The Implications of the Expansion of Nonstandard Employment for Children's Health

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In spite of evidence that suggests that characteristics associated with nonstandard jobs may have negative effects on children's health, these relationships have not yet been examined empirically. To fill this gap, this study examines the associations between mothers' nonstandard employment and children's health outcomes and whether these associations differ by family structure using representative longitudinal data on children and mothers (from NLSY79 Children and Young Adults and NLSY79). This study also evaluates three potential linkages that may underlie these associations: low wages, lack of health insurance, and nonstandard work hours. Results from the logistic regression models show that a mother's nonstandard employment would be more detrimental to children's health in single-mother families than in two-parent families. Study results also suggest that the coverage and source of health insurance are important factors accounting for the poor health outcomes of children in single-mother families with nonstandard employment. The implications of the study's findings and suggestions for future research are discussed.

The expansion of nonstandard employment, one notable feature of the changing employment landscape in the labor market since the mid-1970s, has been the subject of growing concern as nonstandard employment tends to be associated with "bad job" characteristics potentially detrimental to worker's well-being and health (e.g., Houseman and Osawa 2003; Kalleberg, Reskin, and Hudson 2000; Kalleberg 2009). Previous studies also suggest that characteristics closely associated with nonstandard jobs (e.g., low wages, lack of health insurance, and nonstandard work hours) may have negative effects on children's health of those working in nonstandard jobs. Despite this speculation, empirical examinations of these relationships have yet to be conducted. In this study, I use nationally representative longitudinal data on children (NLSY79 Children and Young adults) and mothers (NLSY79 Children and Young Adults) to fill this gap by examining relationships between a mother's nonstandard employment and children's health. I also evaluate several mechanisms that may underlie this association, including low wages, health insurance coverage, and nonstandard work hours. Since the relationship between maternal employment and child health (and the role of linkages) might differ by family context (e.g., Presser 2003), I examine this relationship and the linkages by varying family structure, i.e., examining differences between single-parent and two-parent families. Findings from this study will expand our understanding of the determinants of children's well-being and health and differentials therein. Study results are also important in light of the growing proportion of population that is exposed to nonstandard employment.

Theoretical and empirical background

Recent labor market changes and the expansion of nonstandard employment

Substantial changes in the labor market since the mid-1970s have exerted potentially profound influences on individuals, families, and society (Kalleberg 2009). Driven by globalization and

economic restructuring, cost reduction and flexibility on the demand side have become more important than employment stability on the supply side, and the resultant labor market changes, such as the decline in well-paying manufacturing jobs, variation in employment relations, and the decline in unionized jobs are well documented (e.g., Kalleberg 2000; 2009; Kalleberg, Reskin, & Hudson 2000; Loveman & Tilly 1998). These changes all suggest that the meaning and nature of work may have changed and that being employed now implies different resources and leads to differing individual consequences which depend largely on the characteristics and quality of jobs filled by workers (Kalleberg 2009).

One notable example of the changing employment landscape is the rapid expansion of nonstandard employment, which does not fit into the traditional definition of "job" (i.e., full-time, permanent employment in which the employee has a direct relationship with their employer) (Houseman and Owasa 2003; Kalleberg 2000). More specifically, nonstandard employment, or nontraditional employment, is a term which includes part-time employment, day labor, on-call work, work with temporary-help agencies, contract-company employment, self-employment and family work (for a review on the definitions and variety forms of nonstandard employment, see Kalleberg 2000). The growth of nonstandard employment has been widely observed across developed countries (Houseman and Osawa 2003) and the U.S. is no exception to the global trend. According to Current Population Survey (CPS), in 1995 more than one-third of Americans over the age of 17 then working in the paid labor force held nonstandard jobs (Kalleberg, Reskin, and Hudson 2000). The growing concern with regard to the rapid increase of nonstandard jobs is connected to the fact that such jobs tend to have several characteristics that have been shown to be detrimental to workers' well-being and health. Nonstandard jobs, for instance, are more likely than standard jobs to provide low wages, no health insurance and no

pension coverage, and to be associated with nonstandard work schedules (Houseman and Osawa 2003; Kalleberg et al. 1997). Due to the growing share of nonstandard employment and its association with "bad job" characteristics, there is a growing body of research that examines the implications of the expansion of nonstandard employment for individual workers, families, and the society as a whole.

The expansion of nonstandard employment and children's health

Previous studies are limited in that most focus on the impact of nonstandard jobs on (adult) worker's well-being and pay little attention to the implications of a parent's nonstandard employment on their children's health (Yoshikawa, Weisner, and Lowe 2006). This is unfortunate because there are compelling reasons to expect that the expansion of nonstandard employment may have important implications for children's health and well-being. First, the growing share of nonstandard employment means both that many workers are experiencing an increase in economic instability and uncertainty, and that workers are more likely to be exposed to precarious work or "bad jobs" (Kalleberg 2009; Kalleberg, Reskin, and Hudson 2000). This is particularly true for those with few resources (e.g., those with low education and low skills) who have lost significant ground in the labor market during the past few decades. Given that parental employment stability and job quality are among the most important predictors of children's educational, behavioral, and health outcomes (For a detailed review, see White and Rogers 2000 and Seccombe 2000), the increase in rates of nonstandard employment suggests that a growing proportion of children will be adversely affected. The negative consequences of this trend may be particularly pronounced for children whose parents have few resources valued in the labor market (McLanahan 2004).

Another important feature of the expansion of nonstandard employment with regard to children's health is the overrepresentation of women, especially married women, in this type of employment (Cassirer 2003; Houseman and Osawa 2003; Kalleberg 2000). There is a large body of literature on the effects of maternal employment on children's outcomes (e.g., Han, Waldfogel, and Brokks-Gunn 2001; Strazdins et al. 2006) implying that "the feminization of nonstandard employment" (Kalleberg 2000) may have a substantial influence on children's health and well-being. Changes in mother's employment associated with the rise of nonstandard employment are particularly important in the context of several studies of recent demographic changes which indicate that the role of mother's employment has become more important for their own well-being and that of their families, their children in particular (e.g., Cancian and Reed 1999; McLanahan 2004). Given the correlation between nonstandard employment and low education (Cassirer 2003) and concentration of single-mother families among the low educated women (Casper and Bianchi 2002), women's disproportionate representation in nonstandard employment is also likely to be highly relevant to the discussion surrounding the effects of welfare reform on low-income single mothers and their children. As some scholars have argued, recent welfare reform promoting self-sufficiency through employment might not be as effective as hoped if that the low-income employment obtained by (mostly low skilled) mothers cannot support them and their children (for the review on the arguments about welfare reform, see DeParle 2004; Haskins 2001).

The present study: Hypothesized linkages

As discussed earlier, nonstandard jobs tend to have several "bad job" characteristics considered potentially negative for individual workers. Research evidence also suggests that some of these characteristics may be associated with children's health. Low wages, for instance, a common

characteristic found in many nonstandard employment arrangements, might reduce families' ability to provide children with nutritious food and with safe and clean shelter, each of which in turn negatively affects children's healthy development (e.g., Jackson 1993; Lewit and Kerrebrock 1997). Low wages might also increase economic hardship, which increases parental stress and undermines parenting quality factors which can be expected to diminish children's health and well-being (e.g., Lovejoy et al. 2000). Therefore, nonstandard employment might negatively affect children's health through its association with low wages.

The absence of health insurance in many nonstandard jobs is another important factor for children's health, particularly in the U.S., where the government does not provide universal health care and there is a relatively limited safety net for the uninsured. Research has shown that having no health insurance is associated with less frequent use of health care, poorer overall health, and more serious effects from illness among families in the U.S. (e.g., Budetti et al. 1999). The potentially negative effect of the lack of health insurance on children's health (due to the expansion of nonstandard employment) might be mitigated thanks to the expansion in the public health programs like Medicaid and the State Children's Health Insurance Program (CHIP, since the late 1990s). Research shows that the proportion of children uninsured had continued to decline in recent years and in 2009, about 90 percent of children are insured either by private insurance (55 percent) or public health programs (33 percent) (Kasier 2011). Of children in low-income families, more than half (59 percent) are covered by Medicaid and CHIP (Kasier 2011). While these rates of coverage seem promising, some research evidence has suggested that public health care programs might be inferior to comparable private programs (for a detailed review, see Swartz 2009). For example, existing evidence shows that recipients of Medicaid (both children and adults) tend to use emergency rooms more than doctors' clinics and are less likely

(than those covered by private health insurance) to receive continuous care (e.g., St. Peter, Newacheck & Halfon 1992). Therefore, it is probable that an increase in nonstandard jobs (which does not provide health insurance) may affect children's health negatively since more children are likely to be uninsured or have to rely on public health care. Also, the worrisome evidence that a substantial number of children remain uninsured despite being eligible for public health programs demonstrates the importance of understanding the family characteristics of these children in greater detail (Kaiser 2011). In sum, there is much evidence to suggest that a mother's nonstandard employment can be associated with poorer children's health, particularly since many nonstandard jobs do not provide health insurance.

Nonstandard employment could also affect children's health since it is often associated with nonstandard work hours (e.g., evening, night, and weekends). Nonstandard work hours are found to affect family relationships and functioning (Presser 2003; White and Keith 1990) as well as workers' physical and mental health (Costa 1996; Taylor, Briner, and Folkard 1997), both of which might be negatively associated with children's health (e.g., Lovejoy et al. 2000). Nonstandard jobs held by mothers may also influence the amount and quality of parental time and involvement in children's lives. There is evidence that parents' nonstandard work schedules have a negative impact on parent-child relationships (La Valle et al. 2002) and parental interactions with children such as reading, playing together, and helping with school work (Heymann and Earle 2001). In a study on children's well-being in dual-earner families, children whose parents work nonstandard work schedules (i.e., other than regular day shifts) were more likely than their counterparts with parents working standard work schedules to have social and emotional difficulties (Strazdins et al. 2006). All of this evidence highlights the potential role of

nonstandard work schedules in linking parents' nonstandard employment and children's worsened health outcomes.

Moderating effects of family structure

Although there is substantial evidence suggesting that mother's nonstandard employment might be associated with children's poor health via characteristics such as low wages, lack of health insurance, and nonstandard work schedules, this association may not be found in all families. For example, low wages and lack of health insurance may be more harmful for children in single-mother families where a mother with nonstandard employment is the sole earner. Similarly, nonstandard work schedules pose a greater problem in single parent families where another parent is not available to help with child care while a mother is working (Presser 2003). On the contrary, if nonstandard work hours are the result of a deliberate choice made by parents to balance family between spouses (Presser 2003), having a nonstandard job with non-regular working hours might result in fewer negative consequences for children's health than otherwise expected. In fact, some scholars have argued that nonstandard employment is not necessarily bad for women and their families, because it gives women, especially married women, greater choice and flexibility in their employment schedules, helping these women balance work and family (e.g., Blossfeld 1997; Hakim 1995, 1997). Considering this moderating effects of family structure, I will evaluate relationships between mother's nonstandard employment and children's health by differentiating family structure (i.e., whether a mother working at nonstandard employment is a single parent or not), with the expectation that a mother's nonstandard employment will be more detrimental to children's health in single-mother families than in two-parent families since families led by single mothers are more likely to rely on the mother's wages

for survival and do not have another parent to share child care responsibilities or provide health insurance through employment.

Data and methods

Data

In this study I use data from the National Longitudinal Survey of Youth (NLSY79) and the NLSY79 Children and Young Adults (NLSY79 Children). The NLSY79 is a longitudinal survey of men and women born in the years 1957-64 (ages 14 to 22 years old in 1979) and provides information updated annually (biennially after 1996) on labor market activities and other significant life events. With regard to data collection on nonstandard employment, most surveys did not include the details on differential employment arrangements (e.g., temporary or contract work) that could be used to correctly identify nonstandard employees. Efforts to collect the data of the distribution and characteristics of nonstandard employment began in mid-1990s, including the Current Population Survey (CPS) and its supplement on contingent work. In 1994, the NLSY79 began to collect detailed information on various employment arrangements such as contract work, consultancy, or temporary employment, in addition to the originally provided information on labor force participation and job characteristics (e.g., work hours, hourly wage, class of worker, unionization).

The NLSY79 Children is a biennial survey beginning in 1986 of the biological children born to NLSY79 female respondents. In addition to the mother's (and family's) information from the original NLSY79, the child survey contains demographic, developmental, and health information on each child, which makes it an exceptionally useful data source for examining intergenerational relations between parental employment and children's health.

For this study, I used data from 1994 to 2008, a period for which the NLSY79 collected detailed information on nonstandard employment. Using the unique identification code assigned to the NLSY79 cohorts, I linked child information obtained from the NLSY79 Children data with mother's information from the NLSY79 data. Since I am interested in the relationships between nonstandard employment and children's health, I restricted analytical sample to children whose mothers (and fathers in two-parent families) are employed.

Measures

The dependent variable is children's health limitations based on mothers' reports on children's health conditions. This dichotomous variable (1= yes; 0= no) indicates whether a child has any health condition that limits usual childhood activity, school attendance, or school work. Children below age 2, the earliest age reported to attend preschool, were thus excluded from the analytic sample.

The independent variable of main interest is a categorical variable which incorporates mother's employment type (i.e., standard or nonstandard employment) and family structure (i.e., two parent families or single parent families). As discussed earlier, since the relationship between maternal employment and children's health might differ by family structure, I classified mothers into four groups: single mothers with standard employment, single mothers with nonstandard employment, mothers in two-parent families with standard employment, and mothers in two-parent families with nonstandard employment.[1]

[1] I categorized both families with two married parents and cohabiting families as two-parent families. In two-parent families, I did not differentiate whether their spouses or partners had nonstandard employment or not, because the available information on the employment characteristics of spouses and partners is limited relative to that of the survey's primary respondent. In the absence of reliable data, underestimating the proportion of spouses/partners who have nonstandard jobs seems very likely. In the preliminary analyses, I also examined whether the father's employment type in two-parent families is associated with children's health

With regard to the classification of mother's employment type, The NLSY79 provides information on each job (up to five) that a respondent has had, noting such things as wage, work hours, class of worker (e.g., self-employees, family workers), various employment arrangements (e.g., regular employee, temp worker, consultant or contractor), the provision of fringe benefits, and work schedules. It also provides information on the start and end date of each job, which allows me to identify the job a mother is currently working in at the time of interview. Using this information and following the criteria used in earlier studies (e.g., Ferber and Waldfogel 1998, Kalleberg 2000), I categorized part-time work, self-employment, family work, temporary, contract, or consultant work as nonstandard jobs (See Kalleberg 2000 for the discussion on the definition and categories of nonstandard employment).

As for the posited linkages between mother's employment type and children's health, I include the coverage and source of children's health insurance, nonstandard work schedules, and low wages. First, children's health insurance coverage and source, constructed as a categorical variable, includes four groups: no health insurance, employer-provided/private health insurance, Medicaid, and a mixture of both private health insurance and Medicaid. The last category is relevant for children whose household income is under certain limits (depending on family size) and are thus eligible for Medicaid regardless of their insurance coverage.

Nonstandard work hours is based on the information on work hours and shifts (for each job), which includes the following categories: regular day shift, regular evening shift, regular night shift, shift rotates (changes periodically from days to evenings or nights), split shift, and irregular schedule or hours. Women having other than regular day shift, i.e., nonstandard work schedule, were coded as 1 and those working at regular day shift were coded as 0.

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limitations but found no significant differences. As a result, I differentiated only mothers' employment type in two-parent families.

Low wages are constructed as a dichotomous variable, which is coded as 1 if the hourly wages are located in the bottom twentieth percentile in a distribution of the hourly wages for all women's jobs in a given year. Those with hourly wages over the twentieth percentile are coded as 0.

I also control for several demographic and socioeconomic variables which may be associated with children's health and maternal employment. These include mothers' characteristics (e.g., age, race, and educational attainment) as well as children's age, gender, and the number of total children in the household (e.g., Lovejoy et al. 2000; Seccombe 2000).[2]

Methods

In this study, I use logistic regression models given the outcome of interest (i.e., having health limitations) and evaluate whether the risk of having health limitations is associated with a mother's employment type and family structure, and what would be the linkages that may underlie this association.

For this purpose, I estimate five models: the first model estimates the relationship between a mother's having nonstandard employment and health limitations of her children, net of mother's and child's background characteristics. The second model examines how the association observed in the first model changes when (children's) health insurance coverage is added. The third model includes nonstandard work schedules and then, in the fourth model, I add low wages. The fifth model (full model) includes all three hypothesized linkages tested in the second to fourth model.

Results

[2] The NLSY provides the information on a child's race based on his/her mother's racial/ethnic classification.

Table 1 presents descriptive statistics (means and standard deviations) of the variables used in the analysis for the entire sample as well as data corresponding specifically to mother's employment type and family structure. The proportion of children having health limitations (in a given year) is 0.13 for the whole sample and is slightly lower among children whose mothers have standard jobs (0.12) in both single-parent and two-parent families than among their counterparts whose mothers' have nonstandard jobs. Among children whose mothers work in nonstandard jobs, those in single-parent families have the highest proportion of health limitations (0.15).

The proportions of mothers by employment type are similar: 45 percent of women worked at standard employment and 49 percent at nonstandard employment. This distribution is comparable to that reported in another study, which used the same NSLY79 data and found almost half (0.48) of the working women had a nonstandard job between 1994 and 1998 (at least at one survey point) (Cassirer 2003). The mean age of mothers in the sample is 38 years.

As for racial differentials, family structure is more important than employment type: Blacks are concentrated in single-parent families regardless of their employment type, reflecting the high prevalence of nonmarital childbearing and lower rates of marriage among the Black population (Casper and Bianchi 2002). Similarly, the patterns of group differences in mothers' educational attainment show a concentration of low educated women (i.e., women with a high school education or less) in single-parent families and higher percentages of university graduates in two-parent families.

The mean age of children in this sample is about 9 years with little variation across four groups (i.e., single-mother families with (non)standard employment, two-parent families with (non)standard employment). The gender composition of each child group was also found to be

similar across all groups with (about) 50 percent female children in each group. With regard to the number of children in the household, women with nonstandard employment tend to have more children in their households than those with standard employment, evidence which may support the hypothesis that family responsibilities affect mothers' decisions to work at nonstandard jobs (Hakim 1995, 1997).

[Table 1 about here]

Turning to posited linkages between mothers' nonstandard employment and their children's health, there are substantial differences in children's health by mother's employment type and family structure. The proportion of uninsured children in the total sample is 7 percent and a substantial majority of children (81 percent) were covered by employer-provided or private health insurance. An additional 7 percent of children were on Medicaid (a proportion which increases to 12 percent if we include those with a mixture of both public and private health insurance). Children in the analytical sample, as a whole, fared well in terms of both health insurance coverage and the use of public health care programs. We should note, however, that only children in families where both mothers and fathers (or mothers' cohabiting partners) were employed were included in the analyses. More detailed examination of the distribution and sources of health insurance coverage reveals substantial group differences: children in two-parent families, regardless of their mother's employment type, are more likely to have employer-provided or private health insurance relative to their counterparts in single mother families. In two-parent families, the high percentage of children covered by employer-provided health insurance and the low percentage of Medicaid use in families where mothers worked at nonstandard jobs both indicate that children in two-parent families are likely to be covered through their father's employers (even if mothers' jobs do not provide health insurance).

Children in single-mother families, on the other hand, are more likely than those in two-parent families to rely on Medicaid or have health insurance through some combination of both public and private health care programs. The higher prevalence of Medicaid use in single-mother families reflects the fact that these families tend to have low incomes (thus making them eligible for Medicaid services). Analysis of the data shows that the percentage of women working in jobs with low wages was indeed greater among mothers with nonstandard employment, a trend that was particularly true in the case of single mothers (42 percent of whom worked in jobs with low wages). The proportion of mothers working nonstandard work hours was also much higher among those with nonstandard employment, which reflects the greater prevalence of nonstandard work schedules in these jobs (Houseman and Osawa 2003) and/or deliberate choices made by mothers to balance work and family (e.g., Blossfeld 1997; Hakim 1995).

Table 2 presents the results from logistic regression models for the risk of having health limitations in the forms of log-odds ratios. Standard errors (in parentheses) are adjusted for the interdependence resulting from multiple observations of same children. The baseline model includes mothers' employment type by family structure (i.e., single-mothers with (non)standard employment and mothers with (non)standard employment in two-parent families) and several background variables, ranging from mothers' characteristics (e.g., age, race, and educational attainment), children's age and gender, to the number of total children in the household. Results for Model 1 show that (increase in) mother's age increases the risk that a child has health limitations and that child age is also associated with the greater likelihood of having health limitations.

As for racial differentials in the risk of children's health limitations, both Black and Hispanics mothers report that their children have fewer health limitations than Whites mothers

do. Children whose mothers had higher levels of education (relative to those having mothers with high school or less) are also reported to have more health limitations. In addition, female children are less likely to have health limitations than male children, and the presence of more than two children in a household is negatively associated with the risk that a child has health problems.

Coefficients for mothers' employment type and family structure indicate that children in single mother families where mothers have nonstandard employment are more likely to have health limitations (relative to children in two parent families who had mothers with standard employment). Coefficients for children whose single mothers work at standard jobs and children in two-parent families whose mothers have nonstandard employment are positive but are not statistically significant. These results suggest that relationships between mother's nonstandard employment and children's health differ by family structure and that a mother's nonstandard employment would be more detrimental to children's health in single-mother families than in two-parent families.

[Table 2 about here]

Model 2 adds the coverage status and source of children's health insurance to see whether the relationships found in the baseline model between maternal employment type, family structure, and children's health found changes when health insurance status is considered. After adding the information on children's health insurance, the significantly higher risk of having health limitations among children who live with single mothers having nonstandard employment disappears. Coefficients for children's health insurance suggest that those who have Medicaid (including children with a combination of both private health insurance and Medicaid) are more likely to have health limitations compared to children covered solely by private health insurance.

This increased risk of health limitations among children on Medicaid is consistent with research evidence that raises concerns about the quality of public health care programs (See Swartz 2009, for a literature). It may also result from the behavior of Medicaid recipients, who tend to use health services in emergency situations rather than as preventive care (e.g., St. Peter, Newacheck & Halfon 1992). Given that a high proportion of single mother families rely on Medicaid (Table 1) and that the inclusion of child health care in the model mostly changes the coefficients for single mother families (with both standard and nonstandard employment), mothers' nonstandard employment seems to have particularly negative implications for children's health in single mother families. Furthermore, the finding that having a combination of both private and public health insurance does not reduce the risk of having health limitations (relative to being covered solely by private insurance) indicates that children in this category might be more likely to rely on Medicaid than private insurance and/or the quality of their private insurance provided through their mothers' employment may be poor.

It is also worth noting that uninsured children have fewer health limitations than children with private health insurance. This is a rather surprising finding, so I checked the patterns of mothers' reporting on children's health limitations. Interestingly, across all groups of mothers, regardless of their employment type and family structure, those with uninsured children report fewer health limitations for their children (author's own tabulation). It is possible that parent(s) with children who have health problems are more likely than those whose children are healthy try to stay covered by health insurance either through employment or public health programs. At the same time, it is also possible that parents of uninsured children (presumably low-income families) are unaware of or have failed to detect health problems that their children have. There is evidence that children (and adults) in poor families often leave their health problems untreated

(e.g., Budetti et al. 1999). Also, the fact that a substantial number of poor families eligible for Medicaid are still uninsured suggests that they may differ from the general population in family characteristics, attitudes, and behaviors with regard to health care usage and health behaviors. These are speculative explanations (with some supporting evidence) and will need to be evaluated in more detail in the future.

In model 3, I add nonstandard work hours, another posited linkage between mother's nonstandard employment and children's health. The coefficient for nonstandard work hours is positive but is not statistically significant. Compared to model 1, there are little changes in the coefficients for mothers' employment and family structure: only children living with single-mothers working at nonstandard employment have worse health outcomes than children in other categories. Introducing nonstandard work hours into the model does not result in much change in the coefficients for other variables either.

The measure for low wages is included in model 4. As described in the data and methods section, low wages are defined as hourly wages in the bottom twentieth percentile of the hourly wages for all women's jobs in a given year. As expected, low wages increase the risk for children to have health limitations. However, children of single mothers with nonstandard employment still have significantly higher likelihood of having health limitations compared to the reference group (children in two-parent families where mothers have standard employment). Also, the coefficients for other variables changed little compared to the baseline model.

Finally, model 5 (the full model) is presented with all three hypothesized linkages between mother's nonstandard employment and children's health outcomes, i.e.., health insurance converge and source, nonstandard work hours, and low wages with background variables. Results from the model 5 show that children on Medicaid, including those with some

combination of both private and public health insurance, are still more likely than children covered by employer-provided or private health insurance to have health limitations. Having no health insurance, on the contrary, is still inversely related to children having health limitations, as found in model 2. The coefficients for nonstandard work schedules and low wages are positive but not statistically significant. In addition, the significantly higher likelihood of having health limitations for children living with single mothers employed at nonstandard jobs found in the previous models (models 1, 3, and 4) now disappears. As seen from the changes in the direction and size of coefficients for mother's employment and family structure in the previous models, it is due to the inclusion of health insurance coverage and source.

Conclusions and discussion

In this study, I examined interrelationships between mothers' nonstandard employment, family structure, and children's health using nationally representative longitudinal data on children (NLSY79 Children and Young adults) and mothers (National Longitudinal Survey of Youth). I also evaluated three potential linkages that may underlie these relationships, i.e., children's health insurance coverage and source, nonstandard work hours, and low wages.

Results show that at baseline children in single-mother families whose mothers are working at nonstandard jobs have significantly higher risk of having health limitations. Results also suggest that the coverage and source of health insurance is an influential mediator of the relationship between children's higher likelihood of having health limitations and mothers' nonstandard employment. However, I could not find supporting evidence for the mediating role of nonstandard work hours and low wages linking mother's nonstandard employment and children's health outcomes.

Considering labor market changes, e.g., a decline in full-time, standard jobs with fringe benefits and an increase in nonstandard jobs with poor job quality, and demographic trends, e.g., an increase in single-mother families, especially among disadvantaged populations, the findings of this study have important implications not only for children's overall well-being but also for (the process of) social inequality. My study adds another piece of evidence to the literature on the potentially negative consequences of growing up in single-mother families by showing that children in these families where their mothers cannot secure standard jobs are more likely to suffer from worsened health. Also, given the lingering effects of early childhood health on various outcomes at later ages (Palloni 2006) and the importance of family structure as a mechanism of reproducing inequality (McLanahan and Percheski 2008), the poor health of children (in single-mother families where the mother has a poor quality job) could be another pathway of intergenerational transmission and result in exacerbating existing social stratification.

In addition, this study lends some support to the contention of some scholars that recent welfare reform which promotes the self-sufficiency of single-mother families through employment may not necessarily bring about the desired positive effects on children's well-being (For a review, see Edin and Kissane 2010). New jobs created in the labor market are increasingly nonstandard jobs (Houseman and Osawa 2003) and the education and skill levels of many single mothers are such that it is likely that they will be employed at nonstandard jobs without benefits. The results of my study suggest that this kind of employment might not be beneficial for children's health. There is also some evidence that employment does not always improve the circumstances of single mother families who leave welfare for work, especially with regard to health (e.g., Danziger et al. 2002). Therefore, future policies will need to take into account the labor market context that single-mothers face and consider various outcomes that

single mother's employment are likely to bring about, including its potential impact on children's health.

Lastly, I would like to conclude with the limitations of the present study and some suggestions for future research. First, study results showed that there is a positive association between mother's nonstandard employment and children's health limitations and this association depends on family structure, i.e., two-parent families or single-mother families. However, we should note that the present study is limited to provide evidence for the casual inference. In order to examine the (causal) relation between maternal work and children's health, it is important to consider selection factors and the potential role of unobserved heterogeneity. Healthy individuals who tend to have healthy children, for instance, may be selected into marriage and better jobs (i.e., standard employment) which would mean that observed associations between nonstandard jobs of mothers in single-mother families and decreased children's health may be spurious. Similarly, observed negative health outcomes may be more closely related to characteristics of children not observed in the survey (like personality problems) than the type of maternal employment as hypothesized in this study. Therefore, research methods which deal with unobserved heterogeneity will help us better understand the extent to which maternal employment in nonstandard jobs affects children's health and the extent to which selection accounts for the observed relationship.

In addition, I simplified family structure based on the presence of a father or mother's partner and did not differentiate for fathers' or cohabitating partners' employment type or job characteristics. As described earlier, the NLSY79 is limited in way that does allow researchers to fully examine fathers' (or partners') employment characteristics and link them to children's health outcomes. Studies using other data sources that contain detailed information on fathers'

employment are needed to expand our understanding of how overall parental employment (e.g., having nonstandard employment without fringe benefits) is associated with children's health outcomes in the context of labor market changes in recent years.

Future research will also need to identify other linkages that may underlie the associations between maternal nonstandard employment, family structure, and children's health that my study did not evaluate. For instance, economic instability (e.g., low wage, short-term employment) and inferior job quality (e.g., lack of benefits) associated with nonstandard employment (Kalleberg, Reskin, and Hudson 2000) might increase economic hardship, which increases parental (maternal) stress and undermines the quality of parenting, both of which would be expected to diminishes children's health and well-being (e.g., Lovejoy et al. 2000). Studies examining the relationship between job insecurity, nonstandard employment and workers' health have consistently reported that the combination of job insecurity and nonstandard employment is negatively associated with psychological health and job satisfaction (e.g., Hellgren et al. 1999) and contributes significantly to increased mental health complaints (Hellgren & Sverke 2003) and physical strains (De Witte 1999). Considering the evidence that maternal health is important for children's well-being and health (e.g., Lovejoy et al. 2000), nonstandard employment might negatively affect children's health through its association with mothers' poor health.

Taken together, the results and the limitations of the current study both suggest that the relationships between mothers' (and fathers') employment type (and job characteristics) and children's health and well-being are research topics of great importance and of much room for future research in the context of changing labor market.

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Table 1: Sample characteristics, by mother's employment type and family structure

Variables	Total	Single-mother, Standard	Single-mother, Nonstandard	Two-parent, Standard	Two-parent, Nonstandard
Having health limitation [a]	0.13	0.12	0.15	0.12	0.13
Mother's employment type and family structure					
Single-parent families with standard employment	0.15	1.0	0.0	0.0	0.0
Single-parent families with nonstandard employment	0.10	0.0	1.0	0.0	0.0
Two-parent families with standard employment	0.30	0.0	0.0	1.0	0.0
Two-parent families with nonstandard employment	0.39	0.0	0.0	0.0	1.0
Mother's age	38.0 (4.4)	36.7 (4.1)	38.8 (4.6)	37.2 (4.2)	38.9 (4.4)
Race					
Hispanic	0.19	0.16	0.20	0.22	0.17
Black	0.27	0.51	0.44	0.24	0.15
White	0.54	0.32	0.36	0.53	0.68
Mother's education					
High school or less	0.47	0.58	0.56	0.46	0.42
Some college	0.28	0.32	0.30	0.28	0.27
University or more	0.25	0.11	0.13	0.26	0.32
Child age	8.9 (3.4)	9.3 (3.2)	9.7 (3.2)	8.6 (3.5)	8.8 (3.4)
Child gender					
Male	0.50	0.50	0.51	0.51	0.50
Female	0.50	0.50	0.49	0.49	0.50
Number of children in the household					
1	0.15	0.23	0.18	0.15	0.10
2	0.44	0.40	0.37	0.48	0.44
3+	0.41	0.37	0.49	0.37	0.46
Health insurance coverage and source (child)					
Uninsured	0.07	0.08	0.10	0.06	0.07
Employer-provided/private health insurance	0.81	0.72	0.52	0.89	0.85
Medicaid	0.07	0.13	0.24	0.03	0.05
Having both private insurance and medicaid	0.05	0.07	0.14	0.02	0.03
Nonstandard work schedules [a]	0.26	0.20	0.34	0.13	0.30
Low wages [a]	0.32	0.24	0.42	0.16	0.31
N	17433	2663	1814	6176	6780

Notes:

1. Standard deviation in parentheses
2. a: Dichotomous variable coded 1=yes, 0=no
3. In some cases, totals do not sum up to 1 due to rounding errors

Table 2: Log-odds of having health limitations

Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Mother's employment type and family structure					
Single-parent families with standard employment	0.126	0.090	0.124	0.122	0.074
	(0.092)	(0.093)	(0.092)	(0.092)	(0.092)
Single-parent families with nonstandard employment	0.293**	0.192	0.288**	0.263**	0.152
	(0.098)	(0.102)	(0.099)	(0.098)	(0.103)
Two-parent families with standard employment (ref)					
Two-parent families with nonstandard employment	0.068	0.061	0.064	0.045	0.048
	(0.068)	(0.068)	(0.068)	(0.068)	(0.068)
Mother's age	0.023**	0.021**	0.023**	0.024**	0.022**
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Race					
Hispanic	-0.261**	-0.265**	-0.260**	-0.265**	-0.261**
	(0.089)	(0.090)	(0.089)	(0.089)	(0.090)
Black	-0.296**	-0.347**	-0.297**	-0.305**	-0.358**
	(0.086)	(0.087)	(0.086)	(0.086)	(0.087)
White (ref)					
Mother's education					
High school or less (ref)					
Some college	0.209**	0.240**	0.209**	0.229**	0.260**
	(0.077)	(0.078)	(0.077)	(0.078)	(0.079)
University or more	0.199*	0.236**	0.200*	0.226*	0.285**
	(0.088)	(0.090)	(0.088)	(0.089)	(0.091)
Child age	0.058**	0.060**	0.058**	0.058**	0.060**
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Child gender					
Male (ref)					
Female	-0.573**	-0.570**	-0.573**	-0.573**	-0.573**
	(0.067)	(0.067)	(0.067)	(0.067)	(0.067)
Number of children in the household					
1 (ref)					
2	-0.255**	-0.263**	-0.255**	-0.256**	-0.264**
	(0.086)	(0.086)	(0.086)	(0.086)	(0.086)
3+	-0.493**	-0.528**	-0.494**	-0.500**	-0.529**
	(0.091)	(0.091)	(0.091)	(0.091)	(0.092)
Health insurance coverage and source (child)					
Uninsured		-0.373**			-0.421**
		(0.126)			(0.127)
Employer-provided/private health insurance (ref)					
Medicaid		0.422**			0.352**
		(0.106)			(0.108)
Having both private insurance and medicaid		0.359**			0.295*
		(0.121)			(0.122)
Nonstandard work schedules [a]			0.021		0.009
			(0.066)		(0.066)
Low wages [a]				0.139*	0.089
				(0.065)	(0.068)
Constant	-2.853**	-2.788**	-2.865**	-2.910**	-2.991**
	(0.262)	(0.262)	(0.264)	(0.263)	(0.269)
N	17433	17433	17433	17433	17433

Notes:

1. Robust standard errors in parentheses
2. * significant at 5%; ** significant at 1%
3. a: Dichotomous variable coded 1=yes, 0=no