

Nonstandard Work Schedules, Maternal Parenting Stress, and the Moderating Role of  
Child Care

Abby C. Lane

The University of Texas at Austin

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Correspondence concerning this article should be addressed to Abby Lane, Lyndon B. Johnson School of Public Affairs, University of Texas at Austin, Austin, TX, Contact: [abbyclane@utexas.edu](mailto:abbyclane@utexas.edu)

### Abstract

Mothers who work nonstandard schedules may experience lower levels of well-being due to the strain these schedules place on the balance between work and family. Given the importance of social and financial family resources, these challenges may be particularly salient for certain populations of workers, such as low-income mothers, single mothers, and mothers with irregular schedules. This study uses the Fragile Families and Child Wellbeing Study to explore the extent to which there is an association between nonstandard work schedules and maternal parenting stress. Particular attention is paid to variation in the strength of this association by: type of work schedule, mother's relationship status, and family income. In addition, this paper explores whether the type of primary child care arrangement moderates any association between work schedules and parenting stress. Preliminary results of complete case regression models do not suggest evidence of an association between work schedules and maternal parenting stress, evidence of variation by measures of interest, or moderation of child care.

*Keywords:* work and family, maternal employment, maternal well-being, nonstandard work schedules, child care

## Nonstandard Work Schedules, Maternal Parenting Stress, and the Moderating Role of Child Care

For most workers in the United States, a typical or traditional work shift usually takes place between approximately 8 a.m. and 6 p.m., Monday through Friday. However, for millions of workers, their regular or secondary work shifts largely take place outside of this window – during evening, night, rotating, irregular, and/or weekend shifts. These individuals, who regularly work nontraditional or nonstandard schedules, represent about one in five workers in the U.S. economy (Enchautegui, 2013; McMenamain, 2007; Presser, 2003).

Workers with nonstandard schedules are similar in many ways to mainstream workers (Enchautegui, 2013), but are more likely to have lower levels of education and work in lower-wage occupations (Enchautegui, 2013; McMenamain, 2007; Presser, 2003). Furthermore, nonstandard work is also common among parents. A study focused on mothers found that about 11.7 percent of employed mothers with children under age 13 regularly work at nonstandard times, although expanding the definition to include mothers who work some nonstandard hours increases the figure to 57.3 percent (Connelly & Kimmel, 2007). Presser (2003) found that, among low-income, dual-earner households with young children under the age of five, 41.7 percent had at least one spouse working nonstandard hours and 68.3 percent had at least one spouse working nonstandard hours and/or weekend shifts.

As the U.S. economy has increasingly shifted toward a “24/7 economy” (Presser, 2003), in which workers are asked to work nonstandard schedules, it is increasingly important to understand the implications of such schedules, particularly among vulnerable families. Prior research on the impacts of nonstandard work on families has linked nonstandard work to the well-being of parents, although evidence is not always consistent (Li et al., 2014). In an effort to

build on past literature linking work characteristics and maternal well-being, the present study responds to the following research questions. First, is there an association between nonstandard work schedules and maternal parenting stress? Second, does the strength of any association between nonstandard work schedules and maternal parenting stress vary by: type of work schedule, relationship status, or family income? Third, does the type of primary child care arrangement moderate any association between nonstandard work schedules and maternal parenting stress? In order to answer these questions, three sets of analytic models are estimated using Fragile Families and Child Wellbeing Study data.

## **Background**

### **Nonstandard Work Schedules**

About one-fifth of workers regularly work nonstandard schedules (Enchautegui, 2013; McMenamin, 2007; Presser, 2003). However, estimates of nonstandard work vary depending on how work scheduling questions are asked – more flexible, inclusive definitions of work schedules (e.g., not restricting an individual to one type of regular work schedule) have been found to increase the percentage of workers who report nonstandard schedules by 22 percentage points, a figure is approximately double more restrictive estimates of nonstandard work (Dunifon, Kalil, Crosby, Houston Su, & DeLeire, 2013). Other recent estimates suggest that, even if workers do not work the majority of their hours at nonstandard times, many work some of their hours at nontraditional times or occasionally work these shifts. For example, Enchautegui (2013, p. 6) found that “the typical worker spends 14 percent of all his or her working time during nonstandard hours.”

Research is mixed on the likelihood of nonstandard work schedules when comparing individuals with and without children. Presser (2003) finds that the relationship between the

presence of children and likelihood of working nonstandard schedules among individuals is complex, and research by McMenamin (2007) suggests that the prevalence of nonstandard work days among individuals with children appears to be somewhat lower than individuals without children. However, Presser (2003) found that 34.7 percent of dual-earner households with a child under the age of five had at least one spouse worked nonstandard hours, a figure that increases to 59.8 percent when including both nonstandard hours and/or weekend work. These were even higher among low-income families: 36.8 and 63.5 percent, respectively (Presser, 2003). Presser (2003) also found that non-married women with young children under age five were most likely to work nonstandard schedules as compared to other groups of women by marital status, with and without children – 25.3 percent reported working nonstandard hours and 46.0 percent reported working nonstandard work hours and/or weekends. Furthermore, research shows that most workers reporting nonstandard schedules do not tend to work these schedules voluntarily (Enchautegui, Johnson, & Gelatt, 2015; McMenamin, 2007; Presser, 2003), thus it is important to understand the implications of schedules in which workers may be forced to choose these schedules (e.g., rather than face unemployment).

Given that nonstandard work of some type is relatively common among parents, particularly among low-income families and single-mother families, it is worth studying the consequences of such work schedules, particularly for these populations. Prior research on the impacts of nonstandard work on families has linked nonstandard work to the well-being of parents, although evidence is not always consistent (Li et al., 2014). Nonstandard work is associated with less instrumental social support for mothers (i.e., having social networks to borrow money, provide them somewhere to live, or provide emergency child care; Houston Su & Dunifon, 2015) and increased work-family conflict, which has in turn been associated with lower

levels of parent well-being such as psychological distress, lower levels job satisfaction, and lower levels of life satisfaction (Liu, Wang, Keesler, & Schneider, 2011; Tuttle & Garr, 2012). Studies focusing on detailed types of nonstandard work schedules have also found that both night and weekend work are associated with negative measures of maternal wellbeing (Davis et al., 2008; Gassman-Pines, 2011; Kalil, Ziol-Guest, & Levin Epstein, 2010; Presser, 2000).

The current evidence base suggests that there is likely a link between nonstandard work schedules and parent well-being, but research is still limited in important ways. A number of studies have explored the association between nonstandard work schedules and a variety of indicators on maternal well-being, however, the impact of nonstandard schedules on parenting stress, an important factor in maternal and child well-being has not been thoroughly explored. While night work tends to emerge as an important predictor of lower maternal well-being, there is less consistency in the findings of research on other types of nonstandard work schedules. Additionally, many studies utilize samples of married couples, who often work nonstandard schedules in order to “tag-team” parenting and child care responsibilities (Enchautegui et al., 2015, p. 3; Li et al., 2014), which is likely a distinct reality from those of mothers who are not married to or partnered with their child(ren)’s fathers. Many studies also use samples drawn from middle-class families and may miss the implications for low-income families. Certain types of families may be particularly vulnerable to the negative effects of nonstandard work if they have lower levels of social and financial resources as compared to other families. Mothers who work irregular schedules may also be particularly vulnerable due to the changing schedules that may prevent establishing routines in both work and family life.

## Parenting Stress

For many families, and for a variety of different reasons, parenting can be a challenging experience. Parenting stress has been generally defined in the literature as the experience or feeling when a parent perceives that the demands of parenting exceed the resources the parent has available to meet the challenges they face (Abidin, 1992). In general, prior research suggests that parenting stress has generally negative, direct and indirect consequences for parent, family, and child well-being (Critic & Acevedo, 1995). Current models of the determinants of parenting stress, based largely on the work of Belsky (1984) and Abidin (1990; 1992), focus on the influences of a range sociological, environmental, behavioral, and developmental factors, such as parent and child characteristics, social network and support, work, environment, marital relationship, daily hassles, and life events (see also Critic & Acevedo, 1995). The interaction of these different variables influence a parents' assessment of themselves as parents, how well they are equipped to handle these demands, and thus the level of parenting stress a mother experiences (Abidin, 1992). In line with these theories, previous research has identified a range of factors that influence parenting stress. For example, parents' psychological resources and well-being (Critic & Acevedo, 1995); mothers' relationship status, transitions, and quality (Cooper, McLanahan, Meadows, Brooks-Gunn, & Johnson, 2009); material hardship and income (Gershoff, Aber, Raver, & Lennon, 2007); social support (Jackson, 2000), and child temperament (McBride, Schoppe, & Rane, 2002) are all associated with parenting stress.

Both parent and child characteristics have been explored more frequently in previous literature, however, less often examined are parents' work characteristics, which may influence parenting stress. One study of employment and parenting stress found that unemployment and workplace inflexibility were associated with increased parenting stress, but did not find evidence

of a link between parenting stress and nonstandard work schedules (Nomaguchi & Johnson, 2016). However, this study and others generally focus on the role of nonstandard schedules generally, without focus on the potential variance of influence different types of work schedules may have on parents' stress.

### **Theoretical Linkage between Nonstandard Work Schedules and Parenting Stress**

In addition to the importance of work-related characteristics as determinants of parenting stress, this study also draws on theory from the work-family interface, specifically, the idea of work-family conflict. The theory of role and inter-role conflict (Greenhaus & Beutell, 1985) suggests that individuals have a number of different roles that they hold (in this case, work and family roles), each with their own set of pressures, which may come into conflict. The present study is concerned with mutually incompatible pressures between work and family domains, specifically how the work role may negatively impact the family role. Of primary interest in this paper is how the incompatibility between roles may lead to parenting stress.

Two forms of work-family conflict identified by Greenhaus and Beutell (1985) are relevant to the context of nonstandard work schedules. First, time-based conflict is salient if nonstandard work schedules interfere with the typical patterns and organization of family life. In this case, time spent at work, say in the evenings or weekends, conflicts with when children and romantic partners are typically home from school/daycare and work, as well as usual family routines like mealtimes and bedtime. This may also be the case if a parent needs to work nights, therefore sleep during the day, limiting waking hours when family interaction can occur. Similarly, irregular schedules may make the establishment of routines difficult.

Second, strain-based work-family conflict occurs when "strain produced by one role makes it difficult to fulfill the requirements of another role" (Greenhaus & Beutell, 1985, p. 78).

This may occur when one's role as a worker causes strain that spills over into family life. For example, nonstandard work schedules have been linked to a greater number of daily stressors/increased stress, higher perceived time pressure, and fatigue, which in turn could be linked to negative maternal well-being (see e.g., Davis, Goodman, Pirretti, & Almeida, 2008; Lozano, Hamplová, & Le Bourdais, 2016; Presser, 2003). Strain-based work-family conflict may be further exacerbated by a lack of work supports available to workers with nonstandard schedules, such as child care.

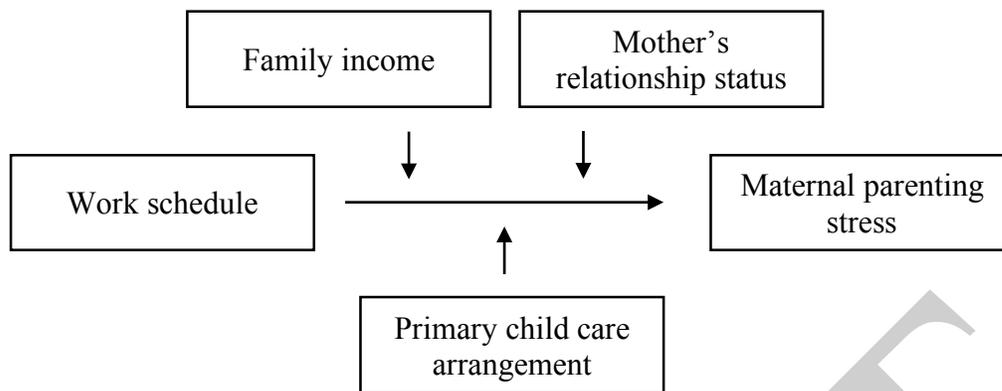
An additional complication may arise from child care arrangements of families with nonstandard schedules. Although child care is often thought of primarily as a care and educational environment for children, child care is also a critical work support for parents (The Center for Law and Social Policy, 2015). However, researchers and policy makers have identified that there is often a "mismatch between the demands of the low-wage job market...and the licensed child care market that mostly provides care during traditional work hours" (Adams & Katz, 2015, p. 14). Child care centers often don't fit the needs of parents working nonstandard hours: they often aren't open at the right times and offer much more limited flexibility than family, friend, or neighbor providers (Lowe & Weisner, 2006; Scott & Abelson, 2016; Thompson, 2000). For example, Han (2004, pp. 250-251) found that when mothers changed work schedules within the first three years of their child's life, their child care arrangement often changed too: "a higher percentage of those who switched to working nonstandard hours changed their care arrangement to paternal care, and a higher percentage of those who switched to working standard hours changed their arrangements to center care." Thus, research has found that families often rely on informal care providers, often care by a relative (Enchautegui et al., 2015; Han, 2004; Henly & Lambert, 2005; Kimmel & Powell, 2006; Laughlin, 2013; Matthews,

Ben-Ishai, & Levin-Epstein, 2014; Scott & Abelson, 2016). Challenges stemming from balancing child care and work may create additional strain-based consequences for families working nonstandard schedules.

Time- and strain-based work-family conflict may be more severe for some groups of individuals than others. For example, individuals working nonstandard schedules are often working in low-paying jobs (Enchautegui, 2013; Presser, 2003). Low-pay may create more pressure to work additional hours, a time-based source of work-family conflict. Strain-based conflict may result from the stress of low-paying jobs, as families may be less equipped to handle emergency or unexpected expenses or manage routine expenses if income fluctuates week to week. Family structure also plays an important role in work-family conflict. Two-parent households likely have greater financial and social resources with which to handle work-family conflict. Parents without a partner in the home may need to rely more on themselves or other relatives and friends, to the extent that they are available. This may result in both time- and strain-based conflict.

### **The Present Study**

The purpose of the present study is to investigate the association between work schedules and maternal parenting stress, highlighting the importance of nonstandard work schedules; variation by type of nonstandard work schedule, family income, and the mother's relationship status; and moderation by type of primary child care arrangement. The theories and evidence from past research as described above, combine to form the basis of the conceptual model of this paper (see [Figure 1](#)), tested through quantitative analysis of Fragile Families and Child Wellbeing Study data.



*Figure 1. Conceptual Model*

The study addresses three research questions: (a) Is there an association between nonstandard work schedules and maternal parenting stress?; (b) Does the strength of any association between nonstandard work schedules and maternal parenting stress vary by: type of work schedule, relationship status, or family income?; (c) Does the type of primary child care arrangement moderate any association between nonstandard work schedules and maternal parenting stress?

## Method

### Sample

Data for this study come from the Fragile Families and Child Wellbeing Study (FFCWS), a longitudinal, birth cohort study. The full baseline FFCWS sample included 4,898 families initially surveyed at the birth of the focal child of the study between 1998 and 2000 in 20 U.S. cities with populations of 200,000 or more. The FFCWS oversampled unmarried-parent families and is representative of all non-marital births in large U.S. cities using weights provided within the study. Follow-up interviews of mothers were conducted when the focal child was approximately one, three, five, nine, and fifteen years old (for additional details on study design, see Reichman, Teitler, & McLanahan, 2001). The analytic sample of this study uses data from

the first three waves of the survey, with emphasis on the third wave of the study (three-year follow up survey). Data from wave three are used for analysis because more mothers report current employment and use non-parental care and parenting stress is expected to be higher than at other ages and developmental stages of the child (Nomaguchi & Johnson, 2016). In addition, using this wave allows the researcher to include additional controls, including a lagged dependent variable in some models.

Starting with the original sample of mothers interviewed at the baseline, I excluded mothers who did not participate in the third wave of the study ( $n = 667$ ), who reported living with the focal child less than half of the time at wave three (an additional 64 mothers), and who reported “other” for their primary child care arrangement at wave three (an additional 25 mothers). Mothers were also excluded if they lacked information for the dependent variable (an additional 31 mothers). In order to use weights in analyses, the sample was further restricted to exclude mothers not included in the city sample (an additional 91 mothers). After mothers meeting one or more of these criteria were excluded, this resulted in a final sample size of 4,020 mothers (sample 1). A second sample was used for some analyses, which further excluded mothers not reporting current employment (an additional 1,727 mothers). The final sample for these analyses included 2,293 mothers (sample 2).

**Sample 1.** Of the mothers included in the final sample ( $n = 4,020$ ), 3,020 (75%) had complete data for all variables included in analyses. The amount of missing data ranged from 0% to 14% missing on study measures. The vast majority of missing data were due to survey design; some questions used for study measures were not asked of the two-cities sample. In particular, the two-cities sample were not asked work schedule (beyond employment status) and economic hardship data. Results presented in this draft of the paper use complete cases from sample 1 only.

**Sample 2.** Of the mothers included in the final sample ( $n = 2,293$ ), 1,753 (76%) had complete data for all variables included in analyses. The amount of missing data ranged from 0% to 14% missing on study measures. Similar to sample 1, the vast majority of missing observations were due the difference in survey questionnaires for the two-cities sample. Results presented in this draft of the paper use complete cases from sample 2 only.

### Measures

**Outcome: Maternal parenting stress.** The dependent variable, maternal parenting stress, was measured at wave three of the FFCWS. Mothers reported their level of agreement (1 = strongly agree to 4 = strongly disagree) with the following four statements: (1) “Being a parent is harder than I thought it would be;” (2) “I feel trapped by my responsibilities as a parent;” (3) “I find that taking care of my child(ren) is much more work than pleasure;” and (4) “I often feel tired, worn out, or exhausted from raising a family.”<sup>12</sup> Mothers’ responses were reverse coded such that higher values indicated higher reported levels of parenting stress. The average of mothers’ responses was used as the final scale (wave 3,  $\alpha = .63$  both samples).

**Predictor: Work schedules.** The predictor in the analyses is the mother’s work schedule, collected at wave three. In the FFCWS, mothers reporting ever working two weeks in a row or more were asked, “(At your primary job,) (Do/Did) you regularly work...” and selected among the following options: “Weekdays,” “Evenings (6 pm-11pm),” “Nights (11 pm-7am),”

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<sup>1</sup> The four statements comprising the parenting stress measure used in the FFCWS survey were taken by survey authors from the Child Development Supplement of the Panel Study of Income Dynamics. The original full scale “measures the amount of parenting stress brought on by changes in employment, income, or other factors in a parent’s life” (Center for Research on Child Wellbeing & Columbia Population Research Center, 2006). Original scale citation: Abidin, R. (1995). *Parent Stress Inventory, 3<sup>rd</sup> Edition*. Odessa, FL: Psychological Assessment Resources.

<sup>2</sup> Mothers must have responded to all four items to be included in the study. Not including mothers who did not participate in wave three of the study or who did not live with the focal child at least half of the time, only 31 mothers were missing data on this variable. These mothers were excluded due to nonresponse to at least one item of the scale. Among these mothers, 27 responded to 3 of 4 items.

“Weekends,” and/or “Different times each week?” Mothers were able to select more than one response; therefore, these categories are not mutually exclusive. Work schedule information was only used for mothers who reported being employed at the time of the study.

In the first set of analyses, *nonstandard work schedule* is a dichotomous variable indicating a mother reported working any nonstandard schedule, regardless of whether she also reported working a standard, weekday schedule (0 = standard schedule only or not employed, 1 = any nonstandard schedule). For the second set of analyses, a set of dummy variables was created to disaggregate the work schedule variable. These variables are not mutually exclusive and indicate a positive response to working the following schedules: weekday, evening, night, weekend, and different times each week. Using categories that are not mutually exclusive allows the analysis to capture the actual work experience of mothers in the survey, which may sometimes include complex schedules not captured by using mutually exclusive indicators.<sup>3</sup> The second definition excludes mothers who do not report current employment.

**Key independent variables.** A dichotomous variable was created to indicate whether or not a family is characterized as *low income*, defined as household income less than 200 percent of the federal poverty line (0 = not low income, 1 = low income).<sup>4</sup> Second, *mother’s relationship status* at the time of the interview was defined by a dichotomous variable indicating whether or not the mother’s romantic partner (the biological father or a new partner) lives with her (0 = mother married/cohabiting with romantic partner, 1 = mother single/not cohabiting with romantic partner). Third, *primary child care arrangement* is a series of indicator variables, including the

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<sup>3</sup> In order to test for multicollinearity, variance inflation factors (VIF) were checked following regression models. Using the standard of 10, the VIF on all variables were fine.

<sup>4</sup> Note that this variable relies on constructed variables by the Fragile Families team. These variables include imputed income for some families. For more details, see the Guide to the Public Use Files, Baseline – Year 5 (<https://fragilefamilies.princeton.edu/documentation/general>).

variables for the following categories: parent care (mother and live-in father, reference category), relative care;<sup>5</sup> non-relative, family day care; and day care or Head Start. These variables were measured at wave three.

**Control variables.** Several control variables are included in analyses using data from wave three, unless otherwise noted. These variables include mother, child, and family characteristics that may be associated either or both maternal work schedules and parenting stress and controlling for them is an attempt to reduce bias in results. *Current employment status* is represented by indicator variables for full-time, current employment (currently working 35 hours/week or more) and part-time, current employment (currently working between 1 and 34 hours/week). Mothers who are not employed are the reference group. *Mother's race and ethnicity* was coded as a series of indicator variables representing non-Hispanic White (reference category), non-Hispanic Black, Hispanic, and "other" based on mothers' responses at the baseline survey. *Mother's educational attainment* was measured by dummy variables indicating less than a high school diploma, high school diploma or an equivalent degree, some college or technical/vocational program, and a college degree or higher (reference category).

The *number of children in the household* is coded as a continuous variable. Focal child age is measured in years. A dummy variable was used to indicate whether or not *grandparents were present in the household* (0 = no grandparent living in the household, 1 = grandmother and/or grandfather living in the household). Mother's mental health was measured by *two indicator variables indicating probable cases of major depression and generalized anxiety disorder* (0 = non-probable case, 1 = probable case).<sup>6</sup> *Mother's health* and *child's health* are both

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<sup>5</sup> Relative care is a combination of multiple response categories in the original FFCWS study, including: father (not live-in), mother's partner, child's sibling, grandparents, other relative, mother's partner's relative, father's partner.

<sup>6</sup> Both measures are derived from the Composite International Diagnostic Interview – Short Form (CIDI-SF). This study uses variables identifying probable cases created by the FFCWS staff. The indicator for depression uses the

categorical variables based on mothers' report of their and their child's general health, (1 = poor to 5 = excellent). *Mother's perceived instrumental support* is included as a scale of three items (range 0-3). This scale is based on a mother's indication of whether or not she can count on someone in the next year to: (a) loan her \$200, (b) provide her a place to live, and (c) help with emergency child care (0 = no, 1 = yes,  $\alpha = .73$  sample 1,  $\alpha = .70$  sample 2).

The *coparenting relationship* between the mother and biological father is an average of mothers' responses to six questions: (a) "When (father) is with (child), she or he acts like the father you want for your child;" (b) "You can trust (father) to take good care of (child);" (c) "She or he respects the schedules and rules you make for (child);" (d) "She or he supports you in the way you want to raise (child);" (e) "You and (mother/father) talk about problems that come up with raising (child);" and (f) "You can count on (mother/father) for help when you need someone to look after (child) for a few hours" (reverse coded, 1 = never or rarely true to 3 = always true,  $\alpha = .93$  both samples). Mother's reporting any of the following were coded as 1: the father was deceased, unknown, or did not know about the child; the biological parents of the child never had any type of relationship, or the father has no contact with the child. The parents' relationship quality is a categorical variable based on mothers' report of how good their relationship with the father of the child is, (1 = poor to 5 = excellent). An indicator of whether or not the mother had experienced a *relationship transition* with a coresidential partner between the birth of the child and year three was included.<sup>7</sup>

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conservative scoring. Original source for the CIDI-SF: Kessler, R.C., Andrews, G., Mroczek, D., Ustun, T.B., & Wittchen, H.U. (1998). The World Health Organization Composite International Diagnostic Interview Short-Form (CIDI-SF). *International Journal of Methods in Psychiatric Research*, 7, 171-185.

<sup>7</sup> At baseline, only the relationship with the biological father was reported; there is no information on a different romantic partner other than the biological father. Mothers were considered to be residing with a partner if they reported cohabiting with that partner at least most of the time. Transitions were counted as changed between single (not residing with a romantic partner), married/cohabiting with the biological father, and married/cohabiting with a new current partner.

Following the example in Carlson, Pilkauskas, McLanahan, & Brooks-Gunn (2011), *mother-child engagement* was measured by the average number of days the mother reported engaging in the following five activities with their child: (a) sang songs or nursery rhymes, (b) played imaginary games (c) read stories, (d) tell stories, and (e) play inside with toys (range 0 to 7 days,  $\alpha = .73$  sample 1,  $\alpha = .74$  sample 2). In models with a lagged dependent variable, previously reported parenting stress (wave 2,  $\alpha = .61$  both samples) was also included, measured the same as described above. An indicator of *economic hardship* is coded 1 if mother's reported any of the following in the last 12 months because there wasn't enough money: received free food or meals; did not pay the full amount of rent or mortgage payments; were evicted from home or apartment for not paying the bills; did not pay the full amount of a gas, oil, or electricity bill; borrowed money from friends or family to help pay the bills; moved in with other people because of financial problems; stayed at a shelter or a place not meant for regular housing, even for one night; a household member did not go to the doctor or hospital when needed because of the cost; cut back on buying clothes for yourself; or worked overtime or taken a second job.

### **Analytic Plan**

First, ordinary least squares (OLS) regression models were used to estimate the concurrent association between maternal work schedules and parenting stress, both measured at wave three. These models assume that mother's parenting stress levels respond quickly to the current context (i.e., current work schedule).<sup>8</sup> Two sets of four models each were estimated using the two definitions of work schedules to answer the research questions. City sampling weights were used

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<sup>8</sup> Although it is possible that mother's parenting stress may respond to her work schedule less immediately, the FFCWS does not allow an obvious way to test this. Testing the association of work schedule from one wave to parenting stress in the next wave would require a two-year time lag, in which many other things could happen in a mother's life that influences both work schedule and parenting stress. Therefore, I do not test this type of model in this paper. Instead, these models assume the relationship is closely time dependent.

in each regression model, allowing generalization to births in mothers' particular cities between 1998-2000, depending on the year in which the baseline data collection took place for that city.<sup>9</sup>

The first set of models, estimated using sample 1, is shown below:

$$Y_{i3} = \alpha + \beta_1 \text{WORKSCHED}_{i3} + \gamma_{1-23} \mathbf{Z}_i + e_{i3} \quad (1a)$$

$$Y_{i3} = \alpha + \beta_1 \text{WORKSCHED}_{i3} + \beta_2 \text{RELATIONSHIP}_{i3} + \beta_4 \text{RELATIONSHIP}_{i3} * \text{WORKSCHED}_{i3} + \gamma_{1-22} \mathbf{Z}_i + e_{i3} \quad (1b)$$

$$Y_{i3} = \alpha + \beta_1 \text{WORKSCHED}_{i3} + \beta_2 \text{INCOME}_{i3} + \beta_3 \text{INCOME}_{i3} * \text{WORKSCHED}_{i3} + \gamma_{1-22} \mathbf{Z}_i + e_{i3} \quad (1c)$$

$$Y_{i3} = \alpha + \beta_1 \text{WORKSCHED}_{i3} + \beta_2 \text{CARE}_{i3} + \beta_3 \text{CARE}_{i3} * \text{WORKSCHED}_{i3} + \gamma_{1-23} \mathbf{Z}_i + e_{i3} \quad (1d)$$

In equation 1a,  $Y_{i3}$  represents the dependent variable, parenting stress for mother  $i$  at wave three (three-year follow up). The individual intercept is represented by  $\alpha$ . The variable  $\text{WORKSCHED}_{i3}$  represents mother's report of any nonstandard work schedule at wave three.  $\mathbf{Z}_i$  represents a vector of control variables, measured for each individual  $i$  at wave three (unless otherwise noted above).

Models 1b – 1d extend the base model further, by adding interaction variables. Model 1b adds the mother's relationship status as a key predictor and interacts this with work schedule in order to test variation in the association between work schedules and parenting stress by this measure. Model 1c adds family income in similar fashion. Model 1d tests moderation of the association between work schedules and parenting stress by primary child care arrangement. The vector  $\text{CARE}_{i3}$  represents a series of dummy variables for primary child care arrangement (relative care; non-relative, family day care; and day care or Head Start), with parent care serving as the reference category. Interaction terms for primary child care type and work schedule are also included in this model.

<sup>9</sup> Replicate weights (provided by FFCWS researchers) are used because data are drawn from public-use.

The base model for the second set of models, estimated on sample 2 (employed mothers only), uses the more detailed definition of work schedule:

$$Y_{i3} = \alpha + \beta_{1-5}\mathbf{WORKSCHED}_{i3} + \gamma_{1-23}\mathbf{Z}_i + e_{i3} \quad (2a)$$

In these models, the vector  $\mathbf{WORKSCHED}_{i3}$  represents a series of five work schedule variables capturing mothers' work standard schedules, as well as work during evenings, nights, weekends, and at different times. The rest of the variables in the subsequent models remain the same as in models 1b-1d, with the exception of the definition of work schedule variables and related interaction terms.

In addition to the OLS models described above, I estimated lagged dependent variable models. These models may improve on earlier models if, for example, mothers select into nonstandard work schedules based on previous parenting stress. These models also allow the researcher to account for persistence in time in parenting stress. However, these models may be problematic if the prior measure of parenting stress is correlated with unobserved characteristics of the mother.

$$Y_{i3} = \alpha + \beta_{1-2}\mathbf{WORKSCHED}_{i3} + \beta_3 Y_{i1} + \gamma_{1-23}\mathbf{Z}_i + e_{i3} \quad (3)$$

$$Y_{i3} = \alpha + \beta_{1-5}\mathbf{WORKSCHED}_{i3} + \beta_6 Y_{i1} + \gamma_{1-23}\mathbf{Z}_i + e_{i3} \quad (4)$$

Models 3 and 4 are identical in form to models 1a and 2a with the exception of the addition of  $Y_{i1}$ , the lagged dependent variable, parenting stress measured at wave two.

## Results

Descriptive statistics for variables in the analyses are presented in Table 1. Statistics in this table were estimated using city survey weights. In sample 1, one-quarter (25.07%) of the sample (including those who are not employed) reported working any nonstandard schedule. A large portion of the sample did not report current employment (47.37%) and 12.89% and 39.74% reported current part-time and full-time employment, respectively. More than half (56.48%) of

sample 1 was low-income and nearly one-quarter (23.74%) were not married or cohabiting with a partner. Over two-fifths of sample 1 relied primarily on parent care of their children (41.19%), while day care or Head Start (26.96%) and relative care (19.26%) were most common following that. Average parenting stress was somewhat higher in sample 1 (mean = 2.28) as compared to sample 2 (mean = 2.23).

Because sample 2 is limited to employed mothers, sample characteristics on measures of interest differ somewhat from sample 1. Almost all mothers in sample 2 reported working a weekday schedule. Among nonstandard work schedules, weekend (37.93%), evening (25.37%), and irregular work (22.32%) were most common. Most mothers were employed full-time (75.50%). Among mothers in sample 2, 42.36% were low-income and 25.69% were not married or cohabiting with a romantic partner. Primary child care arrangements of mothers in sample 2 appear somewhat different than sample 1, primarily due to fewer mothers relying on parent care. Among mothers in sample 2, day care or Head Start was most common (34.08%), followed by relative care (27.35%), parent care (19.78%), and non-relative, family day care (18.79%).

[Insert Table 1 about here]

Multivariate results for models 1a-1d and 3 can be found in Table 2. Although all models test the association of nonstandard work schedules and maternal parenting stress, Model 1a presents a baseline estimate of this association. Weighted complete case regression model estimates do not suggest a statistically significant association between these two variables. Furthermore, the association is not in the expected direction. Models 1b and 1c test variation by income and the mother's relationship status. Not surprisingly given the lack of a significant association for the main predictor, there is no evidence that being low-income or not cohabiting with/being married to a romantic partner are associated with maternal parenting stress, either

alone or in interaction with nonstandard work schedules. Similarly, model 1d tests moderation by primary child care arrangement, but no significant association was found with maternal parenting stress for child care arrangements or their interactions with nonstandard work schedules.

Model 3, a variant of the base model including a lagged dependent variable from wave two, does suggest that maternal parenting stress measured when the focal child was about one year old is positively and statistically significantly ( $b = 0.417, p < .001$ ) associated with maternal parenting stress at wave three, when the child was approximately three years old. However, no other predictors of interest are statistically significant in these models. In all of the four main models, several control variables were negatively and statistically significantly associated with parenting stress.<sup>10</sup> Mothers who had a high school diploma or equivalent ( $p < .05$ ) and completed some college or technical school ( $p < .05$ ) had lower average maternal parenting stress than mothers who had a college degree or higher. Higher perceived instrumental support ( $p < .05$ ), better reports of the child's general health ( $p < .01$ ), and greater mother-child engagement ( $p < .05$ ) were all associated with lower levels of maternal parenting stress, as expected based on previous theory and research.

[Insert Table 2 about here]

Multivariate results for models 2a-2d and 4 can be found in Table 3. These models are similar to Models 1a-1d and 3, but estimate regression models using detailed work schedule variables. Generally, the results from these models mirror those in models 1a-1d. None of the key predictors are statistically significant. There is no evidence of an association between work schedules of any type (weekday, evening, night, weekend, irregular) and maternal parenting stress. Similar to the first set of models, coefficients for variables of interest were also generally

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<sup>10</sup> P-values reported for model 1a. Between models, the level of statistical significance only differed for the child's general health in Model 1d ( $p < .05$ ) relative to other models ( $p < .01$ ).

not in the expected direction (most were negative), with the exception of weekend work schedules. Also, similar to the first set of models, none of the interactions between work schedules and low-income status, mothers' relationship status, or primary child care arrangements were statistically significant. Model 4, a variation on the base model, did show a positive, statistically significant association between previous parenting stress (wave one) and maternal parenting stress at wave two ( $b = 0.476, p < .001$ ). Similar to the first set of models, some college or technical school ( $p < .05$ ) and perceived instrumental support ( $p < .05$ ) were negatively and statistically significantly associated with parenting stress, however this was not consistent across all models in this set.<sup>11</sup>

[Insert Table 3 about here]

### Discussion

Given the prevalence of nonstandard work among parents, particularly among low-income families and single-mother families, this paper aimed to study the consequences of such work schedules. In particular, this study aimed to examine a measure of maternal wellbeing that was less examined in previous research, disaggregate the importance of different types of nonstandard work schedules, examine results for vulnerable populations, and examine the potential role of child care arrangements in moderating the influence of work schedules on parenting stress. Previous research has linked nonstandard work schedules to negative outcomes on measures of maternal wellbeing (e.g., see Davis et al., 2008; Gassman-Pines, 2011; Houston Su & Dunifon, 2015; Kalil, Ziol-Guest, & Levin Epstein, 2010; Li et al., 2014; Liu, Wang, Keesler, & Schneider, 2011; Presser, 2000; Tuttle & Garr, 2012). Based on the existing body of research and theories of parenting stress and interrole conflict, I expected to find a negative

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<sup>11</sup> P-values reported for model 2a. Some college or technical school was statistically significant for models 2a and 2b; perceived instrumental support was statistically significant in models 2a, 2c, and 2d.

association between mothers' nonstandard work schedules and parenting stress. However, results from the analyses in this study do not align with past research and suggest that nonstandard work schedules may not be an important factor in determining parenting stress. Although this is contrary to my main hypothesis, it is possible that other work-related factors are more important in determining parenting stress (e.g., see Nomaguchi & Johnson, 2016) or that nonstandard work schedules are associated with different indicators of maternal wellbeing, rather than parenting stress, as previous research suggests.

The present study has limitations that future studies should address. First, many control variables are included in the model to prevent bias from selection, however one cannot be certain unobserved confounders are not causing bias. It is also possible that, despite attempts to control for selection, work schedules, parenting stress, and child care arrangements are partially endogenous. Second, although I expect it is unlikely, it is possible that there is a reverse causality problem – some parents may choose work schedules due to their perceived parenting stress based on home life, rather than work schedules influencing the amount of stress they experience as tested in this paper. This cannot be examined in the current, cross-sectional study and I believe the length of time between FFCWS waves (two years) is too long to test this longitudinally. Third, although this paper includes mothers who are not working, it is not possible to tell if any of these mothers dropped out of the labor force because of the consequences of nonstandard work schedules. For example, a mother may have previously held a job with nonstandard work hours, but left the labor force because the stress of balancing work and home was overwhelming. Unfortunately, this potential relationship cannot be identified within this paper. Finally, there are limitations of the FFCWS data; the data are now somewhat dated and do not allow estimates of causality in the relationships of interest. More recent, longitudinal datasets could allow for more

relevant and updated analyses of relationships of interest if they were conducted and made available to researchers.

The present analysis examined the role of nonstandard work schedules in influencing maternal parenting stress. The results of this study did not provide evidence in support of the hypothesis that nonstandard work schedules, particularly night and irregular work schedules, are positively associated with maternal parenting stress. Despite these results, future research is warranted in order to better understand the implications of nonstandard work schedules for mothers' wellbeing, particularly those who may lack social and financial resources.

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Key Variables	Sample 1 (n = 3,020)		Sample 2 (n = 1,753)	
	% or M	SD	% or M	SD
Parenting stress at wave 3 (range 1-4)	2.28	0.64	2.23	0.63
Nonstandard work schedule				
Any nonstandard schedule	25.07%		-	
Weekdays	-		97.39%	
Evenings	-		25.37%	
Nights	-		13.70%	
Weekends	-		37.93%	
Different times each week	-		22.32%	
Income status (% low-income household, < 200% FPL)	56.48%		42.36%	
Relationship status (% not married/cohabiting with partner)	23.74%		25.69%	
Primary child care arrangement				
Parent	41.19%		19.78%	
Relative care	19.26%		27.35%	
Non-relative, family day care	12.59%		18.79%	
Day care or Head Start	26.96%		34.08%	

Note. Percentages may not sum to 100 due to rounding. Descriptive statistics use replicate city weights.

<b>Table 1.</b> Descriptive Statistics, Control Variables ( <i>Continued</i> )	<u>Sample 1 (n = 3,020)</u>		<u>Sample 2 (n = 1,753)</u>	
	% or M	SD	% or M	SD
Mother's current employment status				
Not employed	47.37%		-	
Employed, part-time (1-34 hours/week)	12.89%		24.50%	
Employed, full-time (35 hours +/week)	39.74%		75.50%	
Mother's age	29.85	6.16	30.35	6.34
Mother's race/ethnicity				
White, non-Hispanic	30.37%		28.82%	
Black non-Hispanic	32.88%		35.80%	
Hispanic	30.22%		29.08%	
Other	6.53%		6.30%	
Mother's educational attainment				
Less than high school	24.70%		17.88%	
High school diploma or equivalent	31.88%		28.52%	
Some college or technical program	22.88%		30.39%	
College degree or higher	20.54%		23.22%	
Number of children in the household	2.30	1.28	2.2	1.16
Focal child age (years)	2.90	0.18	2.92	0.2
Presence of grandparent in the household	13.32%		14.08%	
Mother depression	11.06%		8.76%	
Mother generalized anxiety	3.50%		2.87%	
Perceived instrumental support (range 0-3)	2.57	0.86	2.61	0.83
Focal child's general health (range 1-5)	4.42	0.82	4.52	0.73
Mother's general health (range 1-5)	3.85	1.02	3.91	1.03
Biological parents' relationship quality (range 1-5)	3.53	1.37	3.41	1.36
Quality of coparenting relationship (range 1-3)	2.54	0.62	2.51	0.62
Mother-child engagement (range 0-7)	5.09	1.56	5.04	1.58
Reported at least one economic hardship in past 12 months	60.25%		64.24%	
Experienced at least one coresidential relationship transition since child's birth	16.05%		17.77%	
Parenting stress at wave 2 (range 1-4)*	2.17	0.65	2.15	0.62

\*Sample 1 n = 3,000, sample 2 n = 1,748 (some mothers included in main analyses were missing this data for wave two).

Note. Percentages may not sum to 100 due to rounding. Descriptive statistics use replicate city weights.

**Table 2. Weighted Complete Case OLS Regression Results for Sample 1 (n = 3,020)**

	<u>Model 1a</u>		<u>Model 1b</u>		<u>Model 1c</u>		<u>Model 1d</u>		<u>Model 3</u>	
	Coef.	Std. err.	Coef.	Std. err.						
Any nonstandard work schedule reported	-0.063	0.098	-0.059	0.106	0.042	0.116	-0.221	0.205	-0.041	0.088
Low-income (<200% FPL)	-0.013	0.072	-0.012	0.072	0.058	0.060	0.021	0.061	0.007	0.074
Mother single or not cohabiting w/romantic partner	-0.061	0.065	-0.056	0.081	-0.059	0.065	-0.080	0.066	-0.096	0.056
<i>Relationship status and income interactions</i>										
Single/not cohabiting * Any nonstandard			-0.014	0.099						
Low-income * Any nonstandard					-0.231	0.161				
Primary child care arrangement (Reference: parent care)										
Relative care							0.092	0.115		
Non-relative, family day care							0.255	0.132		
Daycare/Head Start							0.106	0.144		
<i>Child care interactions</i>										
Relative care * Any nonstandard							0.242	0.242		
Non-relative, family day care * Any nonstandard							0.357	0.367		
Daycare/Head Start * Any nonstandard							0.184	0.233		
Average parenting stress (wave 2)									0.417***	0.033

\* p&lt;0.05, \*\* p&lt;0.01, \*\*\* p&lt;0.001

Sample for model 3: n = 3,000 (some mothers included in models 1a – 1d were lacking parenting stress information at wave 2).

Models use replicate city weights.

**Table 2. Weighted Complete Case OLS Regression Results for Sample 1 (n = 3,020) (Continued)**

	<u>Model 1a</u>		<u>Model 1b</u>		<u>Model 1c</u>		<u>Model 1d</u>		<u>Model 3</u>	
	Coef.	Std. err.	Coef.	Std. err.						
<i>Controls</i>										
Current employment status										
Employed, part-time	0.063	0.100	0.063	0.099	0.083	0.091	0.038	0.067	0.011	0.095
Employed, full-time	-0.095	0.075	-0.095	0.075	-0.070	0.076	-0.169	0.095	-0.069	0.076
Mother's age	0.008*	0.003	0.008*	0.003	0.008*	0.003	0.007*	0.003	0.009	0.004
Mother's race/ethnicity (Reference: Non-Hispanic, White)										
Non-Hispanic Black	0.050	0.096	0.049	0.097	0.050	0.094	0.056	0.091	0.023	0.090
Hispanic	-0.102	0.082	-0.102	0.083	-0.105	0.083	-0.089	0.089	-0.093	0.069
Other	0.225	0.204	0.225	0.204	0.229	0.193	0.234	0.210	0.243	0.249
Mother's educational attainment (Reference: College degree or more)										
Less than high school	-0.076	0.100	-0.076	0.100	-0.089	0.098	-0.053	0.108	-0.068	0.104
High school diploma or equivalent	-0.166*	0.057	-0.166*	0.056	-0.176*	0.058	-0.149*	0.047	-0.093	0.073
Some college or technical school	-0.246*	0.076	-0.246*	0.076	-0.253*	0.079	-0.204*	0.064	-0.196*	0.076
Number of children in the household	-0.003	0.015	-0.003	0.015	-0.002	0.014	0.006	0.013	-0.008	0.031
Age of focal child at time of interview	-0.110	0.192	-0.109	0.193	-0.120	0.182	-0.066	0.189	-0.106	0.196
Presence of grandparent in the household	-0.088	0.133	-0.088	0.133	-0.086	0.130	-0.087	0.121	-0.025	0.122
Mother's depression	0.170	0.106	0.170	0.106	0.183	0.098	0.194	0.091	0.148	0.080
Mother's generalized anxiety	0.249	0.151	0.249	0.151	0.233	0.147	0.241	0.150	0.193	0.120
Perceived instrumental support	-0.081*	0.034	-0.080*	0.035	-0.082*	0.034	-0.078*	0.034	-0.070	0.032
Child's general health	-0.100**	0.029	-0.100**	0.030	-0.101**	0.029	-0.103*	0.035	-0.064*	0.020
Mother's general health	-0.001	0.020	-0.001	0.020	0.002	0.020	-0.003	0.020	0.000	0.024
Relationship quality with biological father of the focal child	0.054	0.027	0.054	0.028	0.054	0.027	0.056*	0.024	0.040	0.020
Coparenting relationship with biological father of focal child	-0.188	0.087	-0.188	0.088	-0.190	0.087	-0.187	0.085	-0.154*	0.059
Experienced at least one coresidential relationship transition	-0.015	0.045	-0.015	0.047	-0.004	0.048	-0.013	0.050	0.019	0.054
Mother-child engagement	-0.048*	0.015	-0.048*	0.015	-0.045*	0.015	-0.049*	0.017	-0.020	0.011
Reported at least one economic hardship in last 12 months	0.122	0.079	0.122	0.079	0.117	0.078	0.103	0.071	0.102	0.084
Constant	3.649***	0.506	3.645***	0.514	3.625***	0.471	3.467***	0.517	2.314**	0.544
R-squared	0.157		0.157		0.163		0.186		0.322	

\* p&lt;0.05, \*\* p&lt;0.01, \*\*\* p&lt;0.001

Sample for model 3: n = 3,000 (some mothers included in models 1a – 1d were lacking parenting stress information at wave 2).

Models use replicate city weights.

**Table 3. Weighted Complete Case OLS Regression Results for Sample 1 (n = 1,753)**

	<u>Model 2a</u>		<u>Model 2b</u>		<u>Model 2c</u>		<u>Model 2d</u>		<u>Model 4</u>	
	Coef.	Std. err.	Coef.	Std. err.						
<i>Work schedules</i>										
Standard work schedule	0.087	0.245	0.260	0.333	0.029	0.308	0.224	0.319	0.139	0.233
Evening work schedule	-0.017	0.133	-0.014	0.179	-0.022	0.225	0.001	0.198	0.032	0.098
Night work schedule	-0.041	0.138	-0.078	0.187	0.031	0.214	0.104	0.308	0.017	0.121
Weekend work schedule	0.121	0.130	0.163	0.178	0.187	0.192	0.076	0.293	0.047	0.096
Irregular work schedule	-0.167	0.108	-0.207	0.150	-0.161	0.196	-0.143	0.334	-0.088	0.075
Low-income (<200% FPL)	-0.046	0.122	-0.054	0.126	-0.010	0.352	-0.001	0.124	-0.021	0.113
Mother single or not cohabiting w/romantic partner	-0.032	0.065	0.434	0.420	-0.032	0.060	-0.082	0.069	-0.042	0.046
<i>Relationship status and income interactions</i>										
Single/not cohabiting * Standard			-0.476	0.370						
Single/not cohabiting * Evening			-0.018	0.183						
Single/not cohabiting * Night			0.144	0.187						
Single/not cohabiting * Weekend			-0.123	0.195						
Single/not cohabiting * Irregular			0.120	0.162						
Low-income * Standard					0.064	0.339				
Low-income * Evening					-0.008	0.250				
Low-income * Night					-0.191	0.268				
Low-income * Weekend					-0.155	0.300				
Low-income * Irregular					-0.042	0.248				

\* p&lt;0.05, \*\* p&lt;0.01, \*\*\* p&lt;0.001

Sample for model 4: n = 1,748 (some mothers included in models 2a - 2d were lacking parenting stress information at wave 2)

Models use replicate city weights.

**Table 3. Weighted Complete Case OLS Regression Results for Sample 1 (n = 1,753) (Continued)**

	<u>Model 2a</u>		<u>Model 2b</u>		<u>Model 2c</u>		<u>Model 2d</u>		<u>Model 4</u>	
	Coef.	Std. err.	Coef.	Std. err.						
Primary child care arrangement (Reference: parent care)										
Relative care							0.297	0.426		
Non-relative, family day care							0.916	0.534		
Daycare/Head Start							0.765	0.465		
<i>Child care interactions</i>										
Relative care * Standard							-0.034	0.339		
Non-relative, family day care * Standard							-0.373	0.546		
Daycare/Head Start * Standard							-0.501	0.432		
Relative care * Evening							0.001	0.198		
Non-relative, family day care * Evening							0.444	0.493		
Daycare/Head Start * Evening							-0.112	0.322		
Relative care * Night							-0.075	0.332		
Non-relative, family day care * Night							-0.290	0.626		
Daycare/Head Start * Night							-0.070	0.373		
Relative care * Weekend							0.034	0.302		
Non-relative, family day care * Weekend							0.099	0.411		
Daycare/Head Start * Weekend							-0.043	0.365		
Relative care * Irregular							-0.007	0.407		
Non-relative, family day care * Irregular							-0.702	0.586		
Daycare/Head Start * Irregular							0.214	0.385		
Average parenting stress (wave 2)									0.476***	0.054

\* p&lt;0.05, \*\* p&lt;0.01, \*\*\* p&lt;0.001

Sample for model 4: n = 1,748 (some mothers included in models 2a - 2d were lacking parenting stress information at wave 2)

Models use replicate city weights.

**Table 3. Weighted Complete Case OLS Regression Results for Sample 1 (n = 1,753) (Continued)**

	<u>Model 2a</u>		<u>Model 2b</u>		<u>Model 2c</u>		<u>Model 2d</u>		<u>Model 4</u>	
	Coef.	Std. err.	Coef.	Std. err.						
<i>Controls</i>										
Employed, full-time	0.174	0.142	0.188	0.141	0.162	0.146	0.246	0.131	0.074	0.109
Mother's age	0.006	0.006	0.006	0.006	0.005	0.006	0.003	0.006	0.007	0.005
Mother's race/ethnicity (Reference: Non-Hispanic, White)										
Non-Hispanic Black	0.010	0.120	0.013	0.120	0.016	0.121	0.023	0.124	-0.031	0.085
Hispanic	-0.081	0.133	-0.075	0.133	-0.079	0.127	-0.096	0.127	-0.060	0.095
Other	-0.010	0.130	-0.006	0.128	0.002	0.134	0.001	0.159	-0.119	0.128
Mother's educational attainment (Reference: College degree or more)										
Less than high school	0.014	0.119	0.015	0.121	0.001	0.126	0.080	0.107	-0.035	0.122
High school diploma or equivalent	-0.200	0.136	-0.204	0.135	-0.210	0.141	-0.136	0.113	-0.177	0.114
Some college or technical school	-0.195*	0.083	-0.199*	0.084	-0.193	0.093	-0.093	0.073	-0.163	0.079
Number of children in the household	-0.005	0.039	-0.004	0.038	-0.003	0.039	0.008	0.033	0.010	0.037
Age of focal child at time of interview	-0.145	0.193	-0.133	0.202	-0.185	0.169	-0.069	0.204	-0.243	0.169
Presence of grandparent in the household	-0.214	0.130	-0.212	0.127	-0.216	0.128	-0.170	0.122	-0.169	0.106
Mother's depression	0.073	0.195	0.072	0.184	0.083	0.176	0.094	0.166	0.090	0.117
Mother's generalized anxiety	0.397	0.247	0.399	0.252	0.377	0.218	0.335	0.205	0.313	0.200
Perceived instrumental support	-0.112*	0.047	-0.110	0.050	-0.116*	0.044	-0.114*	0.046	-0.075	0.043
Child's general health	-0.064	0.062	-0.063	0.061	-0.065	0.058	-0.085	0.06	-0.056	0.058
Mother's general health	0.057	0.041	0.056	0.042	0.064	0.036	0.051	0.051	0.054	0.027
Relationship quality with biological father of the focal child	0.020	0.034	0.023	0.037	0.018	0.035	0.028	0.025	0.024	0.027
Coparenting relationship with biological father of focal child	-0.130	0.086	-0.140	0.092	-0.130	0.092	-0.139	0.072	-0.127	0.057
Experienced at least one coresidential relationship transition	0.005	0.082	0.010	0.083	0.014	0.083	0.019	0.086	0.016	0.066
Mother-child engagement	-0.064	0.035	-0.065	0.035	-0.062	0.035	-0.065	0.035	-0.037	0.027
Reported at least one economic hardship in last 12 months	0.131	0.090	0.131	0.092	0.132	0.090	0.078	0.080	0.100	0.091
Constant	3.386**	0.873	3.192**	0.935	3.529**	0.932	2.880**	0.851	2.283*	0.759
R-squared	0.175		0.181		0.185		0.260		0.377	

\* p&lt;0.05, \*\* p&lt;0.01, \*\*\* p&lt;0.001

Sample for model 4: n = 1,748 (some mothers included in models 2a - 2d were lacking parenting stress information at wave 2)

Models use replicate city weights.