

Early Stressful Life Events and Child Behavioral Outcomes in Fragile Families

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Introduction and Background

Prior research affirms that child development is influenced by one's environment, genetics, and experiences, including stressful life events (SLEs). The influence of stress on child development depends on a number of factors, including the timing of stress in a child's life, the frequency and duration of stress, and the context in which it occurs. The present study explores the prevalence of stressful events early in life (zero to three) and the extent to which these events are associated with child behavioral outcomes at age five. We pay particular attention to how SLEs vary by mother's relationship status at the child's birth and whether this relationship status moderates the effects of SLEs on child behavior.

Some experiences of stress can be a positive factor in a child's development, however, frequent and intense stress (often known as "toxic stress") can be associated with negative outcomes (National Scientific Council on the Developing Child, 2014; Shonkoff, Garner, et al., 2012). Prior research has shown that "toxic stress in early childhood is associated with persistent effects on the nervous system and stress hormone systems that can damage developing brain architecture and lead to lifelong problems in learning, behavior, and both physical and mental health" (National Scientific Council on the Developing Child, 2007a). These negative effects from early experiences of SLEs can create a "weak foundation" of brain development that can lead to negative outcomes later even if SLEs are no longer experienced at an older age (National Scientific Council on the Developing Child, 2007b).

In light of research on toxic stress, this study focuses on a number of SLEs identified in the literature as having a potentially negative effect or association on various child outcomes (e.g., cognitive, social, emotional, behavioral, etc.). In particular, we focus on poverty and economic hardship (Evans & English, 2002; Gershoff, Aber, Raver, & Lennon, 2007; Kiernan & Huerta, 2008), maternal depression (National Scientific Council on the Developing Child, 2004b; Petterson & Albers, 2001), family violence (National Scientific Council on the Developing Child, 2004a), family instability (Amato, 2005; Osborne & McLanahan, 2007; Waldfogel, Craigie, & Brooks-Gunn, 2010), and parent substance abuse (National Scientific Council on the Developing Child, 2004a). This list is not inclusive of all potential SLEs (e.g., it excludes parental incarceration; neighborhood and housing quality, safety, and instability; parent-child separations; etc.), but we believe it includes SLEs that have significant potential to have detrimental effects on child outcomes.

Another major factor in a child's early experiences and development is, of course, their parents and their parent-child relationship. The experience of stress may not be as problematic in the presence of secure parent-child relationships (National Scientific Council on the Developing Child, 2014). Particularly, we are interested in exploring whether parents are moderating or mediating forces in the relationship of SLEs and child outcomes. Prior research has explored the role of parents and has found evidence that positive parenting behaviors and good mother-child

relations are associated with positive child social-emotional outcomes (Gershoff et al., 2007; Kiernan & Huerta, 2008).

Data

Data for this study come from the Fragile Families and Child Wellbeing Study (Reichman, Teitler, & McLanahan, 2001). Data included are public use data from the baseline, one-year, three-year, and five-year mother surveys and in-home assessments. Baseline data included 4,898 families (including 3,700 unmarried families), although sample sizes are smaller in this analysis (\approx 2,100 families) due to attrition at some point in the sample (Center for Research on Child Wellbeing & Columbia Population Research Center, 2008a).

Measures and Methods

Our analysis will draw on the data available in the Fragile Families public use data to examine our research questions of interest. Child emotional and behavioral outcome variables for our analyses are measured by aggressive and anxious/depressed behavior scales created from available Fragile Families data based on the Child Behavior Checklist 4/18 (Center for Research on Child Wellbeing & Columbia Population Research Center, 2011).

At present, stressful events included in analysis are poverty, economic hardship, and family violence, but final analyses will also include maternal depression, mother's relationship instability, and parent substance abuse. Final decisions on how SLEs will be constructed will be based on a combination of theory and available data. SLEs are constructed over the 0-3 timeframe (baseline, one-year follow up, and three-year follow up). Future analyses will also include measures of parental involvement. All measures are mother-reported.

Initial modeling has tested a number of ways of examining poverty and economic hardship. Poverty is measured as at or below 100 percent of the federal poverty line. Economic hardship is based on a series of questions in each survey year based around experiences demonstrate hardship not necessarily captured as income poverty (e.g., inability to pay bills or rent/mortgage, mother or children reported as going hungry, etc.). Economic hardship data are available for all years except the baseline. Questions vary somewhat year to year and this will be dealt with in final analyses. Family violence is modeled using the mother's report of ever experiencing domestic violence as well as the number of years the mother reported experiencing domestic violence. Questions on domestic violence vary somewhat in how they were asked over several survey years, but questions generally cover hitting/slapping, hitting with a fist/object, or being seriously injured in a fight. This variable includes domestic violence in the relationship with the biological father and/or a current partner.

Models will control for several selection variables, including: parent relationship status, mother age, mother education level, and mother race/ethnicity at baseline, as well as prior behavioral outcomes. Prior behavioral outcomes (aggressive and anxious/depressed behavior scales) were created based on the Child Behavior Checklist 2/3 (Center for Research on Child Wellbeing & Columbia Population Research Center, 2008b). Future modeling will also account for grandmother's mental health history and grandparent relationship status when the child's biological mother was 15, if possible.

Several models will be conducted as a part of this analysis. Table 1 (below) describes variables included in each model to be fitted using the Fragile Families data. Of primary interest are models four and five for each behavioral outcome.

<i>Regression Models for Behavioral Outcome Variables</i>					
	Model 1	Model 2	Model 3	Model 4	Model 5
Family Status at Birth	X	X	X	X	X
Selection		X	X	X	X
SLEs			X	X	X
Prior Outcomes				X	X
Parental Involvement					X

Preliminary Results

Preliminary results on poverty and family violence show that children born to unmarried mothers (cohabiting, dating, and single) spend significantly more years between zero and three in poverty, experience higher levels of economic hardship, and are exposed to more years of family violence than children with mothers who were married at birth ($p \leq .01$). Children born to mothers who have no relationship with their child's father experience a greater number of years in poverty and family violence as compared to their cohabiting and dating counterparts ($p \leq .01$), as well as a higher average number of economic hardships than their dating counterparts ($p < .05$). In addition to the difference in SLEs over the zero to three timeframe, these differences generally persisted across each year early in life, particularly when comparing children born to married versus unmarried mothers.

Moreover, preliminary results suggest that the level and persistence of stressful events early in life are associated with higher scores on aggressive and anxious/depressed behavior scales. Results presented below are from models that control for selection factors and behavioral outcomes at year three. Observations with missing variables were dropped from the sample, although multiple imputation will be tested as a strategy to deal with missing data before final models are fitted. Among poverty and economic hardship variables tested, ever experiencing economic hardship (in year one and/or three) was associated with the largest statistically significant increase in aggressive ($b = 1.21, p \leq .01$) and anxious/depressed ($b = 0.72, p \leq .01$) behavior scales, all else equal. The number of years a child experienced economic hardships and the sum of all hardship experiences in years one and three also show positive and statistically significant associations with aggressive and anxious/depressed behavior scales ($p \leq .01$ for all). Ever experiencing poverty was also associated with a statistically significant increase in aggressive behavior ($p < .05$), but no other poverty measures were statistically significant when controlling for prior behavioral outcomes. Finally, the number of years a child experienced domestic violence was associated with an increase in both aggressive and anxious/depressed behavioral scale outcomes ($p \leq .01$ for both). Preliminary results also suggest that mother's relationship status at the child's birth does not show a statistically significant association with behavioral outcomes after accounting for SLEs.

Discussion

Although results are preliminary, our analyses suggest a higher prevalence of SLEs among families with an unmarried mother. Additionally, models suggest that even after controlling for

selection and prior outcomes, there is evidence that suggests an association between SLEs and negative child emotional and behavioral outcomes. Final analyses of the full models will explore the impact of additional important SLEs and will also explore these SLEs as a cumulative risk factor. Finally, future models will explore the potential for parental moderation or mediation of SLEs. We expect that our results will shed more light on the role of SLEs in early child development with important implications for policy targeting improved child outcomes.

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