Maternal Work, Schedules and Hours Volatility, and School Readiness

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Precarious employment, or uncertain or unpredictable work, has risen in recent decades (Kalleberg 2011) especially among economically disadvantaged groups (Kalleberg 2009). Although a number of studies have linked various dimensions of precarious work, such as low wages, employment shocks and contingent employment with family wellbeing, more recently, studies have highlighted another form of employment precarity – work hours and scheduling (e.g. Lambert 2008; Schneider & Harknett 2016). Research has found that many workers, especially those in service-sector employment, receive schedules on short notice, have schedules that change on a weekly basis and may not have consistent level of work (in terms of work hours) over time (Golden, 2001; Applembaum et al 2003; Clawson & Gerstel 2015; Lambert et al 2014). Variation, or instability, in work hours and scheduling has been increasing (Finnigan 2018) and may be linked with children's wellbeing if variable work hours affect economic stability (Duncan & Brooks-Gunn 1997), parent's time with children, child care arrangements (Ros Pilarz & Hill 2014, 2017), or maternal stress/mental health that can affect parenting (Raver 2003). Although a number of studies have examined how non-standard work schedules are linked with child wellbeing (e.g. Li et al 2014), little research has considered how changes in work hours or scheduling are linked with child outcomes, and school readiness in particular.

This is an important oversight as gaps in school readiness explain about half of later disparities in school achievement and children from economically disadvantaged backgrounds start the farthest behind (Duncan & Murnane, 2011). To close gaps in school readiness, we need to better understand what factors produce those gaps. This paper focuses on how levels and changes in maternal employment work hours, both in terms of hours (intensity) and schedules (standard/non-standard) in early childhood are linked with children's school readiness. The current study focuses on the employment of low-income mothers during early childhood (ages 0-5) as maternal employment in early childhood has grown dramatically over the last several decades. In 1975, 39% of mothers with children under 6 were in the labor force, today that figure is 64% (BLS 2016). Not only is maternal employment in early childhood more common, but early childhood is also a critical developmental time period (e.g. Phillips & Shonkoff 2000), when important brain development and early learning occurs that is linked with later economic and academic success (Elder 1998; Heckman 2006; Hair et al 2015). Additionally, early childhood may be a particularly effective time for intervention (e.g. Carneiro & Heckman, 2002; Chetty et al., 2016).

Using data from Fragile Families and Child Wellbeing Study (FFCWS), a longitudinal birth cohort dataset of largely low-income, urban mothers, those who are most likely to engage in low-wage work and who may face the most hours and schedule instability, this study examines maternal employment and school readiness. Using data from an employment calendar that covers children from birth to age 5 (N=2011) this paper investigates whether work schedules and hours volatility (changes in work schedules and work hours within and between jobs) are linked with school readiness (cognitive and behavioral skills). By better understanding whether changes (or instability/volatility) in work hours and work schedules are linked with child wellbeing, we can better consider how policies like the Seattle Secure Scheduling Ordinance might influence child outcomes.

How Might Volatility in Maternal Work Hours and Schedules in Early Childhood Affect School Readiness?

Developmental, sociological, and economic theories suggest that children's educational outcomes are influenced by maternal employment through a variety of mechanisms: income, time and parenting, psychological wellbeing, and child care. Different aspects of maternal employment may alter these key inputs into child development in ways that either benefit or hinder educational outcomes. Parental investment theory would suggest that mothers with low levels of work (few hours, insecure labor force attachment), unstable work (job changes or loss, or moves between full- or part-time work), or low-quality work (work with shifting schedules or unprotected leave), may gain fewer economic resources from employment than those with stable, higher intensity, or better quality employment. These features of work may limit a mother's ability to purchase goods and services that are associated with beneficial outcomes for children. Maternal time, role strain, and family stress models posit that economic insecurity, as a result of job loss or job instability, decreases child cognitive and behavioral skills since economic insecurity disrupts maternal socioemotional resources, and impacts parent-child interactions (e.g. Raver, 2003). The related household chaos theory suggests that unstable employment may disrupt family routines or result in moves, creating chaos in the household, which in turn negatively impacts school readiness. Instability in employment or wages may also result in inconsistent access to governmental supports, such as health insurance or food stamps (Hill et al, 2013) that can affect school readiness. Poor-quality, low-intensity, or unstable employment might also affect child care use, resulting in lower quality and less stable care, which is associated with poorer school readiness for children (e.g. Morrissey, 2009, Ros Pilarz & Hill 2014). Last, if unstable employment and low wages are linked with living in poorer neighborhoods, in which educational institutions and teachers are likely to be worse, then children's later school outcomes will likely be impacted.

Prior Research

A large literature examines the links between maternal employment and child wellbeing, often finding mixed results (for reviews see Goldberget al., 2008; Lucas-Thompson, Goldberg, & Prause, 2010; Smolensky & Gootman, 2003; Waldfogel, 2006). Additionally, a number of studies have examined particular aspects of stability (or instability) in maternal employment that might be linked with child wellbeing. For example, studies of job loss or employment transitions have found that parental employment loss is predictive of poorer educational attainment and psychological wellbeing (e.g. Brand & Simon Thomas, 2014) especially among low-income children (e.g. Hill et al, 2011). Research focused on intensity of work (as measured by hours) typically focuses on differences between full- and part-time work, and generally finds poorer academic achievement and behavior for children whose mothers work full-time (Johnson et al, 2012), especially in the first year of life (e.g. Lucas-Thompson et al., 2010). Work scheduling, as well as occupational prestige, benefits or wages, are all often considered to be measures of employment quality and prior research has found that higher employment quality is associated with improved cognitive and behavioral skills for children (e.g. Lombardi & Coley, 2013). A larger, more robust literature has focused on the impacts of non-standard work schedules and child wellbeing. This research generally finds that non-standard work, but most frequently night

(e.g. Han, Miller & Waldfogel 2010; Heymann, 2000) and shift work (e.g. Han 2008; Strazdins et al 2006, 2004) is linked with poorer cognitive development and increased behavior problems, although some research finds no associations for lower income families (Dunifon Kalil & Bajrachaya, 2005; Ross Phillips 2002).

An emerging literature has really begun to develop our understanding of shifting schedules, especially among retail and food service workers (Golden, 2001; Lambert, 2008), but to date, little research has examined how shifting schedules might be linked with school readiness. The current study builds on earlier work by examining how non-standard work over all of early childhood is linked with school readiness, and by studying how changes – or instability – in scheduling as well as work hours might affect those associations.

Data, Measures and Analytic Strategy

Data. Data come from the Fragile Families and Child Well-being Study, a longitudinal study of urban births in 20 large U.S. cities between 1998 and 2000. The study includes 4,898 mothers, fathers, and children, with an oversample of nonmarital births (at a ratio of 3 to 1). Mothers and fathers were interviewed soon after the birth of the focal child and follow-up interviews were conducted when the child was approximately 1, 3 and 5 (interviews were also collected at ages 9 and 15, but those are not used here). The employment calendar was conducted on a subset of the mothers at the age 3 and 5 interviews. The employment calendar asked mothers to provide the start and end time of each job that lasted more than 2 weeks since the birth of the focal child. Thus, this study provides unique data on all maternal employment over all of early childhood (a 5-year period) rarely available in other datasets. I use this employment calendar, along with detailed information on each job to construct a number of measures related to employment from birth through age 5 of the focal child[1]. The final analytic sample includes 2,012 mothers and their children who provided information on all of early childhood (at the age 5 or at both interviews).[2]

School Readiness/School outcomes. This study uses well-validated instruments that are linked with school performance focusing behavior and cognitive skills. Child literacy is examined at ages 3 and 5 via interviewer and teacher assessments. At ages 3 and 5 the Peabody Picture Vocabulary Test (PPVT), which measures children's receptive vocabulary and verbal ability was administered to children. At age 5 the Woodcock-Johnson (WJ) test of letter-word recognition (age 5) is also administered. Because there are few reasons to expect differences in the link between maternal employment and PPVT and WJ scores to vary, the scores are combined into a single literacy measure and are standardized (M=0, SD=1). Teacher reports regarding student's literacy at age 5 are used in extensions. Child behavior is measured using externalizing and internalizing behavior. Mothers report on child externalizing (aggressive, destructive, rule-breaking) and internalizing (anxious, depressed, withdrawn) behaviors at ages 3 and 5 using the Child Behavior Checklist (CBCL). Teachers also report on externalizing and internalizing behavior using the CBCL at age 5.

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[1] Although a few other datasets provide employment calendars, they do not collect as many comprehensive educational outcomes and sample sizes require mixing children of different developmental ages. Additionally, this employment calendar collects extensive data on changes in work schedules both in terms of type (standard/non-

[2] In future analyses I plan to map mother's employment dates to the child's developmental age. Doing this will allow me to test whether there are differences between employment characteristics in infancy versus say age 1 or 2 on school readiness.

Maternal Employment Schedules. I examine maternal employment schedules in a number of ways: 1) years of any non-standard work (any evening, night, swing or variable shifts), 2) years in a particular type of non-standard work (evening, night, swing/variable), 3) number of jobs worked with non-standard hours, 4) number of changes in schedule (both across jobs and within jobs), 5) number of changes in schedule within jobs, 6) number of changes in schedule across jobs, and 7) number of moves between standard and non-standard schedules.

Maternal Work Hours. To study work hours, and volatility in those hours, a number of measures are generated: 1) average number of hours worked in early childhood, 2) years of part-time (less than 30 hours) work, and years of full-time work (30+ hours), 3) number of hours changes (both across jobs and with in jobs), 4) number of changes in hours within a job, 5) number of changes in hours across jobs, and 6) number of changes between full and part-time work.

Additional Measures of Maternal Employment Stability and Change. To examine the overall link between employment (regardless of hours or scheduling) a measure of years of employment in early childhood was constructed. Although changes in work scheduling and hours are highly correlated with job changes, in an additional analysis a measure of number of jobs in early childhood was examined. Because prior literature has found job loss to be predictive of poorer child outcomes, in another model I examine number of spells out of the labor force that last more than 3 months (a spell of unemployment or out of the labor force that is unlikely to be due to the birth of a child). Although occupation is not collected as part of the employment calendar, I also construct a measure of occupation using information from the core data files (at years 1, 3 and 5) and generate a measure that indicates a change in occupational status in the first 5 years.

Employment Controls. Other measures of employment that may be correlated with changes in schedules/hours and child wellbeing are included as control measures in the analyses. First is years that the mother reports having job-protected leave, or the ability to take time off without losing her job. Because prior research has found that job schedule and hours instability is particularly common among retail workers, a control for occupation is included in the models. This variable, which was not collected in the employment calendar relies on data in the core 1, 3 and 5 year survey. Rather than years, occupation is coded as the number of waves (0,1,2,3) in professional, service, sales or other occupations. Multiple job-holding, or holding more than one job concurrently has been linked with maternal mental health (Bruns & Pilkauskas 2018). Using the employment calendar, dates of overlapping jobs are used to identify multiple job-holding. However, this method results in about 8% of mothers reporting multiple job-holding. In comparison, using data from the core shows that closer to 20% of mothers report holding multiple jobs at some point in early childhood. Thus, I use a measure from the core that indicates the number of survey waves that mothers report multiple job-holing; however, in extension that use the data from the employment calendar and it does not affect the results. Maternal wage information in each job is not available in the employment calendar; thus, I include and test a number of additional controls related to wages (average earnings, waves in poverty, household income to needs ratio over time) to control for these economic factors.

Additional Control Measures. To control for factors that might be correlated with selection into employment and that might otherwise bias the estimates, I include an extensive set of covariates that have been theoretically or empirically linked with both maternal employment and school outcomes in prior research. Controls include: race/ethnicity, education, relationship status, age at the birth, immigrant status, birth order of the focal child, whether a grandparent of

the child was coresident at birth, income-to-needs ratio at birth, employment prior to the birth, substance use, child gender, child low birth weight, child's age at the year of outcome and child's disability as reported at the year 1 survey. These rich data also allow me to control for many variables not typically available when studying school outcomes such as mother's cognitive score, impulsive behavior, child's temperament during infancy and city fixed-effects (as the city in which mothers/children live may affect employment opportunities and school quality). In extensions, I tested the inclusion of time varying covariates such as relationship status, poverty, income, earnings, hardship, the birth of a new child, a change in health status that affects work, depression, parenting measures (engagement, spanking, stress), and child care use and type, also not typically available in other datasets.

Analytic Strategy. I used ordinary least squares (OLS) regression models to predict children's school readiness as a function of maternal employment over early childhood. I enter different variables into the models separate (as well as together when measures are not too highly correlated). All controls come from the baseline survey to pre-date the measures of employment with some exceptions (when an unchanging characteristic is measured at a later time period). Future analyses will consider the use of residualized change and individual fixed effects modeling (and possibly propensity scores) to further address and test for selection.

Results

In Table 1 the results of analyses regressing school readiness on a variety of non-standard schedule work changes are examined. A few findings emerge from these analyses. First, an additional year of maternal employment in swing work (variable schedules) is associated with increased behavior problems – both externalizing and internalizing. Depending on the model, an additional year of swing work is associated with a .07-.09 SD increase in externalizing behavior and a 0.09 SD increase in internalizing behavior. Second, night work appears to be associated with decreased verbal/literacy skills at the start of kindergarten: a one year increase in night work decreases verbal/literacy skills by about 0.09 SD. Third, none of the measures of instability in work schedules examined here (number of non-standard jobs, shift changes across or within jobs, or moves between standard and non-standard schedules) were linked with behavior problems. Fourth, there was some evidence to suggest that changes in non-standard schedules were linked with verbal/literacy scores, however the direction of the association is positive, suggesting that change is linked with better scores.

Table 2 looks at a similar set of analyses but instead focuses on changes in work hours in particular. Again, swing work is associated with increased behavior problems, and night work is associated with lower verbal/literacy skills net of additional work change controls. In general, there is little evidence that changes in work hours are associated with school readiness, although there are a few significant findings. The number of changes in hours across jobs is associated with higher levels of externalizing behavior. This number conflates both hours and job changes; however, in an extension examining number of job changes that variable was not associated with externalizing problems.

In analyses not shown, I tested including both hours and schedule changes in the same models. The baseline findings were unchanged, however correlation between the variables was very high. An extension that examined the number of spells out of the labor force that lasted more than 100 days found that an additional spell was associated with more externalizing behavior but not associated with internalizing or cognitive scores; however, swing and night

work continue to be associated with school readiness.

In sum, the preliminary analyses shown here suggest that there is little evidence to suggest that hours changes or non-standard schedule changes, measures of instability and volatility, are linked with school readiness. Rather, non-standard work, in particular night and swing schedules are linked with more behavior problems and lower literacy scores. Tests including additional controls (additional alcohol/substance use measures, waves in a particular family structure, waves of TANF receipt, waves of any welfare/public assistance receipt) were robust but additional measures such as child care and father's characteristics will be tested in the future. Additionally, I plan to test the robustness of the findings to alternative modeling specifications. Although changes in hours and schedules are a form of work volatility and potentially economic instability, I find little evidence to suggest that these particular forms of instability have separate links with school readiness beyond time in non-standard work.

Table 1: Change in work schedules and school readiness.

	Externalizing Behavior					Internalizing Behavior					Cognitive - Verbal/Literacy				
Schedule type (in years)															
Evening	-0.017	-0.046	-0.024	-0.020	-0.023	-0.008	-0.005	-0.006	-0.010	-0.007	-0.008	-0.013	-0.021	-0.021	-0.013
	(0.03)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Night	-0.001	-0.034	-0.008	-0.008	-0.006	0.043	0.047	0.045	0.045	0.044	-0.081*	-0.087*	-0.094**	-0.094**	-0.086**
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	(0.03)	(0.03)	(0.03)
Swing	0.079**	0.053+	0.075**	0.075**	0.076**	0.092**	0.095**	0.093**	0.093**	0.093**	0.004	-0.001	-0.004	-0.004	0.000
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)
Multiple job holding (in waves)	0.067	0.043	0.042	0.036	0.033	-0.010	-0.007	-0.002	0.002	0.001	-0.037	-0.042	-0.091	-0.090	-0.078
	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)
Average hours worked	0.002	0.002	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.003	0.003	0.002	0.002	0.002
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Occupation (in waves)															
Professional	-0.040	-0.039	-0.039	-0.039	-0.039	-0.070*	-0.070*	-0.070*	-0.070*	-0.070*	0.020	0.020	0.023	0.023	0.022
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Service	-0.003	-0.004	-0.004	-0.003	-0.004	-0.009	-0.009	-0.009	-0.009	-0.009	-0.043+	-0.043+	-0.044+	-0.044+	-0.043+
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Sales	0.039	0.035	0.038	0.038	0.038	-0.065*	-0.065*	-0.065*	-0.065*	-0.065*	0.010	0.009	0.008	0.008	0.009
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Job protected leave (years)	-0.050**	-0.044**	-0.049**	-0.048**	-0.048**	-0.019	-0.020	-0.019	-0.020	-0.020	0.027+	0.028*	0.029*	0.029*	0.029*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Number of non-standard jobs		0.054					-0.007					0.010			
		(0.04)					(0.04)					(0.03)			
All shift changes (across and within jobs)			0.028					-0.009					0.057*		
			(0.03)					(0.03)					(0.03)		
# of shift changes across jobs				0.042					-0.020					0.056*	
				(0.03)					(0.03)					(0.03)	
# of shift changes within jobs				-0.059					0.055					0.062	
				(0.08)					(0.08)					(0.07)	
# of moves between standard and non-standard schedules					0.045					-0.015					0.052+
					(0.03)					(0.03)					(0.03)
Observations			1,673					1,696					1,726		

Standard errors in parentheses. Outcomes are standardized (M=0, SD=1). Work is measured birth to age 5, outcomes at age 5. All regressions include controls for race/ethnicity, education, age, relationship status, immigrant status, birth order of the focal child, grandparent coresidence, income-to-needs ratio, whether the mother worked the year before the birth, child is a boy, whether the child was low birth weight, whether the child has a disability, child's temperament at year 1, child's age at the year 5 interview, mother's cognitive (WAIS) score, impulsive behavior score, whether substance abuse ever interfered with life and city fixed-effects.

** p<0.01, * p<0.05, + p<0.1

Table 2: Change in work hours and school readiness.

	Externalizing Behavior					Internalizing Behavior					Cognitive - Verbal/Literacy				
Schedule type (in years)															
Evening	-0.016	-0.019	-0.019	-0.015	-0.019	-0.009	-0.008	-0.007	-0.006	-0.009	-0.009	-0.011	-0.011	-0.015	-0.014
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Night	-0.009	-0.010	-0.013	-0.006	-0.009	0.036	0.036	0.034	0.038	0.036	-0.085*	-0.086**	-0.086**	-0.089**	-0.085*
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Swing	0.075**	0.074**	0.076**	0.079**	0.075**	0.088**	0.088**	0.090**	0.092**	0.088**	0.001	-0.000	-0.000	-0.005	0.000
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Multiple job holding (in	0.089*	0.080*	0.075+	0.098*	0.081*	0.055	0.056	0.054	0.058	0.054	0.036	0.029	0.028	0.030	0.025
waves)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)	(0.03)	(0.04)
Average hours worked	0.002	0.002	0.002		0.002	0.000	0.000	0.000		0.000	0.003	0.003	0.003		0.003
	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)		(0.00)
Occupation (in waves)															
Professional	-0.041	-0.041	-0.040	-0.039	-0.041	-0.071*	-0.071*	-0.071*	-0.071*	-0.071*	0.019	0.019	0.020	0.018	0.020
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Service	-0.005	-0.006	-0.008	-0.005	-0.005	-0.011	-0.011	-0.012	-0.009	-0.011	-0.044+	-0.045*	-0.045*	-0.047*	-0.044+
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Sales	0.042	0.040	0.039	0.041	0.042	-0.063+	-0.062+	-0.063*	-0.061+	-0.063+	0.012	0.010	0.011	0.014	0.012
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Job protected leave (years)	-0.051**	-0.051**	-0.048**	-0.035	-0.051**	-0.021	-0.021	-0.019	-0.018	-0.021	0.025+	0.024+	0.025+	0.003	0.025+
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)
# of all hours changes		0.023					-0.002					0.021			
(within and between jobs)		(0.02)					(0.02)					(0.02)			
# of hours changes across			0.053*					0.019					0.022		
jobs			(0.03)					(0.03)					(0.02)		
# of hours changes within a			-0.047					-0.053					0.012		
job			(0.03)					(0.03)					(0.03)		
Work intensity (in years)															
Part-time work				0.000					-0.014					0.004	
				(0.02)					(0.02)					(0.02)	
Full-time work				-0.013					0.001					0.042+	
				(0.03)					(0.03)					(0.02)	
# of changes between full					0.038					0.006					0.060+
and part-time work					(0.04)					(0.04)					(0.03)
Observations			1,673					1,696					1,726		

Standard errors in parentheses. Outcomes are standardized (M=0, SD=1). Work is measured birth to age 5, outcomes at age 5. All regressions include controls for race/ethnicity, education, age, relationship status, immigrant status, birth order of the focal child, grandparent coresidence, income-to-needs ratio, whether the mother worked the year before the birth, child is a boy, whether the child was low birth weight, whether the child has a disability, child's temperament at year 1, child's age at the year 5 interview, mother's cognitive (WAIS) score, impulsive behavior score, whether substance abuse ever interfered with life and city fixed-effects.

** p<0.01, * p<0.05, + p<0.1