

How Does the Minimum Wage Affect Child Maltreatment and Parenting Behaviors? An Analysis of the Mechanisms

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Abstract: Children in low socioeconomic status (SES) families are five times more likely to experience child maltreatment relative to children in high SES families. To determine whether increasing the wages of working poor families can prevent maltreatment, we examine whether changes in the local minimum wage (MW) affect child well-being and parenting behaviors. Using data from a representative, longitudinal survey, we use a lagged dependent variable model to compare parenting behaviors in localities where the MW changed to localities where the MW did not change relative to before the MW change took place. We also explore heterogeneity by child's age and a variety of potential mechanisms. We find that increasing the minimum wage reduces spanking by both mothers and fathers, as well as physical and psychological aggression by mothers. These results appear to be driven by changes in maternal employment; whereby mothers reduce their employment and change their weekend shifts. We find no significant effects for positive parenting behaviors, household income, or maternal mental health. Finally, older children exhibit fewer externalizing behaviors as a result of increases in the minimum wage. The results of this study help inform the conversation about income supports and employment policies with regard to their effects and pathways to child well-being.

Keywords: child well-being, child abuse and neglect, minimum wage, income-supports

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1.0 Introduction

Child maltreatment during early childhood has pervasive effects on child health and development. These negative effects span a multitude of dimensions including impeding cognitive development, impairing social functioning, and lowering academic achievement (Kendall-Tackett & Eckenrode, 1996). The effects are also long-lasting. Child maltreatment, which includes physical abuse, sexual abuse, emotional abuse, and neglect, is linked to several long-term health and economic consequences. As adults, children who were the victims of abuse and neglect are more likely to be depressed, unemployed, and involved in the criminal justice system (Currie & Spatz Widom, 2010; Currie & Tekin, 2012; Zielinski, 2009). Further, Kim et al. (2017) estimate that approximately 37 percent of children are the subject of an investigation for child maltreatment by their 18th birthday. The extensive consequences combined with the high prevalence of child maltreatment generates substantial costs to society, totaling \$428 billion in the U.S. annually (Peterson et al., 2018).

Not all children are equally likely to be the victim of child maltreatment, however. Children living in poverty are at greater risk of maltreatment than children in middle- and high-income families. Though unpacking the causal effects of poverty on maltreatment is challenging, recent evidence shows that increasing income or wages can reduce child maltreatment (Berger et al., 2017; Cancian et al., 2013; Raissian & Bullinger, 2017), especially neglect. Particularly relevant for the current paper, previous work has found that increasing state minimum wages reduces reports of neglect to child protective services (CPS) (Raissian & Bullinger, 2017). Since minimum wages can affect income, employment, and other aspects of worker health and well-being, the mechanisms through which changes in the minimum wage reduce child maltreatment, however, are less clear.

This paper contributes to the literature in three distinct ways. First, we build on previous research studying state-level minimum wages (Raissian & Bullinger, 2017) by investigating whether local (city or county) wage ordinances affect CPS involvement. Next, we use individual-level data from a representative longitudinal survey (the Fragile Families and Child Well-Being Study) to understand the effect of the minimum wage on child maltreatment. Finally, we work to unpack possible mechanisms and uncover the effect's "black box". That is, we examine if the effects are due to changes in negative parenting behaviors, such as aggression and neglect, or through the presence of positive parenting practices. This approach allows us to incorporate parenting behaviors that often precede reports to child welfare agencies. We also explore whether material resources for childrearing, employment changes, and parental well-being are affected by the minimum wage. In sum, we are poised to provide evidence on the role of income and its associated pathways (e.g. parental time use, material hardship, mental health) in child maltreatment, which remains largely unanswered in the literature on the economic determinants of child maltreatment (Bullinger, Lindo, & Schaller, 2020).

Largely consistent with earlier research, results show that increasing a city's minimum wage reduces spanking by both mothers and fathers. We also attribute less physical and psychological aggression towards children overall to greater minimum wages, though this effect varies across child age. Finally, and contrary to what one might expect, we observe more physical neglect, which involves the deprivation of material necessities, among older children. There are no significant effects on positive parenting behaviors such as emotional warmth or engagement with children in various activities that enhance child development.

We probe a variety of mechanisms to better understand these results. The effects of minimum wage on the risk for child maltreatment likely operate through changes in maternal

employment. In particular, we find evidence of a substitution effect; we see reductions in maternal employment. Additionally, mothers with young children (aged 3) are more likely to work weekend shifts, while mothers with slightly older children (aged 5) are less likely to work weekend shifts. We also find suggestive evidence for fewer externalizing child behavior problems among older children as a result of higher minimum wages. Finally, annual household income and maternal mental health do not appear to be affected by changes in the minimum wage.

These results have implications for both the scope of employment and income policies *and* the design and implementation of policies to prevent and treat child maltreatment. A deeper understanding of the ways in which the minimum wage influences the risk for child maltreatment, through attendant changes in family wellbeing, provides important direction for the development of policy and practice.

2.0 Background

2.1 Disparities in Child Maltreatment

The Fourth National Incidence Study of Child Abuse and Neglect (NIS-4)—the nation’s needs assessment on child abuse and neglect—found that children in low socioeconomic status families were more than five times as likely to be the victim of child maltreatment than children in high socioeconomic status families (Sedlak et al., 2010). Risk was particularly high for neglect, which is defined by inadequate access to basic needs such as food, clothing, shelter, medical care, and supervision. The NIS-4 also found pervasive inequalities in the incidence of maltreatment across race and ethnicities; the abuse rate of Black children is 1.6 times greater than white and Hispanic children.

Previous research has found that household-level income (Berger, 2004), county-level income inequality (Eckenrode et al., 2014), and county-level income mobility (Bullinger et al., 2019) are all predictors of child maltreatment risk. This line of research implies that providing income support to lower-income families may reduce exposure to maltreatment for children in these families, potentially lessening the child maltreatment-income gradient.

2.2 Minimum Wage and At-Risk Families

The population that benefits most from an increase in the minimum wage overlaps substantially with those at risk of perpetrating child maltreatment. Specifically, women largely benefit from increases in the minimum wage (National Economic Council et al., 2014), and children living in single, female headed households are at the highest risk of child maltreatment (Sedlak et al., 2010). There is overwhelming evidence that increasing the minimum wage reduces poverty (Dube, 2018), especially for families with children (DeFina, 2008; Morgan & Kickham, 2001; Neumark & Wascher, 2001; 2011). Further, recent evidence from the Seattle minimum wage ordinance suggests that income gains have been concentrated among workers who work relatively more hours and have been in the labor force longer (Jardim et al., 2018). In other words, the gains from the Seattle minimum wage increase are largely among adult workers (instead of adolescents) and workers heading families.

2.3 The Direct Role of Income in Child Maltreatment

There are multiple ways in which improving financial well-being can affect child maltreatment. The first is a direct pathway: through a caregiver's ability to provide a child with basic needs—such as food, shelter, and healthcare—and safe and consistent care (Berger, 2007; Berger & Waldfogel, 2011; Feely et al., 2020). This direct connection is perhaps most relevant

for the incidence of childhood neglect, which is closely related to a caregiver's ability to provide materially for a child.

Research attempting to separate the effects of income from the effects of other confounding factors such as human capital, health, neighborhoods, and social supports depends largely on income shocks through policy interventions. For example, Raissian and Bullinger (2017) examine whether variation in state-level minimum wages over time affect CPS involvement using panel data on administrative reports. They find that increasing the state-level minimum wage by one-dollar reduces reports of neglect by about ten percent. The effects are strongest for children age 12 and younger. Increases in family income through exogenous variation in the EITC and child support have also been shown to significantly reduce CPS involvement, primarily through reductions in neglect (Berger et al., 2017; Cancian et al., 2013). Notably, these three studies are fairly consistent in effect sizes. Expansions in the EITC also reduced foster care entries (Biehl & Hill, 2018).

Changes in economic circumstances can also lead to food insecurity. Resource scarcity within households often forces families to reallocate resources across their obligations such as rent, medical care, or bills (Heflin et al., 2009). To the extent that low-income families shift their resources away from providing food, children are at a greater risk of maltreatment, particularly neglect. Indeed, there is evidence that parents who reduce their meals or use a food pantry are more likely to be involved with CPS (Slack et al., 2011; Yang, 2015). Studies on the effects of state and federal minimum wages on food security, however, are mixed (Rodgers III, 2015; Sabia & Nielsen, 2015).

Finally, poor financial well-being can lead to, or may be the result of, housing insecurity. Housing insecurity as measured by foreclosures (Berger et al., 2015; Frioux et al., 2014; Wood et

al., 2012), evictions (Bullinger & Fong, 2020), and doubling up or homelessness (Font & Warren, 2013) have been linked to CPS involvement. Financial strain due to housing insecurity can directly affect child maltreatment, primarily through its effects on neglect (Warren & Font, 2015).

2.4 Indirect Pathways

The minimum wage is very likely to change the hourly wages of low-income families. This may indirectly affect the risk for child maltreatment through various pathways, including employment patterns and time use, financial stress, relationship strain, and parenting quality, to name a few.

Changes in employment patterns may affect the material resources available for childrearing (a direct link to maltreatment) and can also change parental time use. Shifts in parental time use toward children may also have different effects than shifts away from children. For example, if children spend more time with parents, child well-being may improve. If children spend more time with relatives or caregivers that are more likely to maltreat them, then child well-being may deteriorate (Bullinger et al., 2020; Raissian, 2015). Indeed, recent research shows that mass layoffs leading to large scale job loss increased child maltreatment (Lindo et al., 2018; Schenck-Fontaine et al., 2017). Lindo et al. (2018) also find that male employment reduces maltreatment while female employment increases maltreatment, consistent with a parental time use mechanism. Schenck-Fontaine and Gassman-Pines (2020) further find that mass layoffs have larger effects on child abuse and neglect in states with low income inequality. When applying this theory to higher minimum wages, if parents respond by changing their employment patterns in the form of shifts or hours worked, we may expect child well-being to be affected. The direction, however, may depend on whether parents work more or less, which parent's

employment patterns change, and possibly *when* parents work (e.g. days, nights, weekends, etc.). Changes in employment shifts could also change children’s care arrangements. For example, if parents work during non-standard hours, care options may be more limited, but if parents work during standard hours, more care options may be available. The availability of safe and sustainable care reduces children’s risk of neglect and other forms of abuse.

Income-levels can also affect mental health, substance use, and relationship strain. Stress, anxiety, and depression among caregivers are important risk factors for physical abuse and neglect (Stith et al., 2009). If these psychological issues result in caregivers developing unhealthy coping strategies, such as substance use and abuse, children can be at a greater risk of maltreatment (Bullinger & Ward, 2019). A line of recent research provides evidence that increasing the minimum wage improves mental and overall health (Reeves et al., 2017), particularly among women (Horn et al., 2017), decreases the prevalence of smoking (Lenhart, 2017) and lowers absences from work due to illness (Du & Leigh, 2018), all of which may improve parent-child relationships.

Intra-family relations may also be affected by changes in household incomes. For example, higher family incomes can have a protective effect on family conflict, balance of power, sensitivity, warmth, and consistency in parenting behaviors (Conger et al., 1990; Yeung et al., 2002). Although research on this topic is sparse—and is one of the contributions of this paper—there is recent evidence that when only fathers’ incomes are sensitive to the minimum wage, they are more likely to live with their children (Emory et al., 2020). Alternatively, this same study found that when only mothers’ incomes are sensitive to minimum wage increases, fathers are less likely to live with their children. These changes in fathers’ residence based on

minimum wage increases reflect family processes in response to economic policies, and may be an important conduit to child maltreatment.

Extant research indicates that some aspects of child maltreatment may be bi-directional, with parent and child behaviors interacting to increase or decrease the likelihood of maltreatment (Belsky, 1980). Child behavior problems and low levels of parent-child attachment may increase the likelihood of child maltreatment (Crittenden & Ainsworth, 1989; Herrenkohl, Herrenkohl, & Egolf, 1983). Similarly, mothers experiencing depression may be more likely to interpret child behavior as defiant, resulting in increased risk for maltreatment (Easterbrooks et al., 2013).

Our paper builds on the existing literature in a number of important ways. We are the first to examine city or local level effects of the minimum wage on outcomes related to child discipline, maltreatment, and well-being. We then fully leverage the measures in our data (explained below) to interrogate which mechanisms may affect child maltreatment and well-being. Results from this work extend the evidence demonstrating the need for financial assistance among low-wage earning families.

3.0 Data

3.1 Sources

Parenting behaviors come from the Fragile Families and Child Well-Being Study (FFCW), which is a nationally representative, individual-level survey. The FFCW study follows the parents of nearly 5,000 children born in 20 large U.S. cities in 15 states between 1998 and 2000. Follow-up interviews were conducted when the child was roughly 1, 3, 5, 9, and 15 years old. We do not include the year 15 follow-up since many of the questions we study are not asked during this wave. The study includes questionnaires of both mothers and fathers and in-home observations. When weighted, the survey produces a nationally representative dataset of children

born in urban areas between 1998 and 2000. City of birth and notification of a move are provided, which we use to match individuals to the minimum wage in the current city of residence. Local minimum wage levels come from the Inventory of U.S. City and County Minimum Wage Ordinances, compiled by the University of California, Berkeley Center for Labor Research and Education. If the locality does not have its own minimum wage, we use the state or federal minimum wage, whichever is higher. We construct real wage levels (2016 dollars) using the Consumer Price Index (CPI). Following previous literature on the effects of minimum wage on children, we limit the sample to mothers with a high school education or less at baseline to better approximate the effects on the population likely affected by changes in the minimum wage (Wehby et al., 2020, 2020).

3.2 Measures

3.2.1 Adverse Parenting Behaviors

We use five different measures to capture a child's risk of maltreatment: spanking, physical aggression, psychological aggression, physical neglect, and supervisory/exposure neglect. Beginning at the age 1 survey and measured continuously throughout the study, both mothers and fathers were asked whether they had spanked the focal child in the past month. Although corporal punishment is not itself child abuse, some research indicates that it may be an indicator of the risk for child abuse (Gershoff, 2002). We use this question to create a dichotomous variable for maternal and paternal spanking.

Next, we measure physical and psychological aggression. Beginning at the age 3 survey, mothers reported on their own physically and psychologically aggressive parenting behaviors. Questions were drawn from the Conflict Tactics Scale for Parent and Child (CTSPC) (Straus et al., 1998). For physical aggression mothers reported how often they had (in reference to the focal

child): (1) hit child on the bottom with something like a belt, hair brush, stick or other hard object (2) shook child; (3) slapped child on the hand, arm, or leg; or (5) pinched child. We use these responses to create a continuous measure, ranging from 0-24.

For psychological aggression mothers reported how often they had: (1) shouted, yelled, or screamed at the child; (2) swore or cursed at child; (3) said you would send child away/kick out of the house; (4) threatened to spank or hit child but did not do it; (5) called child dumb, lazy, or similar name. Again, we create a continuous measure of the number of times the parent engaged in psychological aggression (range is 0-24).

We then largely follow Font and Berger (2015) in constructing our measures of (1) physical neglect and (2) supervisory/exposure neglect.¹ For physical neglect, beginning at the age 3 survey, mothers were asked whether: the child did not receive sufficient food, the child did not receive needed medical care, the family was homeless or doubled up, if the household was physically unsafe according to an in-home observer, or the child appeared to have poor physical hygiene according to an in-home observer. We create an indicator if any of these items (seven possible) were reported as yes (Berger et al., 2017). We also drew on a series of questions beginning at the age 3 survey to assess supervisory/exposure neglect (Font & Berger, 2015). Mothers were asked if: the child was left alone without an adult, the child was exposed to parental substance abuse, or the child was exposed to criminal activity. We created a dichotomous indicator variable for supervisory/exposure neglect if any of these experiences (maximum of five) occurred.

3.2.2 Positive Parenting Behaviors

¹We make two exceptions in following Font and Berger (2015). First, for physical neglect, we do not include whether the household had its utilities shut off, as this could be its own mechanism. Second, for similar reasons, we do not include whether the child was exposed to domestic violence in the supervisory/exposure neglect measure.

We measure positive parenting behaviors as maternal warmth and play activities. First, maternal warmth was assessed through a series of observations from the HOME scale (Caldwell & Bradley, 2001). Trained in-home observers recorded whether the mother: (1) spoke to the child; (2) used terms of endearment; (3) or cuddled the child, among other items. We sum these items to create a scale ranging from 0-7. Second, at waves 1, 3, and 5 mothers reported how often they and the child's biological father engaged in a number of play activities with the child. Activities included: read stories, told stories, played with blocks or toys, played games, and played outside, among others. Mothers only reported on fathers' play activities if the father had seen the child in the past 30 days. Fathers who had not seen the child were recoded as having not recently or never engaged in play activities. The range for both maternal and paternal parenting activities is 0-7.

3.2.3 Mechanisms

The minimum wage affects the hourly wages of low-wage earners. Ideally, we would study the effects of the minimum wage on wages. Instead, we use income and employment measures, as hourly wage measures are unavailable. Specifically, mothers reported their pre-tax household income in the last year in nominal dollars. This measure is flawed if mothers adjust their work hours due to a higher wage. Nonetheless, it is our best measure of the direct income effect. Mothers and fathers reported whether they were employed, working for pay in the last two weeks, which we use as two separate dichotomous measures. Finally, mothers reported whether they sometimes worked the evening and/or weekend shifts (separately). We use these responses to determine if minimum wage changes affect the wage premium on working less desirable shifts, as measured by two separate binary variables.

Although FFCWS asked mothers to report who provided childcare for them, we were unable to draw on these questions due to small sample sizes. Instead, we utilize mothers' responses to how many childcare arrangements they have (range: 0-12) and the number of hours per week that their child was in care.

The FFCWS included 15 questions from the Major Depressive Episodes (MDE) scale derived from the Composite International Diagnostic Interview – Short Form (CIDI-SF) (Kessler et al., 1998). Mothers reported feelings of dysphoria or anhedonia in the past year that lasted two weeks or more. We draw on a dichotomous depression variable, identifying mothers having depressive symptoms that lasted for at least half of the day, almost every day. Additionally, mothers were asked how strongly they agreed with four questions about feelings of being overwhelmed or discouraged by their parenting responsibilities (strongly disagree to strongly agree). We draw on these questions to create a measure of parenting stress (range: 0-12).

Child behavior as a result of changes in household economic wellbeing may also change a child's risk for maltreatment. We use measures of both externalizing and internalizing behavior problems. Specifically, at the age 3, 5 and 9-year follow-up surveys, mothers were asked a series of questions designed to illicit information on their children's externalizing behaviors. These questions were drawn from 35 items from the aggression and rule-breaking subscales of the Achenbach Child Behavior Check List (CBCL) (Achenbach & Edelbrock, 2001). We sum these items to create a scale of externalizing behavior problems ranging from 0-39. Mothers were also asked questions about their children's internalizing behavior problems. These questions were drawn from the anxious/depressed or withdrawn/depressed, and somatic complaints subscales of the CBCL. We sum these items to create a scale of internalizing behavior problems, which ranges from 0 to 34.

Finally, to assess whether changes in minimum wages affect family or household dynamics, we test whether formal and informal child support payments are responsive. Specifically, mothers reported whether non-resident fathers had provided child support via a legal agreement or child support order, and how much fathers had actually paid. Mothers also reported whether non-resident fathers provided informal cash payments.

3.2.5 Covariates

We include a robust set of socio-demographic controls measured at baseline, including maternal marital status (married, cohabitating, single) maternal race/ethnicity (white, Black, Hispanic, other), mother's age, child age, child sex, and number of children in the household. We also include whether the mother was married to, or cohabiting with, a new partner at the age 1 follow-up survey. In addition, we include a number of geographic-based controls including, a measure of the city level unemployment rate during the year of the interview drawn from the Bureau of Labor Statistics, and the following Census-tract level characteristics: the percentage race/ethnicity, female headed households with children, mean number of persons per household, median gross rent, and median housing value in nominal dollars. These variables come from the Census Bureau. We also include state-level controls for the state-level EITC rate and the maximum TANF benefit amount for a family of 3 in nominal dollars, which we obtain from the University of Kentucky Center for Poverty Research (UKCPR, 2020). Finally, we restrict our sample to only include mothers with a high school or less than high school education or equivalent.

3.3 Descriptive Statistics

Appendix Tables 1 and 2 report the baseline binding minimum wage and maternal characteristics for our largest analytic sample (n=1,417), along with descriptive statistics for each of the outcome and mechanism variables. At baseline, the sample largely consists of single mothers (48%) with a high school degree or less (49 and 51%, respectively). The majority of mothers were Black (57%). Cities in which respondents reside have relatively low unemployment rates (3.85%) throughout the study period. At baseline, the average state EITC rate was 3% and the average TANF benefit for a family of three was about \$351 per month, and approximately one-quarter of households had children under the age of 18.

Measures of parenting behaviors range across child ages. For example, 31% and 22% of one-year olds experience spanking by mothers and fathers, respectively, whereas those numbers are 51% and 20% at age 9. Younger children are more likely to be the victim of physical aggression and physical neglect. For example, three-year olds experience approximately 7 events of physical aggression compared to 4 events among nine-year olds. Seventy one percent of three-year olds are the victims of physical neglect, compared to 42% of 9-year olds. In contrast, older children are more likely to experience supervisory/exposure neglect. Children of all ages experience about 8-9 indicators of psychological aggression, on average.

3.4 Analytical Approach

Generally, we compare child maltreatment and parenting behaviors in localities with changes in their binding (i.e., highest of the federal, state, or local minimum wage pertaining to a given locality) minimum wages to localities that did not experience a change in their binding minimum wage, before and after those changes occurred. Specifically, we estimate the following equation:

$$Y_{ict} = \beta_0 + \beta_1 MW_{ct} + \beta_2 Y_{it-1} + X_i + Z_{ct} + \alpha_c + \varepsilon_{it} \quad (\text{equation 1})$$

Where Y is the outcome of interest (a parenting behavior), for individual i residing in city c in year of interview t . MW is the real minimum wage for city c in year t , and is the variable of interest. We are interested in whether the effects of changes in minimum wages on maltreatment and parenting behaviors varies by child age. Therefore, we do not pool the FFCW into one large cross-section, since we would not be able to observe differences across age. We also do not use the full longitudinal dataset, as we would then be studying only 9-year-olds. Instead, we adjust for the outcome variable in all previous waves in a dependent variable lagged model. For example, a parent's responses for physical aggression at child's age 3 would adjust for the parent's responses at child age 1; a parent's responses at child's age 9 would adjust for the parent's responses at child age 1, 3, and 5 (if all are available). This approach is akin to including household fixed effects, allowing us to both adjust for unobserved characteristics that are correlated with previous wave's parenting behaviors, and examine differences in effects across child age. The vector X includes baseline characteristics noted above. Z captures the city's unemployment rate, socio-demographic information at the census tract level, and state level social welfare generosity, and α consists of city-level fixed effects, which adjust for time-invariant factors correlated with both the city's minimum wage and parenting behaviors. The idiosyncratic error term is captured in ε .

Equation 1 is estimated using ordinary least squares (OLS), featuring linear probability models (LPM) for binary variables; we estimate Poisson models for physical aggression, psychological aggression, maternal warmth, parenting activities, and parenting stress to reflect the count nature of these measures. Bootstrapped standard errors (1,000 iterations) are clustered at the city-level, the level at which the minimum wage variation exists, and to account for the

relatively small number of clusters; this also corrects for any over dispersion in the Poisson model.

4.0 Results

4.1 Main Results

We split our results by parenting behaviors, across both parents (when available) and child age. Our first set of results focuses on maternal and paternal spanking, reported in Table 1. Column 1 shows that increasing the real minimum wage by \$1 is associated with a reduction in maternal spanking of a 3-year old by about 7 percentage points, after adjusting for whether the mother spanked the child at age one. Relative to the mean of 55 percent, this change reflects a reduction of 13.5 percent. Columns 2 and 3 show no significant effects of the minimum wage on maternal spanking of five- and 9-year olds. Notably, whether a mother spanked a child in the previous waves is a strong predictor of spanking the child in the current wave, consistent across all ages. Columns 4 through 6 suggest a similar story among paternal spanking. Specifically, a \$1 increase in the minimum wage is associated with a reduction of 7.8 percentage points (18 percent) in the probability of spanking a 3-year old. We find no significant effects for father's spanking of 5 or 9 year olds.

We turn now to outcome measures that better reflect most legal definitions of child maltreatment and are more likely to constitute a report to CPS. Specifically, Table 2 displays the effects of local minimum wages on physical aggression, psychological aggression, physical neglect, and supervisory/exposure neglect. Columns 1 through 4 show significant reductions of approximately 2-14 percent in the frequency of physical and psychological aggression exhibited towards 9-year-olds. Once again, exhibiting aggression in previous waves (ages 3 or 5) remains a very strong predictor for both types of aggression in the current wave.

Turning to measures of neglect, column 5 shows that increasing the minimum wage by \$1 is associated with a marginally significant reduction of about 3.6 percentage points that a 5-year old will experience physical neglect. At 81%, 5-year olds experience the highest likelihood of physical neglect, implying an effect size of roughly 4.4 percent. In contrast—and curiously—physical neglect among 9-year olds increases as a result of the minimum wage. Column 6 shows an increase of 7.6 percentage points, or about 18 percent. Finally, columns 7 and 8 show no effects on supervisory/exposure neglect among 5 or 9 year olds.

As noted earlier, changes in income and/or employment may affect parenting behaviors in a variety of ways. While Tables 1 and 2 focused on adverse behaviors, Table 3 shows how local minimum wages affect positive parenting behaviors. Minimum wage changes do not appear to affect the maternal warmth displayed toward 5 or 9 year olds (columns 1 and 2) or the number of activities a mother engages in with her child (columns 3 and 4) (on a seven-point scale). Increasing the minimum wage by \$1 increases a father’s level of engagement at age 3 by about 17.6 percentage points (column 5), though this estimate is marginally significant. Indeed, by 5-years old, the effect of minimum wage is gone (column 6).

4.2 Mechanisms

Changes in the minimum wage may instigate changes in the childcare arrangements that parents use. We examine the direct effects of minimum wage increases on the number of childcare arrangements that parents use, as well as the total number of hours that children spend in care per week. Table 4 shows no significant effect of minimum wage on either of these measures, though we note that the sample is substantially smaller for this set of outcomes.

Minimum wage increases could affect child maltreatment directly through changes in income, or indirectly through changes in parental time use, mental health, or family dynamics.

We first examine the direct effects on household income. Table 5 shows no significant effect of minimum wages on total pre-tax household income at child ages 1, 3, 5, or 9.

We next study whether the noted indirect mechanisms could play a role. To capture parental time use, Table 6 reports results for employment of both mothers and fathers. In this table, we see reductions in the probability of a mother working for pay within the past two weeks at child age 5, and at child age 3 among fathers. Table 6 further shows that mothers of 5-year olds are less likely to work the weekend shift (though more likely at child age 3), which may affect the caregiver responsible for the child on weekends, maternal mental health, and other possible mechanisms.

If, all else equal, increasing the minimum wage reduces maternal stress, we may expect to observe fewer adverse parenting behaviors. Columns 1 through 6 of Table 7, however, shows no role of minimum wage changes on maternal depression or maternal stress at any child age. Finally, if children themselves behave differently in response to changes in family incomes or economic situations, we may observe reductions in spanking. Table 7 also shows generally no consistent effects on child behaviors across ages. Among 9-year olds, however, externalizing behaviors such as physical aggression and antisocial behaviors, are reduced, though this estimate is only marginally significant. Last, increases in the minimum wage may also increase non-resident fathers' ability to pay formal or informal child support. However, Table 8 does not show a significant effect of minimum wage changes on fathers' informal or formal child support payments.

4.3 Effects by Marital Status

These results offer evidence supporting the employment and parental time use mechanism. Nonetheless, the average effects we have estimated thus far may mask important

variation across subpopulations that may aid in uncovering which of these mechanisms, if any, is most likely, and for which populations. Therefore, we further disaggregate the effects by marital status. Table 9 reports the results for all outcomes and mechanisms splitting by child age and maternal marital status. Panel A shows reductions in maternal spanking of 3-year olds among both single mothers and cohabitating mothers. Turning to paternal spanking, Panel B shows reductions in spanking at age 3 among only children living with cohabitating mothers. Children aged 9 living with single mothers experience both less physical aggression (Panel C) and psychological aggression (Panel D). Panel E indicates reductions in physical neglect among single mothers but increases in supervisory/exposure neglect (Panel F). Panels G through T generally do not demonstrate consistent findings in the effects of minimum wages on positive parenting or mechanisms by marital status. Child support is restricted to non-resident fathers; as a result these models are not included in Table 8. Of the outcomes on which we see movement, some improvements are driven by cohabitating mothers, while others are driven by single mothers. This analysis suggests that household structure and marital status may play an important role in how economic/employment policies affect risk of child maltreatment, however, there appears to be nuance in how effects manifest.

5.0 Discussion

We examine the effect of local minimum wages on the risk for child maltreatment and parenting behaviors. Our results show that a \$1 increase in the minimum wage is associated with a reduction in both maternal and paternal spanking among 3-year olds by between roughly 8 and 13 percent. We find no effects on spanking of 5- and 9-year olds. We also find reductions in physical and psychological aggression towards 9-year olds. Finally, we find mixed evidence for changes in physical neglect, with decreased neglect at age 5, but increased neglect at age 9. This

finding suggests that children of various ages may be affected differently by changes in the minimum wage.

Our results contribute to a growing literature indicating that household economic circumstances play a role in child maltreatment. Preventing primary maltreatment may then require more innovative strategies than have historically been employed. Policies and interventions that focus on narrow changes or outcomes may have limited long-lasting success, especially when compared to policies that address the underlying social and economic problems contributing to poverty and child maltreatment. Indeed, a recent review by the U.S. Preventive Services Task Force concludes that the existing evidence on interventions aiming to prevent primary child maltreatment – many of which include targeted home visiting – is disappointing (Runyan, 2018). Thus far research has not been successful in making universal policy recommendations, particularly for the primary, as opposed to secondary, or repeat, prevention of maltreatment. Given the enormous costs that child maltreatment generates to society, research should work to understand how to efficiently and effectively prevent child abuse and neglect and reduce the inequalities in child victimization. The potential to *simultaneously* disrupt poverty *and* maltreatment through universal public policy is important for guiding policymakers in protecting the more than 7.4 million children who are referred to child protective service agencies annually (DHHS, 2018).

The decline of the value of the real minimum wage has been a significant factor in the increase in inequality for the lower half of the income distribution. Some research estimates that nearly half of the increase in low-end inequality from 1979 to 2009 was due to the decline in the value of the minimum wage (Autor et al., 2016). The minimum wage is just one policy tool designed to increase the incomes of low-income families and reduce economic inequality; the

results from this study help to inform the conversation about other cash transfer programs, tax incentives, or employment policies aimed at reducing inequality. Taken together, the results from this analysis have the potential to expand the conversation surrounding social inequality, the minimum wage, and income assistance programs to incorporate measures of child well-being, which may in turn offer a more complete cost-benefit analysis of these policies.

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Figures and Tables

Table 1. Effects of Minimum Wage on Spanking

	Maternal Spanking ^a			Paternal Spanking ^a		
	(1)	(2)	(3)	(4)	(5)	(6)
	Year 3	Year 5	Year 9	Year 3	Year 5	Year 9
Minimum wage (\$2016)	-0.074*** (0.021)	0.255 (0.192)	-0.171 (0.704)	-0.078* (0.031)	-0.012 (0.026)	-0.024 (0.034)
Lagged outcome in year 1	0.299*** (0.028)	0.072** (0.029)	0.013 (0.031)	0.034*** (0.048)	0.143** (0.054)	0.041 (0.048)
Lagged outcome in year 3		0.361*** (0.027)	0.133*** (0.032)		0.314*** (0.043)	0.082* (0.037)
Lagged outcome in year 5			0.189*** (0.030)			0.123*** (0.040)
Mean Y	0.55	0.50	0.51	0.43	0.34	0.20
N	1,347			569		

Source: Fragile Families and Child Well-Being Study. Notes: Sample limited to respondents with high school education or less. Models adjust for outcome variable in all previous waves, baseline marital status, education, race/ethnicity, mother's age, child age, child gender, number of children in household, year 1 marital status, city unemployment rate, the following Census Tract-level characteristics: percentage race/ethnicity, female headed households with children, mean number of persons per household, median gross rent, and median housing value, the respondent's state EITC rate and the maximum TANF benefit amount, and city fixed effects. Bootstrapped standard errors clustered at the city-level are in parentheses. *** p<0.001, ** p<0.01, * p<0.05, + p<0.10

^a Linear probability model

Table 2. Effects of Minimum Wage on the Risk for Child Maltreatment

	Physical Aggression ^a		Psychological Aggression ^a		Physical Neglect ^b		Supervisory/Exposure Neglect ^b	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Year 5	Year 9	Year 5	Year 9	Year 5	Year 9	Year 5	Year 9
Minimum wage (\$2016)	-0.056 (0.058)	-0.236* (0.102)	0.041 (0.034)	-0.160*** (0.049)	-0.036+ (0.020)	0.076** (0.028)	0.017 (0.011)	-0.004 (0.021)
Lagged outcome in year 3	0.075*** (0.005)	0.032*** (0.009)	0.058*** (0.004)	0.029*** (0.005)	0.067* (0.029)	0.036 (0.033)	0.233*** (0.035)	0.192*** (0.041)
Lagged outcome in year 5		0.071*** (0.009)		0.051*** (0.004)		0.110** (0.036)		0.149*** (0.039)
Mean Y	1.29	1.67	8.44	9.21	0.81	0.42	0.11	0.16
N	805		886		993		1,417	

Source: Fragile Families and Child Well-Being Study. Notes: Sample limited to respondents with high school education or less. Models adjust for outcome variable in all previous waves, baseline marital status, education, race/ethnicity, mother's age, child age, child gender, number of children in household, year 1 marital status, city unemployment rate, the following Census Tract-level characteristics: percentage race/ethnicity, female headed households with children, mean number of persons per household, median gross rent, and median housing value, the respondent's state EITC rate and the maximum TANF benefit amount, and city fixed effects. Bootstrapped standard errors clustered at the city-level are in parentheses. *** p<0.001, ** p<0.01, * p<0.05, + p<0.10

^a Poisson regression

^b Linear probability model

Table 3. Effects of Minimum Wage on Positive Parenting Behaviors

	Maternal Warmth ^a		Maternal Activities ^a		Paternal Activities ^a	
	(1)	(2)	(3)	(4)	(5)	(6)
	Year 5	Year 9	Year 3	Year 5	Year 3	Year 5
Minimum wage (\$2016)	0.037 (0.027)	-0.240 (0.353)	-0.007 (0.011)	0.027 (0.054)	0.043* (0.019)	-0.024 (0.024)
Lagged outcome in year 1	--	--	0.122*** (0.006)	0.061*** (0.007)	0.113*** (0.010)	0.050*** (0.009)
Lagged outcome in year 3	0.034 (0.019)	-0.025 (0.018)		0.067*** (0.006)		0.098*** (0.009)
Lagged outcome in year 5		0.027* (0.010)	--	--	--	--
Mean Y	5.31	4.58	4.86	4.82	3.91	3.81
N	521		1,436		658	

Source: Fragile Families and Child Well-Being Study. Notes: Sample limited to respondents with high school education or less. Models adjust for outcome variable in all previous waves, baseline marital status, education, race/ethnicity, mother's age, child age, child gender, number of children in household, year 1 marital status, city unemployment rate, the following Census Tract-level characteristics: percentage race/ethnicity, female headed households with children, mean number of persons per household, median gross rent, and median housing value, the respondent's state EITC rate and the maximum TANF benefit amount, and city fixed effects. Bootstrapped standard errors clustered at the city-level are in parentheses. *** p<0.001, ** p<0.01, * p<0.05, + p<0.10

^a Poisson regression

Table 4. Effects of Minimum Wage on Childcare Arrangements and Hours

	Number of Childcare Arrangements ^a		Number of Hours in Care ^a	
	(1)	(2)	(3)	(4)
	Year 3	Year 5	Year 3	Year 5
Minimum wage (2016)	0.105 (0.064)	-0.009 (0.100)	-0.498 (0.812)	-1.176 (1.384)
Lagged outcome at year 1	-0.024 (0.150)	0.180 (0.191)	0.373*** (0.057)	0.204** (0.066)
Lagged outcome at year 3		0.207 (0.130)		0.271*** (0.070)
Mean Y	0.79	0.68	13.01	11.13
N	129		355	

Source: Fragile Families and Child Well-Being Study. Notes: Sample limited to respondents with high school education or less. Models adjust for outcome variable in all previous waves, baseline marital status, education, race/ethnicity, mother's age, child age, child gender, number of children in household, year 1 marital status, city unemployment rate, the following Census Tract-level characteristics: percentage race/ethnicity, female headed households with children, mean number of persons per household, median gross rent, and median housing value, the respondent's state EITC rate and the maximum TANF benefit amount, and city fixed effects. Bootstrapped standard errors clustered at the city-level are in parentheses. *** p<0.001, ** p<0.01, * p<0.05, + p<0.10

^a OLS regression

Table 5. Effects of Minimum Wage on HH Income

	Annual Household Income ^a			
	(1) Year 1	(2) Year 3	(3) Year 5	(4) Year 9
Minimum wage (\$2016)	138.041 (744.355)	-590.748 (698.852)	-844.353 (806.702)	-1128.132 (1030.809)
Lagged outcome in baseline	0.408*** (0.041)	0.252*** (0.037)	0.060+ (0.034)	0.138*** (0.038)
Lagged outcome in year 1		0.413*** (0.067)	0.186*** (0.038)	0.158*** (0.044)
Lagged outcome in year 3			0.388*** (0.048)	0.151** (0.055)
Lagged outcome in year 5				0.308*** (0.044)
Mean Y	20749	22242	24186	29949
N	1,441			

Source: Fragile Families and Child Well-Being Study. Notes: Sample limited to respondents with high school education or less. Models adjust for outcome variable in all previous waves, baseline marital status, education, race/ethnicity, mother's age, child age, child gender, number of children in household, year 1 marital status, city unemployment rate, the following Census Tract-level characteristics: percentage race/ethnicity, female headed households with children, mean number of persons per household, median gross rent, and median housing value, the respondent's state EITC rate and the maximum TANF benefit amount, and city fixed effects. Bootstrapped standard errors clustered at the city-level are in parentheses. *** p<0.001, ** p<0.01, * p<0.05, + p<0.10

^a OLS regression

Table 6. Effects of Minimum Wage on Employment, Evening Shift, and Weekend Shift

	Maternal Employment ^a			Paternal Employment ^a			Sometimes Work Evening Shift ^a			Sometimes Work Weekend Shift ^a		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Year 3	Year 5	Year 9	Year 3	Year 5	Year 9	Year 3	Year 5	Year 9	Year 3	Year 5	Year 9
Minimum wage (\$2016)	-0.020 (0.022)	-0.036* (0.019)	-0.018 (0.027)	-0.039+ (0.022)	0.006 (0.027)	-0.016 (0.032)	-0.003 (0.023)	-0.017 (0.025)	-0.016 (0.029)	0.038* (0.019)	-0.036* (0.016)	0.015 (0.019)
Lagged outcome in year 1	0.321*** (0.024)	0.205*** (0.025)	0.127*** (0.030)	0.410*** (0.045)	0.297*** (0.059)	0.119* (0.049)	0.098** (0.035)	0.101* (0.049)	0.017 (0.042)	0.074* (0.034)	0.152*** (0.043)	0.019 (0.036)
Lagged outcome in year 3		0.274*** (0.024)	0.163*** (0.030)		0.212*** (0.056)	0.101* (0.049)		0.003 (0.036)	0.044 (0.047)		0.032 (0.034)	0.024 (0.034)
Lagged outcome in year 5			0.227*** (0.025)			0.159*** (0.044)			0.033 (0.040)			0.021 (0.029)
Mean Y	0.52	0.55	0.51	0.82	0.78	0.86	0.10	0.09	0.09	0.11	0.10	0.08
N		1,436			534			657			922	

Source: Fragile Families and Child Well-Being Study. Notes: Sample limited to respondents with high school education or less. Models adjust for outcome variable in all previous waves, baseline marital status, education, race/ethnicity, mother's age, child age, child gender, number of children in household, year 1 marital status, city unemployment rate, the following Census Tract-level characteristics: percentage race/ethnicity, female headed households with children, mean number of persons per household, median gross rent, and median housing value, the respondent's state EITC rate and the maximum TANF benefit amount, and city fixed effects. Bootstrapped standard errors clustered at the city-level are in parentheses. *** p<0.001, ** p<0.01, * p<0.05, + p<0.10

^a Liner probability model

Table 7. Effects of Minimum Wage on Maternal Mental Health and Child Behaviors

	Maternal Depression ^a			Maternal Stress ^b			Child's Externalizing ^c		Child's Internalizing ^c	
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)
	Year 3	Year 5	Year 9	Year 3	Year 5	Year 9	Year 5	Year 9	Year 5	Year 9
Minimum wage (\$2016)	-0.020 (0.016)	-0.005 (0.012)	-0.024 (0.019)	0.013 (0.027)	0.052 (0.048)	-0.009 (0.046)	0.471 (0.680)	-0.705+ (0.431)	0.092 (0.495)	-0.169 (0.352)
Lagged outcome in year 1	0.338*** (0.036)	0.215*** (0.031)	0.238*** (0.035)	0.095*** (0.007)	0.105*** (0.006)	0.078*** (0.008)	---	---	---	---
Lagged outcome in year 3		0.211*** (0.035)	0.208*** (0.028)		0.046*** (0.006)	0.038** (0.010)	0.567*** (0.034)	0.330*** (0.046)	0.360*** (0.025)	0.439*** (0.067)
Lagged outcome in year 5			0.085** (0.032)			0.035*** (0.008)		0.154*** (0.042)		0.057 (0.044)
Mean Y	0.22	0.17	0.19	4.99	4.65	4.20	14.44	7.05	6.05	5.06
N		1,435			1,350		808		811	

Source: Fragile Families and Child Well-Being Study. Notes: Sample limited to respondents with high school education or less. Models adjust for outcome variable in all previous waves, baseline marital status, education, race/ethnicity, mother's age, child age, child gender, number of children in household, year 1 marital status, city unemployment rate, the following Census Tract-level characteristics: percentage race/ethnicity, female headed households with children, mean number of persons per household, median gross rent, and median housing value, the respondent's state EITC rate and the maximum TANF benefit amount, and city fixed effects. Bootstrapped standard errors clustered at the city-level are in parentheses. *** p<0.001, ** p<0.01, * p<0.05, + p<0.10

^a Linear probability model

^b Poisson regression

^c OLS regression

Table 8. Effects of Minimum Wage on Child Support

	Informal Support ^a	Formal Child Support ^a
	(1)	(2)
	Year 3	Year 3
Minimum wage (\$2016)	-116.603 (105.427)	-87.350 (50.092)
Lagged outcome in previous wave	0.086 (0.065)	-0.105* (0.047)
Mean Y	502.614	269.829
N	417	486

Source: Fragile Families and Child Well-Being Study. Notes: Sample limited to respondents with high school education or less. Models adjust for outcome variable in all previous waves, baseline marital status, education, race/ethnicity, mother's age, child age, child gender, number of children in household, year 1 marital status, city unemployment rate, the following Census Tract-level characteristics: percentage race/ethnicity, female headed households with children, mean number of persons per household, median gross rent, and median housing value, the respondent's state EITC rate and the maximum TANF benefit amount, and city fixed effects. Bootstrapped standard errors clustered at the city-level are in parentheses. *** p<0.001, ** p<0.01, * p<0.05, + p<0.10

^a OLS regression

Table 9. Effects of Minimum Wage on Child Maltreatment, By Maternal Marital Status

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Year 1		Year 3		Year 5		Year 9	
	Cohabiting	Single	Cohabiting	Single	Cohabiting	Single	Cohabiting	Single
Panel A. Maternal Spanking			-0.074***	-0.071**	-0.270	0.279	0.173	-0.187
			(0.023)	(0.026)	(0.362)	(0.200)	(0.597)	(1.356)
Panel B. Paternal Spanking			-0.070*	-0.072	-0.004	0.005	-0.050	0.005
			(0.031)	(0.062)	(0.031)	(0.050)	(0.041)	(0.052)
Panel C. Physical Aggression					-0.039	-0.060	-0.084	-0.304**
					(0.089)	(0.082)	(0.162)	(0.110)
Panel D. Psychological Aggression					-0.028	0.112+	-0.195*	-0.138*
					(0.049)	(0.058)	(0.083)	(0.055)
Panel E. Physical Neglect					0.006	-0.068+	0.090	0.045
					(0.035)	(0.038)	(0.062)	(0.053)
Panel F. Supervisory/Exposure Neglect					0.010	0.026+	-0.025	-0.005
					(0.018)	(0.015)	(0.028)	(0.026)
Panel G: Maternal Warmth					0.277	0.078	-0.197	0.121
					(0.182)	(0.290)	(0.320)	(0.230)
Panel H: Maternal Activities			-0.075	0.011	0.023	-0.073		
			(0.100)	(0.090)	(0.076)	(0.059)		
Panel I: Paternal Activities			0.102	0.465*	-0.008	-0.289		
			(0.105)	(0.230)	(0.101)	(0.200)		
Panel J: Number of Care Arrangements			0.007	0.129	-0.033	0.043		
			(0.217)	(0.105)	(0.178)	(0.133)		
Panel K: Number of Hours in Childcare Per Week			-0.209	-0.728	-1.728	0.620		
			(1.110)	(1.461)	(1.609)	(1.576)		
Panel L. Income	-978.574	2040.288	-619.284	-558.3261	-2065.10+	115.485	-2745.313+	-675.716
	(940.514)	(1328.475)	(1230.260)	(846.270)	(1158.874)	(1070.611)	(1707.617)	(1494.873)
Panel M. Maternal Employment			-0.009	-0.026	-0.040	-0.032	-0.006	-0.046
			(0.028)	(0.031)	(0.030)	(0.029)	(0.074)	(0.048)
Panel N. Paternal Employment			-0.050*	-0.014	-0.003	0.044	0.034	-0.089
			(0.022)	(0.064)	(0.031)	(0.049)	(0.031)	(0.056)

Panel O: Evening Shift	0.010 (0.034)	-0.015 (0.038)	-0.036 (0.033)	-0.010 (0.033)	0.015 (0.061)	-0.017 (0.036)
Panel P: Weekend Shift	0.022 (0.023)	0.054* (0.026)	-0.061* (0.027)	-0.022 (0.021)	0.022 (0.034)	0.019 (0.022)
Panel Q: Maternal Depression	-0.037 (0.023)	-0.003 (0.026)	-0.024 (0.019)	0.004 (0.026)	-0.028 (0.025)	-0.024 (0.028)
Panel R: Maternal Stress	0.123 (0.183)	0.040 (0.174)	0.340 (0.225)	0.290 (0.296)	0.275 (0.315)	-0.205 (0.214)
Panel S: Externalizing Behaviors			-0.686 (1.098)	1.353 (1.005)	0.112 (0.923)	-0.870+ (0.510)
Panel T: Internalizing Behaviors			-1.295+ (0.741)	1.117+ (0.581)	-0.318 (0.964)	0.016 (0.376)

Source: Fragile Families and Child Well-Being Study. Notes: Sample limited to respondents with high school education or less. Models adjust for outcome variable in all previous waves, baseline marital status, education, race/ethnicity, mother's age, child age, child gender, number of children in household, year 1 marital status, city unemployment rate, the following Census Tract-level characteristics: percentage race/ethnicity, female headed households with children, mean number of persons per household, median gross rent, and median housing value, the respondent's state EITC rate and the maximum TANF benefit amount, and city fixed effects. Bootstrapped standard errors clustered at the city-level are in parentheses. *** p<0.001, ** p<0.01, * p<0.05, + p<0.10

Appendix Table 1. Baseline Covariates and Characteristics of Mothers

	Mean (SD)
Baseline Minimum Wage (2016 dollars)	6.85 (1.07)
<i>Baseline marital status</i>	
Married (0/1)	0.12
Cohabiting (0/1)	0.40
Single (0/1)	0.48
<i>Baseline education</i>	
Less than HS (0/1)	0.51
High school (0/1)	0.49
<i>Race/ethnicity</i>	
White (0/1)	0.13
Black (0/1)	0.57
Hispanic (0/1)	0.28
Other (0/1)	0.02
Mother age (range: 14-45)	23.54 (5.43)
Child age (months) (range: 0-112)	1.28 (3.79)
Child male (0/1)	0.54
Number of children (range: 0-7)	1.42 (1.33)
<i>City and state contextual factors</i>	
City unemployment rate (range: 2.4-5.9)	3.85 (1.00)
State EITC benefit rate (range: 0-0.23)	0.03 (0.06)
State TANF maximum (nominal) (range: 185-746)	351.26 (194.55)
<i>Census tract contextual factors</i>	
Percent white (range: 0-0.99)	0.25 (0.28)
Percent Black (range: 0-0.99)	0.48 (0.37)
Percent Hispanic (range: 0-0.97)	0.21 (0.27)
Percent of households with children under 18 (range: 0-0.82)	0.25 (0.14)
Mean persons per household (range: 1.24-6.35)	2.84 (0.55)
Median monthly gross rent (nominal) (range: 131-2001)	554.15 (193.61)
Median housing value (nominal) (range: 0-1,000,001)	93540.81 (88604.02)
Sample Size	1,417

Appendix Table 2. Mean Outcomes By Child Age

	Mean (SD)				
	Year 1	Year 3	Year 5	Year 9	N
Outcomes					
Maternal spanking (0/1)	0.31	0.55	0.50	0.51	1,347
Paternal spanking (0/1)	0.22	0.43	0.34	0.20	569
Physical aggression (range: 0-24)		6.72 (5.19)	6.09 (5.06)	4.00 (4.52)	
Psychological aggression (range: 0-28)		8.44 (5.03)	9.21 (5.30)	8.45 (5.03)	
Physical neglect (0/1)		0.71	0.81	0.42	993
Supervisory/exposure neglect (0/1)		0.11	0.11	0.16	1,417
Maternal warmth (range: 0-7)		4.46 (0.99)	5.31 (1.78)	4.58 (1.82)	521
Maternal parenting activities (range: 0-7)	4.99 (1.43)	4.86 (1.65)	4.82 (1.44)		1,436
Paternal parenting activities (range: 0-7)	4.43 (1.74)	3.91 (1.77)	3.81 (1.56)		658
Mechanisms					
Number of childcare arrangements (range: 0-12)	1.17 (0.45)	0.79 (0.57)	0.68 (0.69)		
Number of hours in childcare per week (range: 0-80)	11.39 (16.38)	13.01 (17.59)	11.13 (17.40)		
HH Income (range: 0-127,243)	20,749.32 (19,996.99)	22,242 (21,856.42)	24,186 (22,046.44)	29,948.51 (24,841.51)	1,441
Maternal employment (0/1)	0.48	0.52	0.55	0.51	596
Paternal employment (0/1)	0.80	0.82	0.78	0.86	534
Sometimes work evening shift (0/1)	0.14	0.10	0.09	0.09	657
Sometimes work weekend shift (0/1)	0.15	0.11	0.10	0.08	922
Maternal depression (0/1)	0.15	0.22	0.17	0.19	1,435
Maternal parenting stress (range: 0-12)	4.57 (2.57)	4.99 (2.65)	4.65 (2.71)	4.20 (2.79)	1,092
Child externalizing behaviors (range: 0-39)		14.43 (8.01)	14.44 (8.25)	7.05 (7.62)	808
Child internalizing behaviors (range: 0-34)		9.27 (6.11)	6.05 (4.56)	5.06 (5.71)	811
Formal child support (nominal) (range: 0-10200)	110.31 (548.07)	198.36 (503.03)			
Informal child support (nominal) (range: 0-12000)	502.61 (1289.82)	456.55 (1342.77)			