ACEs is considerably larger compared to the controlling variables. Align with our hypothesis, children exposed to cumulative ACEs experiences are experiencing constant toxic stress (Center on the Developing Child, 2019) and toxic stress can negatively affect children's behavior as schools (Ridout et al., 2018). This study reveals the strong likelihood of a child with ACEs and preschool suspension and expulsion. This is a significant contribution to the current literature in that the findings extend the risk factor repertoire beyond child demographic characteristics. Consist with our hypothesis, domestic violence, substance abuse, and other ACEs are strong predictors of preschool suspension and expulsion. This finding further supports American Academy of Pediatrics Committee on School Health (2013)'s statement that out-of-school suspension and expulsion are enormously costly and largely ineffective deterrents to behavior problems in school. In some cases, early childhood teachers may feel

pressure to suspend or exclude a child due to the child's challenging behavior. In these instances, challenging behavior may be viewed (Gilliam & Reyes, 2018a) and some teachers' may feel incapable of providing adequate behavior supports (Miller, Smith-Bonahue, & Kemple, 2017). However, challenging behavior in school settings can escalate if a teacher does not adequately support a child with challenging behavior. The practice of suspending and expelling children from preschool not only disrupts the child's learning process, but also prevent the family from accessing meaningful supports in early childhood settings (National Association for the Education of Young Children, 2016).

The findings should be interpreted in the context of several limitations. First, the 2016 NSCH is a cross-sectional database, which does not allow for causal estimates. Nonetheless, this database provides a nationally representative sample of all non-institutionalized preschool children, which is valuable in answering our research questions. A second limitation is the lack of detail description about the preschool program types (e.g. full day, half day, etc.). Furthermore, the estimates would be more precise had the survey asked participants to report the actual frequency of preschool suspension and expulsion in a specific school year. Also the ACEs measure is subject to further validation. We demonstrate the cumulative impact of ACEs by adding the number based on the common practice in the literature (e.g., Turney & Wildeman, 2017). However, the assumption is that the ACEs are equal and does not take into account chronicity or number of times an event occurred. Perhaps there is a very high level of co-morbid of ACEs and we are unable to address the nonlinear effect of these factors. Future studies should validate the ACE measure and collect multiple diameters to better capture the nature of ACEs and its relation with preschool suspension and expulsion.

## 5. Implication

Children being suspended or expelled may be denied access to meaningful early intervention for their disabilities or mental health issues (American Academy of Pediatrics Committee on School Health, 2013). High quality preschool programs should consider how to support family wellness (U.S. Department of Health & Human Services & U.S Department of Education, 2014). There is a spectrum of potential responses to preschool children with ACEs and their possible chain of developmental harm that can help them recover from trauma caused by toxic stress (Center on the Developing Child, 2019). It is important that preschool programs understand the impact of ACEs on child development and plan for screening to provide adequate support services.

Before suspending or expelling young children with ACEs, it is important to partner with special educators and explore in-school supports (Gilliam & Shahar, 2006). For example, preschool programs may provide mental health consultation for teachers working with young children with ACEs (Perry, Dunne, McFadden, & Campbell, 2008). Teachers and parents should be focused on decreasing ACEs and increasing the child's/families' protective factors. This work can be focus on providing effective social-emotional curriculum in preschool that help promote both the child and family's resilience (Gilliam, 2010). In addition to family well-being, strong relationships between families and early childhood educators can contribute to positive family engagement in their children's learning at home and in the community (Mosle & Patel, 2012; Porter et al., 2012). A supporting and responsive relationship with a parent or caregiver can help to buffer a child from the effects of stress, and helping preschoolers *and* adults build their core life skills—such as planning, focus, and self-control—can strengthen the building blocks of resilience (Center on the Developing Child, 2019).

The ideal approach of weakening the association between ACEs and negative preschool discipline is to reduce the sources of stress in families' lives, whether basic needs like food, housing, and diapers, or more entrenched sources of stress, like substance abuse, mental illness, violent relationships, community crime, discrimination, or poverty. Fostering cross-system collaboration (Corr & Santos, 2017) for young children with ACEs may provide timely services needed that prevent the negative impact of toxic stress (Zeng & Hu, 2018).

## 6. Conclusions

This study provides new national insights regarding preschool suspension and expulsion from the parental perspective. The alarming suspension and expulsion rates call for outreach efforts to promote preventive strategies and minimize the use of these ineffective approaches in preschool settings. The recognition of ACEs as new risk factors has important policy implications. Strong collaborations with special educators, social workers, and mental health professionals can. Finally, early childhood educators could benefit from professional development opportunities that focus more holistically on promoting social emotional development for children who have experienced ACEs.

### Author note

The authors declare that they have no conflicts of interest. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

The data were accessed through Child and Adolescent Health Measurement Initiative, Data Resource Center for Child and Adolescent Health. (2016). National Survey of Children's Health (csv file) CAHMI DRC Data Set. Census Bureau.

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