

Rachidi, Angela

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# Child Care Assistance in the United States and Nonstandard Work Schedules

Angela Rachidi  
*American Enterprise Institute*

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## **Child Care Assistance in the United States and Nonstandard Work Schedules**

Angela Rachidi, Research Fellow in Poverty Studies  
American Enterprise Institute

November 2015

### **Abstract**

Child care is a necessary work support for many American families, but can be prohibitively expensive for those with low incomes. The federal government provides assistance through direct child care subsidies, but only a fraction of eligible families are in receipt. One factor that may limit access to child care assistance is work schedule. Research suggests that mothers with nonstandard work schedules use relative care more and day care centers less than those with standard work schedules. Research also shows that child care subsidies are disproportionately used for day care centers. This suggests that mothers who work nonstandard schedules are less likely to receive child care assistance, but little empirical work addresses this question directly. Using data from a cohort of urban mothers, this study explores the direct and indirect relationship between work schedule and receipt of child care assistance. The findings suggest that nonstandard work schedules reduce the odds of receiving child care assistance; a relationship mediated entirely by less day care center use among nonstandard schedule workers. The results imply that more flexibility is needed in the child care assistance system, which better meets the needs of mothers who work nonstandard schedules.

# **1 Introduction**

With 61 percent of all children under age 5 in the United States in some type of regular child care arrangement in 2011, child care is a necessary work expense for many American families (Laughlin, 2013). But child care is costly, accounting for one-third or more of household expenses for working low-income families (Laughlin, 2013). Government assistance to help pay for child care can be an important work support and can help reduce poverty. But the current system faces a number of challenges, including how well it meets the needs of parents who work nonstandard schedules.

The current child care assistance system for low-income families in the United States primarily relies on direct government-funded subsidies that can be used to partially pay for child care. The Child Care Development Fund (CCDF) and Temporary Assistance for Needy Families (TANF) Program fund subsidies for income-eligible and working families, including those in approved work or education activities (US DHHS, 2013). Estimates suggest that over 14 million children in low-income families need child care, but the current program serves less than 20 percent of these children (US DHHS, 2011). Research on determinants of subsidy use suggest a number of contributing factors, including insufficient funding, lack of knowledge among eligible families, and parental preferences for relative care that is less likely to be subsidized (Herbst, 2008). Family characteristics have also been linked to subsidy use, with one study of pre-school aged children finding that families who were slightly more advantaged had a higher likelihood of receiving a subsidy (Johnson, Martin, and Brooks-Gunn, 2011).

A review of the literature will show that little research explores the relationship between work schedule and child care assistance receipt and the potential mediating role of child care arrangement. Yet, work schedule seemingly plays an important role. A larger share of parents who use day care centers receive child care subsidies, and parents who work nonstandard schedules are

less likely to use day care centers in favor of relative or informal care. This suggests that working a nonstandard schedule reduces one's odds of receiving a child care subsidy. With an increasing share of low-income parents working nonstandard schedules, better understanding these relationships can inform future policy efforts.

To address this gap in the literature, this study used data from the Fragile Families and Child Wellbeing Study to empirically test whether child care subsidy receipt among urban working mothers with children in non-parental care differs depending on whether they reported working a nonstandard or standard schedule. The hypothesis was that workers of nonstandard schedules were less likely to receive child care assistance; a relationship mediated by child care arrangement. It was expected that nonstandard schedule workers were less likely to receive child care assistance because they were less likely to use day care centers compared to those working standard schedules. Another contribution of this study is the consideration of whether determinants of subsidy receipt (namely the relationship with work schedule) differ depending on the age of the child. As such, the analysis was conducted separately for mothers with a one year old child, as well as a three year old child.

The sample was restricted to low-income mothers (under 200 percent of the federal poverty level) to better approximate a subsidy-eligible population and a multivariate path analysis was conducted using structural equation modeling to test the study hypothesis. The remaining sections review the literature on the benefits of child care assistance to low-income working families, as well as the existing research on determinants of subsidy receipt. A conceptual framework is presented to reflect the importance of considering work schedule, as well as the status of the current literature. Section 2 provides a description of the data and methods used for the current study. Section 3 presents the results, and Section 4 discusses the conclusions and presents policy considerations.

### ***1.1 Benefits of Government Child Care Assistance***

Typical child care costs can range from \$5,000-\$10,000 or more depending on where one lives. This translates into a substantial portion of many households' budgets. According to data from the US Census Bureau, average weekly child care costs for families with a child under 5 were \$179 in 2011, or \$9,236 annually (Laughlin, 2013). Even among families in poverty, child care expenses averaged almost \$100 per week in 2011 (for those who had expenses), or \$5,160 annually, accounting for 30 percent of their household budget (Laughlin, 2013).

Child care assistance can provide a number of benefits to families facing child care costs, including reduced economic hardship, increased employment, and better quality child care. As one might expect, research shows that child care assistance reduces out-of-pocket child care costs (Teitler, Reichmann, and Nepomnyaschy, 2002; Forry, 2009). Studies show that when out-of-pocket child care costs are reduced, work becomes more attractive. In a review of the literature, Blau (2003) concludes that lowering the cost of child care increases maternal employment, with studies showing a range of effects depending on the analytic approach. Han and Waldfogel (2001) showed that lower child care costs increased the employment rate of unmarried mothers by between 5 and 21 percent depending on the size of the subsidy. Tekin (2005) found that subsidy use increased maternal employment by 15 percent and Ahn (2012) found that subsidy receipt among low-income mothers increased the probability of employment by 6.7 percent.

Research has also linked subsidy receipt to increased earnings and increased months worked (Danziger, Ananat, and Browning, 2003). Increased work effort that results from child care assistance can benefit families by increasing income in the short-term, as well as the long-term through returns to increased labor market experience. Work also reduces poverty and dependence on government assistance, which can have important positive effects on children (Brooks-Gunn and Duncan, 1997).

Child care assistance can have other benefits as well. Research shows that child care assistance can influence the type of child care arrangement, which in turn can affect quality. Numerous studies find that subsidy receipt is associated with more use of day care centers (Tekin, 2005; Crosby, Gennetian, and Huston, 2006; Henly, Ananat, Danziger, 2006; Johnson, Ryan, and Brooks-Gunn, 2012). Center-based care is generally considered better quality than relative care, and research suggests that subsidy recipients receive higher quality care than eligible non-recipients because they are more likely to use day care centers (Ryan, Johnson, Rigby, and Brooks-Gunn, 2011; Johnson and Ryan, 2012). However, the research is mixed on the extent to which subsidies lead to higher quality care, highlighting the importance of focusing on quality among providers that accept child care subsidies (Herbst and Tekin, 2010). The research is also mixed on the effects of child care in general on child outcomes, but one consistent conclusion is that high-quality care can positively impact child outcomes so long as the number of hours is not too high (Belsky, 2011). This suggests that access to child care assistance can improve child wellbeing through better quality care.

## ***1.2 Determinants of Subsidy Use***

Although child care assistance has been linked to positive outcomes, few likely-eligible low-income families receive it. According to the federal government, only 17% of federally-eligible children received subsidized care through the Child Care Development Fund (CCDF) or other related funding in FY 2011 (USDHHS, 2011). Preferences play a role with as much as half of eligible recipients in one survey indicating that they did not need or want a subsidy (Shlay et al, 2004), but preferences do not entirely explain the low take-up rate.

Other factors associated with non-receipt of child care subsidies include rationing by states, limited knowledge of subsidy programs among eligible recipients, and difficulties navigating the system (Herbst, 2008). Lack of knowledge was also found to be a contributing factor in a survey of

eligible but non-participating subsidy recipients in Philadelphia, where three-fourths said they needed help with child care expenses but just over half said they were aware of their eligibility (Shlay, 2004). Prior TANF and other public benefit receipt have also been found to increase the likelihood of subsidy receipt among eligible populations, suggesting that mothers who avoid welfare programs are less likely to receive child care subsidies (Herbst, 2008). Among families with pre-school age children, higher income was associated with subsidy receipt and those who indicated that cost was very important to them were more likely to receive a subsidy (Johnson, Martin, and Brooks-Gunn, 2011). However, none of these studies explored whether mother's work schedule was related to subsidy receipt.

Some argue that subsidy receipt is determined by the type of care – parents choose a type of arrangement and then obtain subsidies through that arrangement rather than receiving a subsidy and then shopping for care (Burstein and Layzer, 2007). Using standard statistical methods, it is difficult to identify the direction of the relationship between child care arrangement and subsidy receipt. Qualitative data suggests that parents choose child care arrangements that work around their employment schedules (Chaundry, Pedroza, and Sandstrom, 2012), suggesting that employment context influences type of child care, which then influences whether a subsidy is received. This suggests that the factors that influence decisions around type of arrangement, such as work schedule, may also have an indirect effect on whether a subsidy is received or not.

### ***1.3 Conceptual Framework – Nonstandard Work Schedules***

Although states have flexibility in how subsidies are administered, research suggests that the current system favors parents with predictable and consistent work schedules who use day care centers. Roughly 70% of CCDF subsidy users use day care centers, while only one-quarter of all children under five are in similar facilities (USDHHS, 2013 and Laughlin, 2013). As previously



stated, numerous studies that control for confounding factors find that subsidy receipt is associated with more use of day care centers, although the direction of association is unclear (Tekin, 2005; Crosby, Gennetian, and Huston, 2006; Henly, Ananat, Danziger, 2006; Johnson, Ryan, and Brooks-Gunn, 2012). Several possible reasons explain the disproportionate use of day care centers. Most obvious is that state policies for provider licensing and registering likely favor, and in many cases directly encourage, day care centers over relative and informal providers (Minton, Durham, and Giannarelli, 2014), limiting the availability of relative and informal providers that accept child care subsidies. Others suggest that once a subsidy is secured, recipients choose day care over informal care because it becomes more affordable (Crosby, Gennetian, and Huston, 2006). Still others suggest that day care centers serve as a gatekeeper, securing child care subsidies for families after they have already decided on them as their provider (Burstein and Layzer, 2007).

Whatever the reason, child care subsidies clearly get used at day care centers disproportionate to relative or informal providers. This likely has implications for workers with nonstandard schedules that do not fit nicely with day care center operating hours. Not surprisingly, data show that workers with nonstandard schedules use more informal (neighbor or friend) or relative child care for this reason (Kimmel and Powell, 2001; Han, 2004; Henly, Ananat, and Dangizer, 2006; Burstein and Layzer, 2007). Using data from the Survey of Income and Program Participation (SIPP), Enchautegui et al (2015) found that almost 50 percent of single parents who worked nonstandard schedules used relative care compared to less than 30 percent who worked regular schedules. In another study of urban low-income unmarried mothers, working evening work hours was associated with the use of more informal care than working standard schedules, as well as more hours of care (Henly, Ananat, and Danziger, 2006).

A reduced likelihood of using day care centers among workers with nonstandard schedules suggests that they are also less likely to receive child care assistance. But little research exists

addressing this question directly. Tekin (2007) explored the issue from the opposite direction, exploring whether subsidy receipt influenced decisions about working standard or nonstandard schedules among single mothers. He found that receipt of a subsidy was related to an increased probability of working a standard schedule (Tekin, 2007). Similarly, a study of married mothers found that decisions around work schedules were sensitive to child care costs, implying that a relationship between subsidy receipt and work schedule might exist (Kimmel and Powell, 2001). In addition, a recent study of those already receiving a subsidy, found that nonstandard work schedules led to more instability in subsidy receipt, suggesting that the system represents some problems for these workers, but the authors did not explore nonstandard work schedule as a determinant of subsidy receipt (Henly et al, 2015). Little research seems to explore work schedules as a determinant of child care assistance receipt.

### ***1.3 Nonstandard Work Schedules in Today's Labor Market***

Addressing this gap in the literature is important because of the increasing prevalence of nonstandard work schedules. Research suggests that jobs that require nonstandard or irregular schedules have increased in recent years (Autor, Katz, Kearney, 2006; Autor, 2010). Changes in the labor market have resulted in a hollowing out of middle-skill jobs in favor of low-skill and high-skill jobs and data show that low-skill jobs have the highest likelihood of nonstandard work hours (Acs and Loprest, 2008). One study found that 42 percent of food service jobs and 30 percent of retail jobs require nonstandard hours (Enchautegui, 2013). Another study found that 56 percent of workers in the retail or wholesale trade sector and 60 percent in the food service sector worked nonstandard schedules (Golden, 2015).

These job types account for a large share of employment among low-income mothers. Analysis of Current Population Survey (CPS) data shows that in 2012/2013 almost 44 percent of

working never-married mothers with a child under age 5 worked a service or retail sales job, as did 34 percent of never-married mothers with children age 5 or older.<sup>1</sup> In 1988/1990, roughly 30 percent of each group worked in these types of jobs. This means that increasingly never-married mothers (those most likely to be poor), especially those with young children, are working in jobs that are likely to require nonstandard work schedules.

Data on how workers spend their time confirm these trends. According to 2004-2011 American Time Use Surveys, 20 percent of all workers (at least 15 years old) worked a nonstandard schedule per year, but almost 50 percent of those with earnings in the bottom quartile worked nonstandard schedules (Enchautegui, 2013). Similarly, a study of nonstandard work over the life cycle found that almost 90 percent of workers spent some time working nonstandard schedules between the ages of 18 and 39 (Presser and Ward, 2011).

#### ***1.4 Present Study***

This suggests that nonstandard schedules are becoming more common, especially among low-income workers. Child care is essential for many of these workers, and help paying for child care can be beneficial. It can support work by reducing employment disruptions, as well as reduce material hardship directly by freeing up money for other expenses. However, if nonstandard work schedules reduce the likelihood of receiving child care assistance, parents who work these schedules are put in a difficult position. They likely work for low wages at the same time that they have more difficulty accessing child care assistance.

The current study contributes to our understanding of these relationships in a few ways. It extends what is known about the determinants of subsidy receipt by considering the possible effect

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<sup>1</sup> Based on author calculations from the US Census Bureau Current Population Survey Annual Social and Economic Conditions (ASEC) survey from 1988-2013. Data were pooled together across years to provide reliable sample sizes.

of work schedule. It explores whether the relationship between nonstandard work schedules and subsidy receipt (if any) differs depending on the age of the child. In addition, it explores the possible mediating effect of child care arrangement on child care assistance receipt. Collectively, the results are intended to inform future reforms to the government's child care assistance system for low-income families.

## **2 Data and Methods**

The primary research question for this study was whether nonstandard work schedules were associated with a reduced likelihood of government child care assistance receipt for a cohort of urban mothers. It was hypothesized that mothers who worked nonstandard schedules had reduced odds of receiving child care assistance compared to their counterparts who worked standard schedules, because they were less likely to use day care centers. The following describes the data source and methods.

### **2.1 Data Source**

Data from the Fragile Families and Child Wellbeing Study were used to explore the relationship between nonstandard work schedules and child care assistance receipt. The Fragile Families and Child Wellbeing Study is a longitudinal survey of births between 1998 and 2000 in 20 large US cities (Reichman, Teitler, Garfinkel, and McClanahan, 2001). The survey consists of telephone interviews with both mothers and fathers at birth and again when children were one, three, five, and nine. The study oversampled unmarried mothers and income levels at baseline were low, with 73 percent of unmarried mothers under 200 percent of the federal poverty level (Reichman, Teitler, Garfinkel, and McClanahan, 2001). The original baseline sample included 4,868 mothers, of which 3,682 were unmarried.

The Fragile Families survey included questions on whether the mother worked in the previous year, as well as whether the focal child was in non-parental care for more than 10 hours per week. The survey also included a series of questions on the work schedule of the mother. Responses to these questions, as well as a number of covariates, were used in the analysis.

## **2.2 Study Sample**

The sample used for this study included mothers who were employed and using regular child care for more than 10 hours per week at the time of the survey when their child was one (wave two) and three (wave three). The sample was limited to mothers with complete data on all covariates, including work schedule. In addition, to approximate a subsidy-eligible population, the sample was restricted to those with income below 200 percent of the federal poverty level (about 75 percent of the total sample). Nonstandard work schedule included those who reported that they worked evenings, nights, weekends, or inconsistent schedules week to week. The final sample included 1,127 mothers in the year one wave (when the focal child was one) and 1,237 mothers in the year three wave (when the focal child was three). Descriptive characteristics for the final sample are included in table 1.

## **2.2 Methods**

First, descriptive statistics were used to explore the bivariate relationships between nonstandard work schedule, child care arrangement, and receipt of child care assistance. Chi-square statistics assessed whether any of these differences were statistically significant. Next, a multivariate path analysis was conducted to control for confounding factors, as well as to account for the potential mediating effect of child care arrangement on the relationship between work schedule and receipt of child care assistance. Generalized structural equation modeling (in STATA 13) was used,

which is appropriate when the dependent variable is binary, as is the case for this analysis. Structural equation modeling is useful when attempting to estimate the direct and indirect effects in a single model (Hox and Bechger, 1998). It involves several multivariate regression equations in a single model, including equations reflecting intervening relationships between the independent and dependent variables (Hox and Bechger, 1998). Two models were created to reflect estimates when the focal child was one and three.

### ***2.3 Measures***

The dependent variable was a binary variable reflecting receipt of government child care assistance. Receipt of government child care assistance was based on a question asking whether any person or agency gave the mother money, a voucher, or a scholarship for child care. If the mother responded yes, she was asked the source of the assistance. For this analysis, if the mother indicated any assistance from a government agency she was categorized as receiving government child care assistance. Receipt of government child care assistance was categorized when the focal child was one and three and reflects assistance received at the time of the interview.

The primary mediating variable was child care arrangement and was based on questions on the primary type of child care arrangement used at the time of the survey at each data collection wave. The survey asked whether anyone other than the mother or resident father provided care for the child and if so, responses to a series of questions on the type of arrangement were categorized as relative-care, non-relative family day care, and center-based day care. If a family used more than one arrangement, the primary arrangement was used. Families where child care was provided by the nonresident father or boyfriend were included as relative care.

The main predictor variable was nonstandard work schedule. The survey included a series of questions on whether the mother worked in the previous year, and if she did, whether she worked

nights, evenings, weekends or different times each week. A mother was categorized as working a nonstandard schedule if she responded yes to working nights, evenings, weekends or different times each week for her primary job. This included mothers who indicated that they sometimes or regularly worked evenings, nights, weekends, or different times each week.

Consistent with the literature, a number of demographic, income, and employment-related covariates were also included in the models as controls. A list of these variables is included in table 1, along with summary statistics for the year one sample and year three sample, as well as a full sample regardless of income. It shows that the income-restricted sample differed from the broader sample in a number of expected ways, suggesting that the income-restriction was important.

**Table 1: Summary Statistics for Variables Included in the Analysis**

	Year One (when child was age 1)		Year Three (when child was age 3)	
	Below 200 FPL (n=1127)	Total (n=1878)	Below 200 FPL (n=1237)	Total (n=2115)
Received child care assistance	28.9%	20.3%	33.9%	23.0%
Child care arrangement				
Relative care	50.0%	47.6%	42.3%	37.7%
Family day care	17.3%	20.9%	8.0%	12.1%
Center-based care	32.7%	31.5%	49.7%	50.2%
Nonstandard Work				
Yes	67.6%	63.0%	62.2%	53.7%
Age at focal child's birth (M:SD)	24.2 (5.5)	25.4 (6.0)	23.8 (5.5)	25.2 (6.0)
Marital status/living situation				
Married to baby's father	12.7%	27.8%	11.8%	28.1%
Cohabiting w/ baby's father	26.7%	24.9%	16.8%	16.8%
Not living with baby's father	60.6%	47.3%	71.4%	55.1%
Race/ethnicity				
White, non-Hispanic	12.2%	22.2%	12.8%	22.7%
Black, non-Hispanic	58.1%	51.4%	61.8%	53.0%
Hispanic	26.7%	22.9%	23.1%	20.8%
Other	3.0%	3.5%	2.3%	3.6%
Education level at focal child's birth				
Less than high school	32.9%	23.4%	35.1%	24.4%
High school only	36.7%	31.1%	38.7%	32.5%
Some college	27.5%	31.7%	24.4%	30.1%
College graduate or more	3.0%	13.8%	1.8%	13.1%
U.S. Citizen	87.3%	88.0%	90.1%	88.5%
Receipt of public assistance in year prior to focal child's birth				
Yes	42.7%	30.2%	46.3%	32.7%
Receipt of TANF in prior year				
Yes	29.8%	20.5%	28.9%	18.4%
Ratio of income to poverty (M:SD)	0.90 (0.54)	2.23 (2.35)	0.88 (0.54)	2.27 (2.95)
Number of Adults in household				
One	28.3%	21.2%	37.1%	27.7%
Two	43.4%	54.6%	37.1%	27.7%
More than two	28.3%	24.2%	21.2%	18.5%
Number of Children in household				
One	26.3%	34.6%	27.3%	33.6%
Two	33.8%	33.9%	31.5%	34.6%
More than two	39.9%	31.4%	41.2%	31.8%

Source: Author's calculations using data from the Fragile Families and Child Well-being Study, waves two and three.



### 3 Results

#### 3.1 Bivariate results

The bivariate analysis confirmed that low-income mothers of young children who worked nonstandard schedules were more likely to use relative care than family day care or day care centers (as their primary arrangement) compared to those who worked standard schedules (table 2). More than 53 percent of mothers who worked a nonstandard schedule used relative care as their primary arrangement when the focal child was one, compared to 43.8 percent of those who worked a standard schedule; differences that were statistically significant (table 2). Conversely, only 30.1 percent of nonstandard schedule workers used a day care center when the child was one compared to 38.0 percent of standard schedule workers.

The differences were even larger when the focal child was three (table 2). Only 44.1 percent of those who worked nonstandard schedules when their child was three used a day care center as their primary arrangement, compared to 59.0 percent of mothers who worked standard schedules; a difference that was also statistically significant (table 2). This translated into similarly large differences in the percentage who used relative care as the primary arrangement (48.4 percent vs. 32.3 percent, respectively) (table 2).

**Table 2: Bivariate Relationships between Work Schedule and Child Care Arrangement for Low-income Mothers**

	Year One (n=1,127)			Year Three (n=1,237)		
	Relative care (n=568)	Family day care (n=196)	Day care center (n=371)	Relative care (n=894)	Family day care (n=392)	Day care center (n=592)
Work schedule						
Nonstandard	53.1%	16.8%	30.1%	48.4%	7.5%	44.1%
Standard	43.8%	18.2%	38.0%	32.3%	8.8%	59.0%

\*\*\* p<.001, \*\* p<.01, \* p<.05

Source: Author's calculations using data from the Fragile Families and Child Wellbeing study, waves two and three.

Differences in child care arrangement by work schedule were expected to result in differences in child care assistance receipt. Table 3 shows these bivariate relationships. Although a higher percentage of standard hour workers indicated receiving child care assistance at years one and three, the differences were not statistically significant. However, the bivariate differences in child care assistance receipt by child care arrangement were large and statistically significant. Among low-income mothers with a one-year-old child who used a day care center, 56 percent receive child care assistance compared to only 20 percent of those who used family day care and 14.4 percent of those who used relative care. Similarly large differences were seen for low-income mothers when the focal child was three (table 3).

**Table 3: Bivariate Relationships between Work Schedule, Child Care Arrangement and Receipt of Child Care Assistance for Low-income Mothers**

	Year 1 (n=1,127)		Year 3 (n=1,237)	
	Child care assistance (n=325)	No child care assistance (n=800)	Child care assistance (n=420)	No child care assistance (n=817)
Work Schedule				
Nonstandard	27.9%	72.1%	32.2%	67.8%
Standard	31.0%	69.0%	36.6%	63.4%
Child care arrangement				
Relative care	14.4%	85.6%	13.0%	87.0%
Family day care	20.0%	80.0%	19.2%	80.8%
Day care center	56.0%	44.0%	54.0%	46.0%

\*\*\* p<.001, \*\* p<.01, \* p<.05

Source: Author's calculations using data from the Fragile Families and Child Wellbeing study, waves 2 and 3.

The lack of a statistically significant bivariate relationship between work schedule and child care assistance was unexpected. However, further analysis of these relationships found that workers with nonstandard schedules were much more likely to have received TANF in the previous year, and the relationship between TANF receipt and child care assistance receipt was positive and statistically

significant. This further suggested the importance of conducting a multivariate analysis to control for these confounding factors.

### **3.2 *Multivariate analysis***

The multivariate path analysis explored beyond these bivariate relationships by controlling for several potential confounding factors. When holding these observable factors constant, the results suggested a negative indirect relationship between nonstandard work schedule and child care assistance receipt, which was entirely mediated by the use of day care centers. The top panel of table 4 presents the direct effects. The coefficient for nonstandard work schedule was negative but not statistically significant, suggesting no direct relationship. Factors that were directly related to child care assistance receipt included using a day care center or family day care (vs. relative care), past public assistance receipt, TANF receipt in the previous year, poverty status, and number of adults and children in the household (table 4).

The middle panel of table 4 reflects the potential mediating relationship between nonstandard work schedule and day care center use. The coefficient of -0.075 ( $p < .05$ ) suggests that a nonstandard work schedule reduced the likelihood of using a day care center, holding all other observable factors constant. Other factors were also statistically related to the use of a day care center, including race and number of adults in the household.

The bottom panel of table 4 reflects the indirect and combined effect of nonstandard work schedule on receipt of child care assistance when the focal child was one. The coefficient -0.028 ( $p < .05$ ) suggests a negative indirect relationship (as mediated by child care arrangement) and the negative total combined effect (coefficient -0.057,  $p < .05$ ) suggests that a nonstandard work schedule reduced the likelihood of receiving child care assistance, but entirely mediated by the relationship with day care center use.

**Table 4: Effects in Final Path Model Predicting Child Care Assistance at Year One (n=1,127)**

Dependent Variable	Coef.	Std. Err.	Sig
Child Care Assistance Received (Y/N)			
Nonstandard work schedule	-0.029	0.026	
<b>Child care arrangement (relative care=ref)</b>			
Day care center	0.370	0.028	***
Family day care	0.072	0.034	*
Age at baseline	0.020	0.019	
Age squared at baseline	0.000	0.000	
Married to baby's father	0.018	0.043	
<b>Race/ethnicity (Hispanic=reference)</b>			
White, non-Hispanic	-0.045	0.043	
Black, non-Hispanic	0.017	0.031	
Other, non-Hispanic	0.037	0.074	
<b>Education level at baseline (Less than high school=reference)</b>			
High school education alone	0.005	0.030	
Some college, no degree	0.014	0.034	
College degree or more	-0.075	0.076	
U.S. Citizen at baseline	0.054	0.042	
Public assistance in year prior to baby's birth	0.057	0.026	*
Receipt of TANF in year prior	0.152	0.028	***
Ratio of income to poverty	-0.072	0.025	**
<b>Number of adults in household at Year 3 (more than 2=reference)</b>			
One adult	0.105	0.034	**
Two adults	0.069	0.030	*
<b>Number of children in household at Year 3 (more than 2=reference)</b>			
One child	-0.107	0.032	**
Two children	-0.011	0.028	
Day care center			
Nonstandard work schedule	-0.075	0.030	*
High school education alone	0.052	0.033	
Some college, no degree	0.062	0.036	
College degree or more	0.083	0.082	
Race, non-Hispanic Black	0.145	0.028	***
One adult in household	0.075	0.031	*
<b>Indirect effect</b>			
Child care assistance			
Nonstandard work schedule	-0.028	0.011	*
<b>Total combined effect</b>			
Child care assistance			
Nonstandard work schedule	-0.057	0.028	*

\*\*\* p&lt;.001, \*\* p&lt;.01, \* p&lt;.05

Source: Author's calculations using data from the Fragile Families and Child Well-being Study, waves 2 and 3.

Table 5 summarizes the results from the model when the focal child was three. Similar to table 4, the top panel presents a negative direct relationship between nonstandard work schedule and child care assistance received, but this direct effect was not statistically significant. This means that work schedule was not directly related to receipt of child care assistance. The negative coefficient for nonstandard work schedule on day care center in the middle panel ( $-0.136, p < .001$ ) was statistically significant, suggesting that the relationship between nonstandard work schedule and use of a day care center mediated the relationship with child care assistance (table 5). The bottom panel presents the indirect effect of nonstandard work schedule on receipt of child care assistance (as mediated by child care arrangement), which was negative and statistically significant ( $-0.052, p < .001$ ). The combined total effect is also shown. The coefficient of  $-0.075$  ( $p < .001$ ) suggests that a nonstandard work schedule was negatively related to receipt of child care assistance, but the relationship was entirely mediated by a decreased likelihood of using a day care center (table 5). These results were almost identical to the results from the model when the focal child was one, although the coefficients suggest a slightly stronger indirect relationship between work schedule and receipt of child care assistance when the focal child was three.

**Table 5: Effects in Final Model Predicting Child Care Assistance at Year Three (n=1,237)**

Dependent Variable	Coef.	Std. Err.	Sig
Child Care Assistance Received (Y/N)			
Nonstandard work schedule	-0.023	0.025	
<b>Child care arrangement (relative care=ref)</b>			
Day care center	0.383	0.026	***
Family day care	0.077	0.046	
Age at baseline	-0.014	0.015	
Age squared at baseline	0.000	0.000	
Married to baby's father	0.062	0.045	
<b>Race/ethnicity (Hispanic=reference)</b>			
White, non-Hispanic	-0.072	0.043	
Black, non-Hispanic	0.020	0.032	
Other, non-Hispanic	0.228	0.083	**
<b>Education level at baseline (Less than high school=reference)</b>			
High school education alone	0.028	0.029	
Some college, no degree	0.010	0.034	
College degree or more	-0.081	0.095	
U.S. Citizen at baseline	0.062	0.046	
Public assistance in year prior to baby's birth	0.070	0.025	**
Receipt of TANF in year prior	0.141	0.029	***
Ratio of income to poverty	0.008	0.025	
<b>Number of adults in household at Year 3 (more than 2=reference)</b>			
One adult	0.053	0.034	
Two adults	0.023	0.032	
<b>Number of children in household at Year 3 (more than 2=reference)</b>			
One child	-0.101	0.031	**
Two children	-0.063	0.029	*
Day care center			
Nonstandard work schedule	-0.136	0.029	***
High school education alone	0.012	0.032	
Some college, no degree	0.072	0.037	*
College degree or more	0.308	0.106	**
Race, non-Hispanic Black	0.170	0.029	***
One adult in household (vs. more)	0.110	0.029	***
<b>Indirect effect</b>			
Child care assistance			
Nonstandard work schedule	-0.052	0.012	***
<b>Total combined effect</b>			
Child care assistance			
Nonstandard work schedule	-0.075	0.027	**

\*\*\* p&lt;.001, \*\* p&lt;.01, \* p&lt;.05

Source: Author's calculations using data from the Fragile Families and Child Well-being Study, waves 2 and 3.

## 4 Discussion

Child care assistance for low-income working parents can have important benefits for families. Not only can it relieve economic hardship, but it supports work, which can have other positive benefits for the family. But an effective child care assistance system is one that meets the needs of all working families. Increasingly, low-income parents work nonstandard schedules and this study shows that nonstandard work schedules reduce the likelihood of receiving government child care assistance.

Consistent with the study hypothesis, the relationship between work schedule and child care assistance receipt was entirely mediated by child care arrangement. Workers with nonstandard schedules were less likely to use day care centers, which meant that they were also less likely to receive child care assistance. This was true for mothers when the focal child was one and three, and when several potential confounding factors were controlled.

### 4.1 *Policy Implications*

The results suggest that the current system for administering direct child care subsidies favors standard schedule workers who are able to utilize day care centers. This is likely because states disproportionately license or register day care centers as eligible to receive subsidies. But it also likely reflects the way most states authorize care and payments as part of their subsidy system. States often require that applicants specify in advance the number of hours of care needed, as well as the provider. If applicants are approved, most states establish a direct payment system between the state and the provider. While not impossible, this type of system likely creates challenges for mothers who work nonstandard hours because they may not be able to predict their hours, and many likely use

multiple providers, require off-hour care, and need child care on short notice to meet their work schedule. The current system offers little flexibility to mothers faced with these challenges.

As a block grant program, states have some flexibility in administering CCDF child care subsidies. This study suggests that states should increase the availability of licensed/registered informal or relative providers, as well as increase the flexibility of child care subsidy use in efforts to better meet the needs of nonstandard work schedules. One potential solution is to offer child care benefits as part of an electronic benefit transfer (EBT) system, similar to cash and food benefits. This moves away from a system where states provide direct payment to providers to a system where recipients control their benefit. An EBT system could offer more flexibility to parents, especially those who need a combination of child care providers or who need child care on short notice. However, states would still need to ensure that enough licensed or registered providers are available to meet the needs of nonstandard schedule workers (including relative and informal providers), as well as ensure they are equipped to accept the EBT payment.

Kansas has operated their child care subsidy program in this manner for several years, although primarily as a way to streamline payments and reduce fraud. Wisconsin is expected to begin a similar program in late 2016, with a seemingly comparable purpose. Efforts like these should be explored at the federal level as a way to increase the feasibility of child care subsidies for workers with nonstandard schedules.

## **4.2    *Limitations***

A few limitations are worth noting. The study sample was limited to those under 200 percent of the federal poverty level to approximate a subsidy-eligible population. As argued by Herbst (2008) and Johnson, Martin, and Brooks-Gunn (2011), placing an income limit alone may be insufficient to fully capture a population eligible for child care subsidies. However, other restrictions on the sample



for this study, such as limiting it to those who worked for pay, eliminates the need to approximate some eligibility requirements, such as whether the person was in an approved work or education activity. Nevertheless, certain eligibility requirements that differ by state and are not controlled for in the model could partially explain the results. However, given that the results are largely consistent with existing literature (for example, nonstandard work hours are linked to child care arrangement and child care arrangement is linked to subsidy receipt) this limitation likely does not fully explain the indirect relationship between nonstandard work hours and child care assistance receipt that was detected in this analysis.

Another limitation is the data source and measures. While the Fragile Families study is representative of nonmarital births in U.S. cities with populations over 200,000 (McLanahan et al, 2003), it is not representative of all child care subsidy-eligible families in cities or more broadly. It also only includes respondents from urban areas and the results may not be applicable to mothers residing in non-urban areas. A related issue is survey attrition and missing data. Survey attrition was a minor problem, with 90 percent of mothers interviewed at year 1 and 86 percent at year 3 (Bendheim-Thoman Center for Research on Child Wellbeing, 2008). Missing data was also a minor issue, with 91 percent of year 1 respondents providing complete data and 88 percent of year 3 providing complete data. Nevertheless, attrition and missing data limits the generalizability of the study results. In addition, the data used for this study reflects data from the early 2000s. It is not clear whether the results would be replicated using more recent data.

In terms of the measures, the receipt of child care assistance was based on self-reported information. Misreporting government benefit receipt is always a concern with survey data (see Meyer, Mok, and Sullivan, 2009) and the results should be interpreted with this in mind. The last issue is that this study reflects primary child care arrangement. It is possible that this understates the extent to which standard hour workers use relative care and nonstandard hour workers use day care

centers. As such the results should be interpreted as the relationship between work schedule and primary child care arrangement.

### **4.3 Conclusion**

This study makes a number of important contributions to the literature. It adds to our understanding of what influences child care subsidy receipt by finding that nonstandard work schedule plays an indirect role. It also adds to the literature the importance of considering both the direct and indirect determinants of child care assistance receipt. While existing research identifies a number of family characteristics and preferences that are directly related to subsidy receipt, this study considers the indirect pathway in which nonstandard work schedule influences child care assistance receipt. This study also adds to the literature differences in the determinants of child care assistance receipt by age of child. While nonstandard work schedule was indirectly related to child care assistance receipt for parents of infants as well as three-year olds, the relationship was stronger when the child was older. The main policy implication is that work schedule may limit the availability of child care assistance because mothers working nonstandard schedules are less likely to use day care centers. The existing government child care assistance program needs to offer more variety in type of child care, as well as more flexibility for nonstandard schedule workers, especially when the child is older than age one.

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