The Relationship Between Early Life Adversity and Academic Competence in Early Childhood

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ABSTRACT. It is well-documented that early life adversity negatively affects children academically and that these impacts magnify as the number of negative life events (NLEs) they experience increases. However, it is unclear whether the types of NLEs children are exposed to differentially relate to their levels of academic competence, a component of educational functioning. The present study addressed this question by assessing the relationships between different types of early life adversity and academic competence in 4- to 6-year-olds (N = 111) using secondary data analyses of parent reports in which respondents indicated children's levels of academic competence and exposure to NLEs. The results showed that family turmoil (b = −2.31, 95% CI [−4.05, −0.57], p = .01, $f^2 = .07$), poverty (b = −2.92, 95% CI [−5.14, −1.73], p < .001, $f^2 = .16$), and violence (b = −3.43, 95% CI [−5.14, −1.73], p < .001, $f^2 = .15$) negatively predicted academic competence, whereas family separation and death/illness did not relate to academic competence. Additionally, poverty negatively predicted academic competence above and beyond family turmoil and violence (b = −2.36, 95% CI [−0.49, 0.72], p = .03, $f^2 = .04$). These findings demonstrate that some, but not all, types of NLEs negatively predict preschoolers' academic competence, illustrating the differential relationship between different types of early life adversity and academic performance. Moreover, these findings reveal the deleterious impacts of certain types of NLEs on children's academics prior to beginning formal education, suggesting the importance of early intervention targeting family turmoil, poverty, and violence from a young age.

Keywords: early adversity, academic competence, childhood, school, preschool

Academic competence refers to the communicative, social, cognitive, and content-related skills, behaviors, and attitudes that empower children to be adept learners in the school classroom (DiPerna & Elliott, 1999). A student’s level of academic competence is closely related to their propensity for academic achievement, academic aspirations, and overall quality of school functioning (Widlund et al., 2018). Research indicated that middle- and high-school students with poor academic outcomes (i.e., poor reading and mathematics ability, homework completion, and grades) are more likely to be convicted of a crime, become pregnant during adolescence, and abuse alcohol or drugs (Kasen et al., 1998). Low-achieving students are also at a heightened risk to drop out of school, resulting in an increased probability of suffering from chronic disease, unemployment, and poverty in adulthood (Kasen et al., 1998; Vaughn et al., 2014). Thus, academic competence is an important area for researchers to study, as it is linked with a variety of educational, psychological, economic, and health outcomes.

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skills can be influenced by a variety of internal and external factors. Individual factors including aggression, delinquency, and substance abuse put adolescents and teenagers at risk for low academic achievement (Magdol, 1992). Moreover, a slew of family (e.g., low parental aspirations), peer (e.g., lack of friends), and school (e.g., ineffective teachers) factors affect students’ propensity for academic success (Magdol, 1992). Overall, it is clear that both individual risk factors and early adversity in one’s family, community, or school are closely related to academic competence and overall school functioning. However, the topic of unique relationships between particular adverse experiences and school competence in early childhood has received less study, as the majority of work in this area has focused on adolescents. Developing skills that support academic competence in early childhood may be of particular importance, as the preschool years set the foundation for children’s educational trajectory and are considered to be a critical period that influence both academic outcomes and school adjustment later in development (Dickinson et al., 2006; Oades-Sese et al., 2011). As prior research has indicated that academic skills prior to beginning Kindergarten predict school success later in life, it is essential to understand factors that impact children’s educational functioning during early childhood (Duncan et al., 2007).

The role of specific adverse experiences on children’s academic competence is one understudied area that could provide insight into what unique obstacles preschoolers face that impede their educational trajectory. By understanding what factors negatively contribute to children’s propensity for academic success, researchers can develop trauma-informed early intervention approaches that ameliorate potential damages of such factors and empower children to become skilled learners. It has been widely documented that early intervention is more effective than late intervention due to a variety of factors, including but not limited to young children’s brain plasticity and high levels of parental involvement at this stage of development, further emphasizing the necessity of studying young children specifically (Campbell & Ramey, 1994; Center on the Developing Child, 2007). Thus, the goal of the present study was to examine the relationship between specific types of early adversity and academic competence in 4- to 6-year-old children.

Adverse Childhood Experiences
Early life adversity has been measured by researchers in a number of ways. One commonly used measure is the Adverse Childhood Experiences (ACEs) Questionnaire, which assesses a variety of potentially distressing events in childhood (e.g., parental incarceration, domestic violence). In their foundational study, Felitti et al. (1998) found that approximately 52% of adult respondents reported being exposed to one or more adverse experiences and that 6.2% were exposed to four or more adverse experiences. Exposure was lower among respondents who were of older age, White or Asian, and who earned a college degree. Results also indicated a clear relationship between adverse experiences and health risk factors; those with an exposure to four or more adverse experiences were more likely to abuse drugs, contract a sexually transmitted infection, suffer from chronic disease (e.g., bronchitis), and have poorer self-rated health during adulthood than those with no exposure (Felitti et al., 1998).

In addition to negatively affecting physical health, adverse experiences can also predispose individuals to a wide variety of poor psychological outcomes. Specifically, prior research found that increased exposure to adverse experiences was positively correlated with depression and suicidality; adverse experiences in any subcategory increased a child’s risk for a suicide attempt by 200 to 500% (Anda et al., 2002; Dube et al., 2001). Moreover, elevated exposure to adverse experiences was linked with heightened autonomic physiological stress responses (i.e., hyperactivity in the hypothalamic-pituitary-adrenal axis) and an increased risk of being diagnosed with an anxiety or personality disorder (Chapman et al., 2007).

Adverse experiences have also been found to negatively impact children’s academic success. One study found that, as the number of adverse experiences 6 to 17-year-olds were exposed to increased, the likelihood of repeating a grade, not caring about school, and poor homework completion also increased (Robles et al., 2019). Moreover, early adversity has been linked with poor academic functioning in early childhood. Elementary school students with increased exposure to adverse experiences were more likely to have school attendance problems, teacher-reported academic failure, and more internalizing and externalizing behavioral problems than their peers who did not experience early adversity (Blodgett & Lanigan, 2018). Research with kindergarteners indicated that increased exposure to adverse experiences was associated with below-average academic skills in a variety of subjects (e.g., reading, social studies, mathematics; Jimenez et al., 2016). Moreover, there is some evidence that adverse experiences positively correlate with aggressive behavior and deficits in attention (Jimenez et al., 2016). However, it is important to note that Jimenez et al. (2016) oversampled for children born to unmarried parents and who were Black or Latinx; thus, the sample was not generalizable to the population of children at large. Nevertheless, research has indicated a clear association between adverse experiences and poor academic functioning in 5-year-olds.

Most prior literature in the field has emphasized the importance of studying children’s cumulative exposure
to adverse experiences, as these events often co-occur and jointly contribute to poor academic outcomes. By calculating a child's summed risk score (i.e., total number of adverse events they have experienced), psychologists can try to identify children with the greatest need for academic intervention (i.e., those who experienced the highest count of trauma; Evans et al., 2013). Researchers also highlight a relationship between adverse experiences and children's self-regulation, an important moderator between cumulative exposure to early life adversity and poor academic functioning (Loomis, 2021). Loomis (2021) found that cumulative exposure to adverse experiences contributed to conflicted student–teacher relationships, deficits in emotional self-regulation, classroom conflict, and disciplinary actions (e.g., suspension). Although prior work clearly suggests negative academic outcomes for children as the number of adverse experiences they are exposed to increases, whether there are differences in the relationships between particular types of early adversity and academic competence in early childhood has yet to be thoroughly explored.

Although most prior researchers have utilized a cumulative approach to studying the risk conferred by adverse experiences, it is also essential to study the intersection of early life adversity and academic competence within a categorical framework. Assessing the type, as opposed to strictly the count, of adverse experiences a child has been exposed to accounts for the fact that a child's summed ACE Questionnaire score does not reflect the diversity of trauma they have experienced. For example, a child who has experienced physical and sexual abuse likely has unique academic and psychological deficits from a child who has experienced parental incarceration and mental illness, although both have the same cumulative exposure (i.e., 2). Identifying the specific adverse experiences that have the most detrimental impact on students' academic functioning will allow for psychologists to identify effective early intervention approaches that target the consequences of specific traumatic events.

**Types of Adverse Childhood Experiences**

Some research on early adversity has focused on categorizing different types of adverse experiences into smaller groups. One measure of early life adversity, the ACEs Questionnaire, organizes types of adverse experiences into interrelated categories, including: physical, emotional, and sexual abuse; household mental illness; household substance use; household domestic violence; incarcerated household member; and parental divorce/separation (Giano et al., 2020). However, it is important to note that the specific categories that experiences are organized into varies from study to study, as many researchers slightly modify conceptual categories and individual ACE Questionnaire items to best fit their specific research question. Furthermore, although all categories of early life adversity reflect potentially traumatizing events, there is evidence that different types of adverse experiences have different impacts on children's and adults' well-being. For example, Chang et al. (2019) found that different types of adverse experiences had different impacts on mental health outcomes and risk factors in adulthood. Children who reported emotional abuse were 198% more likely to be diagnosed with depression and 192% more likely to be diagnosed with post-traumatic stress disorder in adulthood than those who did not experience such abuse. Based on these findings, subsequent researchers have also assessed whether there are differential relationships between types of adverse experiences and academic success and/or school functioning in children.

Crouch et al. (2019) assessed how different types and quantities of adverse childhood experiences impede academic success in terms of school engagement, attendance, and achievement. These researchers assessed a variety of adverse experiences, including children's experience of parental divorce/separation; parent death; exposure to neighborhood violence; exposure to household mental illness, interpersonal violence, incarceration, or substance abuse; racism; and poverty (Crouch et al., 2019). They then grouped these individual adverse experiences into larger categories, including exposure to violence and living in a disrupted household. Parents also responded to questions indicating their child's school engagement, whether they repeated a grade, and school absenteeism. The researchers found that exposure to violence (in both the community and the home) was highest among children who displayed a lack of school engagement. Moreover, children who lived in a disrupted household (i.e., experienced household incarceration and mental illness) showed higher levels of all challenges to school success. Overall, the researchers found that the relationship between adverse childhood experiences and school success was dependent on the subgroup(s) of adverse childhood experiences that the child was exposed to. Specifically, living in a disrupted household, exposure to violence, and poverty all showed statistically significant relationships with multiple school success factors (Crouch et al., 2019).

However, it is essential to acknowledge the limitations of Crouch et al.'s (2019) work when assessing their findings. The researchers did not group their results by age to examine if adverse experiences impact children differently across developmental stages. Moreover, Crouch et al. (2019) did not include a detailed
distribution of children's ages in their sample beyond noting that 58.4% of respondents were between 6 and 12 and 41.6% of respondents were between 13 and 17; it is plausible that only a small percentage of participants were 6 years old. Thus, the researchers' findings are not necessarily generalizable to 4- to 6-year-olds. Unlike the current study's sample, Crouch et al. (2019) did not have access to a participant pool experiencing high ACE Questionnaire count; only 7.8% of respondents had experienced ≥ 4 adverse experiences. Although the findings of this study indicated that types of adverse experiences have different relationships with challenges to academic success, it is important to identify whether these relationships are unique in early childhood. It is possible that there are adverse experiences that are particularly relevant in early childhood that are not as impactful during adolescence or vice versa, highlighting the importance of assessing different developmental stages in this line of work. The present study contributed to the literature by specifically assessing young children, to gain clarity as to what specific adverse experiences have a strong relationship with academic competence and negative implications for school success in this pivotal stage of a child's development.

Although there is robust research indicating the negative relationship between exposure to adverse childhood experiences and academic competence, there is a lack of prior literature utilizing the Negative Life Events Checklist (NLE-C), a very similar measure of early life adversity. Kilmer et al. (1998) constructed this 30-item measure, which includes exposure to specific NLEs (e.g., parental death) and chronic, long-term experiences (e.g., parental alcoholism). Like the ACEs Questionnaire and many other measures of early life adversity, the NLE-C groups together individual items to create conceptual categories of NLEs (i.e., family turmoil, poverty, violence, family separation, death/illness; Kilmer et al., 1998). These subcategories create meaningful distinctions between events that have the potential to differentially impact children's academic competence. By categorizing these adverse experiences into more homogeneous categories, researchers can identify whether particular sources of early life adversity have stronger relationships with poor academic outcomes and suggest targeted intervention addressing these categories.

It is plausible that ACE Questionnaire categories differentially impact preschoolers’ propensity for academic success, just as they do for 6- to 17-year-old students. However, it is also possible that particular categories that are predictive of poor academic functioning in adolescence are not as salient during early childhood or vice versa. The present study aimed to bring clarity to this gap in the literature by specifically assessing how the aforementioned five negative-life-event (NLE) categories differentially relate to 4- to 6-year-olds' academic competence. Overall, based on previous literature, we hypothesized that family turmoil (e.g., familial incarceration, mental illness, substance abuse), poverty (e.g., significant financial problems), and violence (e.g., unsafe neighborhood, witnessing physical altercations) would negatively predict children's academic competence. It is also possible that familial separation (e.g., living with a friend, being known to Child Protective Services) and death/illness (e.g., child bereavement) negatively predict academic competence; however, we hypothesized that familial separation and death/illness would not show a statistically significant relationship. The present study is unique in that, to our knowledge, it is the first to assess the relationship between different NLEs and academic competence in 4- to 6-year-olds.

**Types of Early Adversity That May Relate to Academic Competence**

**Family Turmoil**

Family turmoil includes a variety of distressing events relating to a child's home environment, including familial incarceration, arguments, mental illness, substance abuse, unemployment, and instability in household occupants. Prior studies indicated that family turmoil was associated with deficits in self-regulation, learned helplessness, heightened physiological stress responses, and sleeping problems in early childhood (Evans, 2003; Evans et al., 2005). Brown and Low (2008) found that sleeping problems partially mediated the relationship between chaotic living conditions and helpless responses to academic challenges in preschoolers experiencing poverty. These findings thus suggest that chaotic living conditions (e.g., residential crowding, familial instability) negatively affect children's quality of sleep, which is essential for optimal academic functioning and alertness throughout the school day. Thus, familial turmoil may be predictive of low levels of academic competence due to its relationship with sleep problems.

**Poverty**

There is overwhelming evidence indicating that children living in poverty—which can include having serious financial problems, insufficient clothing to wear, and lack of access to food—have lower levels of academic competence as compared to their peers not living in poverty (Cunha et al., 2006). A variety of reasons explain why poverty may negatively relate to children's academic functioning; one possibility is that child poverty is associated with differences in structural brain development (Hair et al., 2015). Hair et al. (2015)
longitudinally assessed this phenomenon via magnetic resonance imaging of children at multiple timepoints across development (i.e., 4–22 years of age). Results demonstrated disrupted gray matter development in children living in poverty; participants below the federal poverty line had regional gray matter (GM) volumes 7 to 10 percentage points below what is considered typical for their age and gender (Hair et al., 2015). Children's structural brain differences occurred in the hippocampus, temporal lobe, and frontal lobes; these brain regions are particularly relevant for cognitive functions necessary for academic success (e.g., long-term memory). Thus, it is plausible that young children living in poverty may show cognitive deficits that contribute to poor school functioning. It is also possible that having a lack of access to nutritious foods and quality healthcare as a result of low socioeconomic status keeps children from optimally functioning from a physical standpoint, which may also impede their academic success.

Violence
Violence refers to exposure to damaging behavior occurring outside of one's home, including seeing someone get injured, being upset by an unsafe neighborhood, witnessing a family member getting robbed, or being exposed to frequent family arguments. The impacts of exposure to community violence have been found to be particularly salient and damaging to optimal academic functioning in elementary school students. Hurt et al. (2001) addressed this phenomenon in a sample of inner-city African American youth (i.e., 7-year-olds). The researchers conducted participant interviews to measure children's exposure to violence (e.g., witnessing gunshots) and subsequent symptoms of distress (e.g., afraid something bad will happen if they go out to play). The results indicated that exposure to community violence was associated with increased rates of anxiety and depression, low self-esteem, low GPA, and increased absenteeism (Hurt et al., 2001). Based on these findings, it is plausible that young children with higher exposure to neighborhood violence will have lower levels of academic competence.

Family Separation
Family separation refers to a child living with a relative or friend, spending time in a foster home, and being known to Child Protective Services. Although long-term foster care may have negative implications for school functioning, the nature in which the present sample was collected likely limits the strength of the relationship between family separation and academic competence. Our data consists of questionnaires completed by a child's primary caregiver, who was their biological mother in the large majority of cases. Thus, it is highly unlikely that many children in our sample spent a long period of time in foster care or do not primarily live with their biological parent(s). Although it is possible that children in our sample might have lived with a relative or friend for a short period of time, this is not necessarily deleterious to a child's academic functioning. Many reasons can explain why parents may choose to have their child temporarily live with a relative (e.g., out of town, demanding work hours) that do not necessarily point to instability or poor parenting. Thus, we hypothesized that family separation would not show a statistically significant association with academic competence.

Death/Illness
The fifth early life adversity subcategory is death/illness, which refers to a close relative suffering from a serious injury and/or illness, having a physical disability, or dying. Although child bereavement has negative implications for academic achievement, this relationship has been found to be largely mediated by parental adaptability and familial climate (Brent et al., 2012). Thus, although experiencing the death of a close family member has the potential to lead to negative educational outcomes, it is possible that children who experienced grief received adequate counseling and were met with strong parenting skills following their family member's passing, compensating for many ill effects. Moreover, having a relative suffer from a serious injury does not necessarily equate to a traumatizing experience that would negatively impact a child's school functioning. The NLE-C items in this category are somewhat vague, and respondents could have differing interpretations of what constitutes a “serious injury or illness.” For example, a parent may consider a close relative battling cancer to be a serious illness; experiencing this chronic form of family illness likely in fact impacts a child's academic functioning. This contrasts with a child's relative breaking a bone, which many parents may also believe to constitute a serious injury. However, having a relative experience this type of injury likely has an inconsequential impact on a child's well-being or academic competence. Thus, we hypothesized that death/illness will not show a statistically significant association with academic competence.

Aims of the Present Study
The goal of the present study was to assess the relationship between different types of potentially distressing events experienced in early childhood (i.e., family turmoil, poverty, violence, family separation, and death/illness) and academic competence in preschool-aged children. Our overall aim was to increase understanding
of the intersection of early life adversity and academic competence using a categorical approach that assessed for the type, as opposed to strictly the count, of adverse childhood experiences a child is exposed to. Using this qualitative framework allowed us to identify the particular NLEs that are most impairing to preschoolers’ academic competence.

Methods

Participants

The present study utilized a dataset from previous work assessing children’s development of optimism conducted by the Early Emotional Development Program at Washington University School of Medicine in St. Louis. The study consisted of 289 children between the ages of 3 and 8 from the greater St. Louis area. Children were recruited from 22 local preschools, childcare centers, and elementary schools. Of the 289 total child participants of the Optimism Study, 111 were included in the present study. Participants were excluded if (a) they were younger than 4 years or older than 6 years, (b) their parent reported that they had major neurological delays, (c) their parent did not complete the NLE-C or (d) their parent did not complete the Academic Competence subscale of the MacArthur Health and Behavior Questionnaire. The final sample was diverse in terms of race, socioeconomic status, and gender (see Table 1). As part of their participation in the Optimism Study, children completed a variety of behavioral tasks that measured their probabilistic reasoning and levels of optimism. The present study, however, drew only on the information children’s parents provided in the surveys they completed as part of their parent report. This study was conducted with prior approval from the Washington University School of Medicine in St. Louis institutional review board per #201710071.

Measures

Academic Competence

To measure children’s academic competence, parents completed the MacArthur Health and Behavior Questionnaire (HBQ 1.0), a widely used survey that contains items assessing children’s physical health, psychological health, social functioning, and school functioning. The present study solely drew on items from the Academic Competence subscale within the school functioning portion of the survey. In this section, parents were asked to respond to questions indicating their child’s academic performance (i.e., “how good is your child in math?”), talent they have relative to other students (i.e., “compared to other children, how much innate ability or talent does your child have in math?”), and their performance relative to other children (i.e., “in comparison to other children, how would you evaluate your child’s performance in math?”). All of the aforementioned survey items were duplicated and slightly modified to assess children’s reading skills, as well. Parents responded on a 7-point Likert scale, and an overall Academic Competence score was computed by calculating a mean of the six items.

Early Life Adversity

To measure children’s exposure to adverse experiences, parents completed the NLE-C, a 35-item questionnaire assessing a variety of potentially distressing events experienced during early childhood. This measure was quite similar to Kilmer et al.’s (1998) original NLE checklist, with an additional five items deemed appropriate by the researchers after consulting other life event measures to assess additional adverse childhood experiences that were not fully captured in the NLE-C. These novel items include: “another parent lost his/her job or has

| TABLE 1  
<table>
<thead>
<tr>
<th>Participant Demographics</th>
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<tbody>
<tr>
<td>Baseline Characteristic</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>4-year-olds</td>
</tr>
<tr>
<td>5-year-olds</td>
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<tr>
<td>6-year-olds</td>
</tr>
<tr>
<td>Race</td>
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<tr>
<td>Asian &amp; Pacific Islander</td>
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<tr>
<td>Black &amp; African American</td>
</tr>
<tr>
<td>Hispanic</td>
</tr>
<tr>
<td>Native American</td>
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<tr>
<td>White (Non-Hispanic)</td>
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<tr>
<td>Multiracial</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Total Household Income</td>
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<tr>
<td>Less than $10,000</td>
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<tr>
<td>$10,000–$14,999</td>
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<td>$15,000–$19,999</td>
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<tr>
<td>$50,000–$74,999</td>
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<tr>
<td>$75,000–$149,999</td>
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<tr>
<td>$150,000 or more</td>
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Note: *One multiracial participant indicated Native American as one of their racial identities.
been unemployed,” “my child had a serious illness or injury (in hospital),” “my child was very sick or injured (not in hospital),” “my child has experienced a parent marrying, getting engaged, or entering into a serious relationship with someone new,” and “my child has been negatively impacted by teasing or bullying.” These additional items were used when assessing overall NLEs but not in any of the subgroups. See Kilmer et al. (1998) for the 30 primary items included in the measure. The parent was asked to indicate which of these 35 events their child has experienced (α = .82). Individual survey items were grouped to reflect five NLE subcategories, and Cronbach’s alpha values were calculated for each (e.g., “a close family member was arrested or in jail”; α = .74), poverty (e.g., “our family had serious financial problems”; α = .71), violence (e.g., “my child saw someone get badly hurt”; α = .48), family separation (e.g., “my child lived with a relative or friend”; α = .69), and death/illness (e.g., “my child’s parent, brother, or sister died”; α = .62).

### Results

#### Descriptive Results

Of the 111 parents who filled out survey data, 109 included information about their children’s academic competence. There was a wide range of competence reported by parents; the mean score across all participants was 4.02 with a standard deviation of 1.58. Moreover, our sample showed a range of 6, indicating that participants scored on both the extreme low (i.e., 1) and extreme high (i.e., 7) ends of the Likert scale. Academic Competence showed a weak positive relationship with age, r(107) = .22, p = .02. See Table 2 for more comprehensive descriptive results concerning Academic Competence scores broken down by age.

Of the 111 parents who filled out survey data, 85 (76.58%) reported their child experienced ≥ 1 NLE(s), 69 (62.16%) reported their child experienced ≥ 2 NLEs, and 53 (47.75%) reported their child experienced ≥ 3 NLEs. The mean summed NLE score among all participants was 3.36, indicating that the children in our sample were exposed to a substantial number of potentially traumatic experiences. Although the types of NLEs children experienced varied, all five NLE categories were experienced by a portion of participants. The most prevalent types of NLE exposure were family turmoil (59.46%) and death/illness (49.55%). Fewer participants denoted experiencing events related to poverty (27.03%), family separation (9.91%), and violence (21.62%). See Table 3 for more detailed descriptive results concerning the prevalence of each NLE category.

Bivariate correlations were conducted to provide additional information regarding the relationships between different NLE groupings. Family turmoil and poverty showed a strong positive relationship, r(105) = .68, p < .001, along with violence and poverty, r(108) = .61, p < .001. However, not all NLE categories were highly correlated; death/illness and poverty showed a weak positive relationship, r(108) = .28, p = .003, along with death/illness and family turmoil, r(105) = .30, p = .002. Thus, it was meaningful to draw comparisons between these different NLE groupings in the present study, as they showed clear distinctions from one another. See Table 3 for a comprehensive list of correlations between the different NLE categories.

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>1. Family Turmoil</td>
<td>66</td>
<td>1.49</td>
<td>1.80</td>
<td>.68</td>
<td>.36</td>
<td>.30</td>
<td>.54</td>
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<tr>
<td>2. Poverty</td>
<td>30</td>
<td>0.51</td>
<td>1.00</td>
<td>.68</td>
<td>.37</td>
<td>.28</td>
<td>.61</td>
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<tr>
<td>3. Family Separation</td>
<td>11</td>
<td>0.14</td>
<td>0.54</td>
<td>.36</td>
<td>.37</td>
<td>.41</td>
<td>.39</td>
<td></td>
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<tr>
<td>4. Death/Illness</td>
<td>55</td>
<td>0.91</td>
<td>1.17</td>
<td>.30</td>
<td>.28</td>
<td>.41</td>
<td>.33</td>
<td></td>
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<tr>
<td>5. Violence</td>
<td>24</td>
<td>0.31</td>
<td>0.66</td>
<td>.54</td>
<td>.61</td>
<td>.39</td>
<td>.33</td>
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</table>

Note. This table demonstrates the number of participants who experienced ≥ 1 event in each NLE category, along with a comprehensive list of correlations between the different Negative Life Event (NLE) categories.

### Table 4

<table>
<thead>
<tr>
<th>Variable</th>
<th>B / Estimate</th>
<th>SE</th>
<th>p</th>
<th>95% CI</th>
<th>95% CI</th>
<th>95% CI</th>
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<tbody>
<tr>
<td>Age (Years)</td>
<td>0.08</td>
<td>0.19</td>
<td>.01</td>
<td>0.10 - 0.16</td>
<td>0.08 - 0.16</td>
<td>0.08 - 0.16</td>
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<tr>
<td>Gender</td>
<td>0.09</td>
<td>0.30</td>
<td>.76</td>
<td>0.01 - 0.51</td>
<td>0.01 - 0.51</td>
<td>0.01 - 0.51</td>
</tr>
<tr>
<td>Total NLE</td>
<td>-3.10</td>
<td>1.16</td>
<td>.01</td>
<td>-5.40 - -0.81</td>
<td>-5.40 - -0.81</td>
<td>-5.40 - -0.81</td>
</tr>
</tbody>
</table>

Note. This table demonstrates the number of participants who experienced ≥ 1 event in each NLE category, along with a comprehensive list of correlations between the different Negative Life Event (NLE) categories.
Relationships Between Academic Competence and NLEs

A linear regression was conducted to identify the overall relationship between participants’ total NLE score and academic competence when controlling for age and gender (see Table 4). Effect sizes were calculated using $f^2$, where .02 indicates a small effect, .15 indicates a medium effect, and .35 indicates a large effect. Children’s summed NLE score was significantly associated with their academic competence ($B = -3.10, p = .01, f^2 = .07$). Additionally, children’s age was significantly associated with their academic competence ($B = 0.48, p = .01, f^2 = .06$). These results indicate that (a) a higher summed NLE score was associated with lower academic competence, (b) older age was associated with higher academic competence, and (c) gender did not significantly relate to academic competence.

A series of linear regressions were conducted to identify the relationships between each NLE category and academic competence (see Table 5). The dependent variable was participants’ Academic Competence score (i.e., mean of 6 items in the Academic Competence subscale of the MacArthur Health and Behavior Questionnaire), the independent variable was NLE category type, and the covariates were age and gender. As predicted, family turmoil ($B = -2.31, p = .01, f^2 = .07$), poverty ($B = -2.92, p < .001, f^2 = .16$), and violence ($B = -3.43, p < .001, f^2 = .15$) negatively predicted academic competence. Also as predicted, family separation ($B = -0.82, p = .47$) and death/illness ($B = 0.10, p = .88$) did not significantly relate to academic competence. Age predicted academic competence regardless of NLE category and gender did not predict academic competence in any model. Importantly, above and beyond age, there was an effect of family turmoil, poverty, and violence on participants’ levels of academic competence.

To further probe the three variables that were found to be significant in the prior analyses, a linear regression was then conducted to explore the relative strength between family turmoil, poverty, and violence in predicting academic competence (see Table 6). When put in the same model, poverty ($B = -2.36, p = .03, f^2 = .04$) negatively predicted academic competence, whereas family turmoil ($B = 0.41, p = .73$) and violence ($B = -1.56, p = .19$) did not significantly relate to academic competence. In other words, poverty was found to negatively predict academic competence above and beyond family turmoil and violence.

### Discussion

The primary goal of the present study was to identify the relationship between different types of early life adversity (i.e., family turmoil, poverty, violence, family separation, and death/illness) and levels of academic competence in 4- to 6-year-old children. In line with the study’s hypothesis, findings revealed that events related to family turmoil (e.g., familial incarceration, mental illness, substance abuse), poverty (e.g., insufficient clothing/food, financial instability), and violence (e.g., unsafe neighborhood conditions, robberies) negatively

---

### TABLE 5

<table>
<thead>
<tr>
<th>Relationships Between NLE Categories and Academic Competence</th>
<th>B / Estimate</th>
<th>SE</th>
<th>$p$</th>
<th>95% CI</th>
<th>$f^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Years)</td>
<td>0.41</td>
<td>0.19</td>
<td>.03</td>
<td>0.03 - 0.78</td>
<td>.04</td>
</tr>
<tr>
<td>Gender</td>
<td>0.12</td>
<td>0.30</td>
<td>.70</td>
<td>-0.49 - 0.72</td>
<td>.02</td>
</tr>
<tr>
<td>Family Turmoil</td>
<td>-2.31</td>
<td>0.88</td>
<td>.01</td>
<td>-4.05 - 0.57</td>
<td>.07</td>
</tr>
<tr>
<td>Age (Years)</td>
<td>0.05</td>
<td>0.29</td>
<td>.87</td>
<td>-0.52 - 0.61</td>
<td>.06</td>
</tr>
<tr>
<td>Gender</td>
<td>0.05</td>
<td>0.29</td>
<td>.87</td>
<td>-0.52 - 0.61</td>
<td>.06</td>
</tr>
<tr>
<td>Poverty</td>
<td>-2.92</td>
<td>0.70</td>
<td>&lt;.001</td>
<td>-4.31 - 1.53</td>
<td>.16</td>
</tr>
<tr>
<td>Age (Years)</td>
<td>0.44</td>
<td>0.19</td>
<td>.03</td>
<td>0.05 - 0.82</td>
<td>.05</td>
</tr>
<tr>
<td>Gender</td>
<td>0.18</td>
<td>0.31</td>
<td>.57</td>
<td>-0.44 - 0.80</td>
<td>.08</td>
</tr>
<tr>
<td>Family Separation</td>
<td>-0.82</td>
<td>1.14</td>
<td>.47</td>
<td>-3.07 - 1.43</td>
<td>.14</td>
</tr>
</tbody>
</table>

### Note

NLE = negative life events.

---

### TABLE 6

<table>
<thead>
<tr>
<th>Strength of Relationships Between NLE Categories and Academic Competence</th>
<th>B / Estimate</th>
<th>SE</th>
<th>$p$</th>
<th>95% CI</th>
<th>$f^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Turmoil</td>
<td>0.41</td>
<td>1.16</td>
<td>.73</td>
<td>0.03 - 0.78</td>
<td>.04</td>
</tr>
<tr>
<td>Poverty</td>
<td>-2.36</td>
<td>1.06</td>
<td>.03</td>
<td>-0.49 - 0.72</td>
<td>.04</td>
</tr>
<tr>
<td>Violence</td>
<td>-1.56</td>
<td>1.18</td>
<td>.19</td>
<td>-4.05 - 0.57</td>
<td>.05</td>
</tr>
<tr>
<td>Age (Years)</td>
<td>0.48</td>
<td>0.18</td>
<td>.01</td>
<td>0.11 - 0.84</td>
<td>.06</td>
</tr>
<tr>
<td>Gender</td>
<td>0.14</td>
<td>0.29</td>
<td>.64</td>
<td>-0.44 - 0.72</td>
<td>.07</td>
</tr>
</tbody>
</table>

Note: This table displays the relative strength between family turmoil, poverty, and violence in predicting academic competence. NLE = negative life events.
predicted children's levels of academic competence as reported by their parent(s) or caregiver(s). Also in line with the present study’s hypothesis, events related to family separation (e.g., living with a friend/relative, spending time in foster care) and death/illness (e.g., death or injury of a close relative) did not show a statistically significant relationship with children's levels of academic competence. Overall, our results suggest that experiencing certain, but not all, types of NLEs negatively predict academic competence in young children.

The findings that various types of early life adversity differentially impact children’s academic competence align with Crouch et al. (2019), who found that adverse childhood experiences’ impact on school success depended on the type of event a child was exposed to. More specifically, living in a disrupted household (i.e., family turmoil), violence, and economic hardship all negatively predicted multiple school success factors (i.e., lack of school engagement, school absenteeism, repeated grade). Crouch et al.’s (2019) sample consisted of a large national dataset of 6- to 17-year-olds. The present study found significant relationships between academic competence and family turmoil, violence, and poverty, thereby extending previous results to 4- to 6-year-olds and further illustrating the deleterious effects of certain types of early life adversity (i.e., family turmoil, violence, and poverty) on young children’s academics. The present findings suggest that these types of adverse experiences have detrimental impacts on children’s academic competence prior to them even being fully immersed in formal education. Children experiencing events related to poverty, violence, and family turmoil are likely entering kindergarten at a clear disadvantage to their peers not experiencing these forms of early adversity.

The findings that family turmoil negatively predicted academic competence are also consistent with previous literature. Specifically, Brown and Low’s (2008) research identified a relationship between one form of family turmoil (i.e., chaotic living conditions) and helpless responses to academic challenge in a sample of low-income and primarily Black 3- to 5-year-olds enrolled in a Head Start preschool. The researchers measured chaotic living conditions via residential crowding, TV background noise, and changes in primary caregiver’s romantic partner(s). The present study utilized a wider measure of family instability than Brown and Low (2008), as our parent report included items measuring parental incarceration, unemployment, and psychological problems. Our results extend those of Brown and Low (2008) and indicate not only the negative impacts of changes in household occupants, but other types of household instability, as well. Further, our dataset included a more racially and socioeconomically heterogeneous sample, generalizing the populations to which previous findings can be considered relevant to.

Our results that neighborhood violence negatively predicted academic competence is in line with prior literature, namely Hurt et al.’s (2001) investigation of the impact of exposure to community violence on children's well-being. The researchers found that increased exposure to community violence (e.g., hearing gunshots, seeing a dead body outside) was linked to poor academic functioning as measured by chronic school absenteeism and low grade point average. The researchers’ sample included 7-year-old children of low socioeconomic status, some of whom had in utero cocaine exposure. The present study broadened the scope of Hurt et al. (2001) by including younger children (i.e., 4- to 6-year-olds) with diverse socioeconomic backgrounds. Moreover, our sample did not include a disproportionate number of children exposed to addictive stimulant drugs, a potential third variable in Hurt et al.’s (2001) study. Our findings that neighborhood violence negatively predicted academic competence further demonstrate the extent to which exposure to violent and potentially traumatizing events in one's community limits children's ability to succeed in school settings. One potential explanation is that these academic deficits are due to posttraumatic stress symptoms interfering with children’s ability to focus in class.

The findings that poverty was by far the strongest predictor of children’s academic competence are also consistent with previous studies. This prior related research focused specifically on neurodevelopmental implications of poverty on children’s structural brain development, particularly disrupted gray matter development that may lead to deficits in several cognitions essential for academic functioning (e.g., memory, higher order thinking; Hair et al., 2015). It is possible that abnormal gray matter development and impaired cognitive functioning mediates the relationship between poverty and low levels of academic competence, although this topic requires further research. Poor physical health may also mediate the relationship between poverty and academic functioning. Having inadequate access to pediatricians, psychologists, a nutritious diet, and other medical necessities leaves children vulnerable to suboptimal development and various life-threatening disorders going untreated. These maladaptive physical symptoms (e.g., malnutrition) and conditions (e.g., chronic disease) may contribute to suboptimal academic functioning. Although previous studies have clearly indicated negative physical and neurological implications of poverty, the present study...
was unique in that, to our knowledge, it was the first to identify poverty as a negative predictor of academic competence in 4- to 6-year-olds above and beyond other types of early life adversity. Based on robust findings indicating the neurological consequences of poverty in young children, the mechanisms by which poverty negatively predicts academic competence should be more thoroughly explored.

The findings that experiences of family separation did not significantly relate to children's academic competence are likely reflective of the limited nature in which our sample experienced events in this category. Although family separation (i.e., spending time in foster care, being known to Child Protective Services) has potentially deleterious consequences, the fact that our data relied on parent reports indicates that children in our sample likely only experienced family separation in nonthreatening contexts (e.g., briefly living with a relative) and lived in at least a semistable home environment. Out of the 11 participants who reported event(s) relating to family separation, 8 (72.73%) solely experienced their child living with a relative or friend—their family was not known to Child Protective Services, nor had the child spent time in foster care. It is probable that more chronic forms of family separation (e.g., foster care) in fact negatively predict academic competence, but the nature of our sample limited our ability to capture this relationship.

It is also unsurprising that death/illness did not significantly relate to academic competence given prior research emphasizing the important role of familial climate and parental functioning in insulating children from the negative effects of experiencing loss. Specifically, research conducted by Brent et al. (2012) indicated that the relationship between child bereavement and academic achievement was mediated by both parental adaptability and familial cohesion. Given these findings, we postulate that children in our sample who experienced familial death were met with strong parenting and opportunities for emotional bonding, although we do not have measures identifying these potential mediating variables. Moreover, items in this category could reflect an older adult family member dying, who might have not had an unexpected or highly emotional death with long-lasting consequences for the child. Furthermore, our findings that death/illness do not negatively predict academic competence may be due in part to the heterogeneity and/or vagueness of items in this category, particularly those relating to family injury. It is plausible that the NLE-C captured both acute (e.g., sprained ankle) and chronic (e.g., serious car accident) family injuries, which we believe likely differentially impact academic competence. As nearly half (49.55%) of the children in our sample experienced death/illness, it is likely that the vagueness of survey items led respondents to endorse normative experiences of family illness and injury. The present findings further illustrate that 4- to 6-year-olds' experiences of death/illness do not negatively predict academics; further research may explore whether the proximity of the deceased family member or seriousness of their injury moderates this relationship.

The fact that children's caregivers can shield them from being made aware of the realities of family members' illnesses/injuries contrasts with the little control adults often have in protecting children from events relating to poverty, violence, and family turmoil. This offers an additional explanation for what differentiates the types of early life adversity that negatively predict academic competence from those that do not. Because children often directly experience events relating to poverty (e.g., malnutrition), family turmoil (e.g., witnessing parent(s)’ substance abuse), and violence (e.g., witnessing a robbery), it is rarely possible for their caregivers to shield them from these events as they are able to for familial deaths or illnesses. Children's lack of protection from poverty, family turmoil, and violence may make these events particularly salient in their lives and potentially traumatizing; thus, it is logical they show a capacity to negatively impact children in the school classroom.

Limitations

The present study relied solely on parent reports to quantify students’ levels of academic competence via several items assessing perceived math and reading ability. Our data yielded a large range of reported academic competence, suggesting that parents likely communicated about their perceptions of their children's ability honestly. However, these survey items were subjective, and it is possible that this data was not indicative of children's true levels of academic competence. The HBQ 1.0 did not inquire about specific mathematics and reading abilities, but instead asked more subjective questions. Parents are often very involved in their children's academics during early childhood (e.g., helping them with reading). Consequently, parents’ perceptions of their children's levels of academic competence are likely highly related to their true abilities. Whereas there is evidence in support of the validity of parental reports of children's academic functioning and behaviors (Guo et al., 2021), parents may not have a holistic and accurate understanding of their children's academic abilities, especially if they are preoccupied with other life stressors (e.g., providing food for their children despite having insufficient financial resources) or personal struggles.
(e.g., severe mental illness). Parents’ perceptions of their children’s academic competence are dependent upon their levels of involvement in their children’s academics, which may be particularly low for those dealing with certain types of adverse experiences. Thus, future research might include additional direct measures of children’s academic competence, such as teacher reports along with standardized reading and mathematics test scores.

The present measure of early life adversity also solely relied on parent reports of the NLE-C. Although our results indicated a large range of sum NLE scores, it is possible that parents underreported particular items out of fear of social stigma or being deemed an unfit parent. Given the fact that our sample had a mean NLE score of 3.36, it is likely that we captured a fair endorsement of early life adversity and likely did not suffer from chronic underreporting. Additionally, our findings linking higher summed NLE scores with lower levels of academic competence could have reflected a subset of parents who answered the report honestly as opposed to those who indicated their child was not exposed to early adversity and had high levels of academic competence. Further studies should collect data about early life adversity in more comprehensive ways (e.g., child interview). However, due to the fact that our sample consisted of 4- to 6-year-olds, a parent report was the most feasible means of data collection.

Most families in the present study identified as either Black/African American (37%) or White (Non-Hispanic; 39%). Thus, our findings may not be generalizable to preschoolers from racial backgrounds that were not sufficiently represented in our sample (i.e., Asian & Pacific Islander, Native American, Hispanic). Our findings are also not necessarily generalizable to Black/African American and White preschoolers at large, as children in our sample were from urban regions of the St. Louis area. Additional research should be conducted that assesses the impacts of different types of early life adversity on children’s academics from a variety of geographic locations and includes rural and suburban communities. Moreover, our dataset also did not include questions about abuse experienced in the home. Although parents might have underreported their child’s experiences of abuse, this is an important measure of early life adversity that should be included in future studies. Finally, because survey respondents were children’s biological mothers in nearly all cases, we did not have a rich pool of data that accurately reflected children affected by family separation. It is likely that family separation (e.g., spending time in a foster home) negatively predicts academic competence; however, the nature of our dataset limited our ability to accurately measure this area of early life adversity.

**Future Directions**

Despite the aforementioned limitations, the current study adds valuable information to literature assessing the relationship between different types of early life adversity and academic competence in young children, a population yet to be thoroughly explored. Our work highlights the necessity of studying children prior to them being fully immersed in formal education. The present findings indicate that students as young as 4 years old who are experiencing certain types of adverse experiences (i.e., family turmoil, poverty, and violence) display inferior levels of academic competence as compared to their peers who have not experienced these forms of early life adversity. Within current educational systems, adults seldom focus on the importance of academic competence in such young children and instead place value on growing mathematics and reading skills in elementary school-aged students. However, the present study suggests that particular types of early life adversity may be predisposing young children to display inadequate academic competence later in their educational trajectory.

Based on the present study’s findings, future research should assess the efficacy of intervention strategies that target family turmoil (e.g., parent-child interaction therapy), poverty (e.g., free lunch program), and violence (e.g., trauma-focused cognitive behavioral therapy) in insulating children from the negative impacts of these sorts of potentially traumatic experiences. Perhaps offering evidence-based interventions would moderate the relationship between these NLEs and low levels of academic competence. Furthermore, future studies should identify mediating variables that further illuminate the relationship between academic competence and family turmoil, poverty, and violence. Identifying the mechanisms by which these types of early life adversity impact children’s academics (e.g., sleeping problems, insecure attachments to parents) would further inform potential intervention efforts in this line of work.

Lastly, additional research is needed to assess the relationship between chronic forms of family separation (e.g., spending time in foster care) and academic competence in 4- to 6-year-olds, as the nature of our sample limited our ability to accurately capture this relationship. Perhaps oversampling for children who have spent prolonged periods of time in foster care or whose families are known to Child Protective Services would allow researchers to more accurately measure family separation. In sum, the present study provides a novel contribution to the fields of school psychology and child development and highlights the grave impacts of early life adversity on children’s academics. Looking into the
future, it is essential to promote access to evidence-based educational and psychological interventions to all youth, who deserve resources that promote educational success.

References


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Positionality Statement: Alyssa identifies as a heterosexual, cisgender White woman. Alyssa is nondisabled and acknowledges that her perspective is influenced by her position within these dimensions of identity. Laura identifies as a cisgender White woman, is nondisabled, and acknowledges that her perspective is influenced by her position within these dimensions of identity.
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