Mothers' Share of Child Care in Rural Low-Income Families

Child care issues in rural America are discussed as barriers to maternal employment in low-income families. The effects of different types of nonmaternal child care on maternal child care share are estimated. The mother's time as a proportion of total child care time was used to measure maternal child care share. Data from 300 rural low-income families with at least one child under age six in the first wave of NC 223/NC 1011 in 2000-2001, were analyzed using OLS regression. Maternal employment hours, grandparent care, number of nonmaternal child care arrangements, and child care subsidy influenced maternal child care negatively. Parental confidence, number of children under three and presence of an employed partner were positively related. Future welfare programs should continue or increase subsidies for child care because they reduce low-income mothers' responsibilities and may increase child care supply in rural areas.

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Introduction

Poverty is deeper and more persistent in many rural areas than in urban areas, due, in part, to the unique barriers to employment that many rural residents face (Weber, Duncan, Whitener, & Miller, 2003). Since 60.5 percent of rural families with all parents in labor force lived with children under age six (U. S. Census Bureau, 2003), the absence of community services to support families of employed adults in rural areas may be a critical factor influencing rural poverty. In particular, the lack of affordable, available, and accessible child care has been identified by both researchers and policy analysts as a major barrier to the successful transition from welfare to work (Brayfield, 1995; Offner, 1991).

Children's well being resulting from living in poverty has been a focus of scholarship. Although the causal effects of poverty on children's developmental outcomes are still inconclusive, poverty has been found to have small, but consistently negative, effects on children's well being. These effects are stronger for children who continually live in poverty, who experience poverty during the early childhood years, and/or who live in the deepest poverty (Duncan, Yeung, Brooks-Gunn, & Smith, 1998). Considering the negative effect of poverty on children's well being, it is critical for poor families with children to move out of poverty, to provide enough resources for children's development.

Poor families have relied more on relatives than nonrelatives to provide child care. This is due, in part, to the higher cost burden of paid child care for low-income families. When poor families paid for child care, they spent 35 percent of their income on child care, compared with 7 percent spent by non-poor families in 1995. Also, public child care services were not distributed proportionally in rural areas. The range of strategies for work and family responsibilities available to rural poor mothers is shaped by the social-structure of the regions in which they live, as well as by the quality of their private social safety nets (Edin & Lein, 1997). Thus, a nonmalleable rural environment for child care support might discourage employment of rural poor mothers with young children as much as the rural labor markets and demographic characteristics of families do. For example, if public child care centers were available for their young children during all shifts, rural poor mothers would have more opportunities to find better paid or steady jobs outside the home. Better jobs, in turn, could improve children's developmental well being via higher income. Accordingly, the relationship between the given public child care supply in rural America and child care use behaviors has implications for welfare policies and public services as well as personal or family child care use. However, few studies focus on the effects of child care supply.

On the other hand, women have been recognized and expected to play a role as the primary caregivers for family members for gendered, ideological reasons (Hooyman & Gonyea, 1995) in this society. Thus, maternal child care responsibilities in relation to nonmaternal child care arrangements often have been ignored in the context of mothers' own economic and psychological well being. This reflects a social norm that mothers have the primary responsibility for child care provision or arrangements, and that mothers' well being *per se* should be secondary to child well being. Most employed mothers retain the time-consuming and stressful responsibility for arranging child care. By letting child care arrangements limit their employment, they risk getting much less return on their human capital investments. This double burden encourages women to calculate carefully the financial gains and losses of

work (Wheelock, Oughton, & Baines, 2003). Even when they seem to successfully achieve a balance of work and family responsibilities, they still have to manage child care arrangements. This often means they must prepare for any possible unexpected variations through complex procedures to minimize the gap between their working schedules and child care. Nonmaternal child care arrangement may stress caregivers because the caregiver burden can be a potential threat to physical and mental health (Gillias & Knafl, 1999). Issues regarding mothers' own well being resulting from child care provide political implications for gender equality, not only within individual families, but also at the society level. Thus, the perspective of mothers' social well being reconfirms a political claim that mothers have the right to their child care responsibilities with society, and will provide an opportunity to discuss rational ways to the child care that too often has been exclusively assigned to mothers.

The remainder of the article is organized as follows. In the next section, we review previous research on the determinants of child care use in rural low-income families. In the third section, we describe our data and methods. Then, the results of the effects of nonmaternal child care on maternal child care are presented. The final section provides implications for better child care and maternal employment policies that contribute to the establishment of an improved ideological basis for gender equity in child care.

Literature Review

Nonmaternal Child Care Arrangements in Rural Low-Income Families

Although many parents with young children still care for their children themselves or rely on relatives, nannies, and babysitters to provide care at home, child care in the United States increasingly includes market services provided in an array of out-of-home settings. These settings include day care centers, family day care homes and group homes, public and private nursery schools, pre-kindergartens, and kindergartens, before-and after-school programs, and Head Start programs (Hayes, Palmer, & Zaslow, 1990). Among these several child care options available in the United States, researchers have typically focused on two major analytic categories: a) care by relatives and b) care by paid sitters, family day care homes, or child care centers (Riley & Glass, 2002). Considering the importance of caring for children while their mothers are employed, it is not surprising that the most commonly studied feature is type of care actually used by employed mothers. In recent studies (Casper, 2001; Smith, 2002) of child care arrangements by employed mothers using the Survey of Income and Program Participation (SIPP), two categories were used: relative care (parent and relative care) and non-relative care (organized facility and other non-relative care). In a study by Brayfield, Deich, and Hofferth (1993) that focused on low-income families, three child care arrangements were analyzed: parental, relative, and non-relative care. For infant care analysis, Riley and Glass (2002) focused on familial and non-familial care. When one type of child care arrangement has been studied more detailed categories have been used. For example, Vandell, McCartney, Owen, Booth, & Clarke-Stewart (2003) created four mutually exclusive and exhaustive groups based on the duration and amount of grandparent care: extended full-time care, extended part-time care, sporadic care, and no routine grandparent care groups.

In the United States, relatives still provide a great deal of child care for preschoolers in rural (Atkinson, 1994), low-income families (Bowen & Neenan, 1993; Casper, 2001; Presser, 1989). Because child care can be expensive, asking relatives to serve as child care providers might be one way to avoid having to pay for child care. Child care costs constitute an especially large portion of the poor family's budget, so it comes as no surprise that poor families rely more heavily on relatives to help them out with child care than non-poor families do (Brayfield *et al.*, 1993; Crispell, 1994; Kuhlthau & Mason, 1996; Smith, 2002). In 1993, 60% of all child care for preschoolers in poor families was provided by relatives including mother and father, compared to only 46% for non-poor families. Poor families are less likely to use organized child care facilities than non-poor families, because child care in an organized facility is one of the most expensive of all types of child care arrangements. These findings are consistent with the results of an analysis of the1996 SIPP data, in which children in families receiving welfare benefits are more dependent on relatives to provide child care (Casper, 2001). The contribution of resources, especially time, by extended family members can have a significant effect on the well-being of individual household members, and the extended family system can be an important factor in alleviating some of the harsh aspects of poverty for low-income families (Hunts & Avery, 1998).

On the other hand, information about secondary or tertiary child care arrangements, in addition to primary child care arrangements, implies multiple child care arrangements are common. In 1995, about 44% of children under 5 years old and 75 % of children 5 to 14 years old (grade-school-age children) regularly spent time in more than one arrangement per week. Overall, children using a regular arrangement averaged 2.0 arrangements (Smith, 2000). However, parents with low-wage jobs and especially single parents with histories of welfare receipt made

these arrangements within tight time and financial constraints while facing limited child care options (Knox, London, & Scott, 2003).

Determinants of Child Care Arrangements

A critical element in the design of child-care policy is the determination of the features parents consider in choosing child care providers (Casper & Bianchi, 2002). Many scholars have applied Becker's (1976) neoclassical economic model of household production to the study of employment and child care choices. Parents simultaneously choose a child-care provider, a set of market goods and services, and particular amounts of non-employment time to maximize their satisfaction given their budget constraints (Blau, 1991). On the other hand, structural variations in parents' actions across vertically defined unequal social classes emphasize the lack of economic and institutionally defined opportunities. According to the structural framework, structural forces affect parents' preferences for child care choice (Astone & McLanahan, 1991; Kohn, Naoi, Schoenbach, Schooler, & Slomczynski, 1990). In addition to these rational choice and structural frameworks, Fuller, Holloway, Rambaud, and Eggers-Pierola (1996) suggested alternative cultural frameworks for poor families' child care choices. Alternative cultural models can explain the variability in choosing acceptable child care arrangements by ethnic groups. Casper and Bianchi (2002) categorized the determinants of child care choice, focusing on a trilogy of policy concerns: accessibility, affordability, and quality, which provides a very useful way to understand complex child care decision-making procedures. In this study, accessibility and affordability in the Casper and Bianchi (2002) trilogy of policy concerns were used to organize the overview of previous research on predictors of child care.

Accessibility

Family structure affected child care arrangements. In an analysis of the 1990 National Child Care Survey prior to welfare reform in 1996, children in low-income two-parent families were substantially more likely than children of low-income single mothers to be cared for exclusively by their parents, regardless of the age of the child (Brayfield *et al*., 1993). Mothers' marital status was an influential factor determining child care arrangements that required different types of resource combinations. Most employed single mothers could not easily obtain child care from the child's absent father, while dual employed families were able to juggle work schedules to care for their children themselves (Casper, 2001). Most mothers wanted to have their spouses or other relatives care for their infants when they returned to employment postpartum. For instance, when mothers were not available to care for their infants, they tended to prefer care by fathers (Mason & Kuhlthau, 1989; Riley & Glass, 2002), although most fathers were not available when needed, due to their employment schedule (Casper, 1997). More than 83 percent of employed mothers of newborns preferred some type of familial child care even when it was not a realistic option. Thus, the "success rate," indicating ability to translate preference for father care into reality, was only 32 percent (Riley & Glass, 2002). In addition, the coresidence or proximity of non-coresidential relatives influenced nonmaternal child care use behaviors (Vandell *et al*. 2003; Connelly, 1992), and grandparent care also was more common when grandparents resided in the household (Baydar & Brooks-Gunn, 1998).

Not surprisingly, maternal employment status, such as employment schedule (full-time, part-time, or nonemployment) and shift work status (day shift or non-day shift), has been most frequently found to explain or predict maternal child care time and nonmaternal child care arrangements. Non-employed parents were more likely to care exclusively for their children, regardless of family structure. Mothers working part-time also had an easier time arranging for relative and in-home care. Preschool-age children of part-time working mothers were twice as likely to be cared for by their relatives while their mothers were at work as were children of mothers who worked full-time (Casper, 2001). Moreover, maternal employment *per se* also was related to several other factors that might have influenced child care use, such as earnings, attitudes toward motherhood or child care preferences and knowledge of child care arrangements.

The age of the child was an important determinant of child care arrangements (Cheskis-Gold, 1988; Leibowitz, Klerman, & Waite, 1992). Children's age was positively related to use of paid child care, whereas younger children were more likely to be cared for by relatives when they were in nonmaternal care. In particular, infant care has been studied separately because this period has been recognized as very special, not only for children's development, but also in parenthood. In 1993, only 19% of infants were cared for in organized facilities while their mothers were at work compared with 42% of 4-year-olds (Casper, 2001). Mason and Kuhlthau (1989) found that the most preferred care for infants and toddlers was care by mothers, and the second best mode was care by fathers. Only when the child was older than 3 years did other child care preferences become more popular than father care. Shortages of formal care, especially for infants and toddlers, can affect child care choices (Atkinson, 1994). Hofferth (1992) found that only slightly more than half of center-based programs accepted children who were not toilet trained.

Many low-income rural residents experienced continuing problems in securing adequate and affordable care for their children while they were employed or obtaining education/training. Rural mothers used fewer caregivers for longer hours and had a longer history of use of caregivers than did urban mothers (Atkinson, 1994). Child care centers were a rarity in rural communities; most recipients relied on home day care providers or relatives to care for their children (Fletcher, Flora, Gaddis, Winter, & Litt, 2002). Inadequate child care posed a serious barrier to adequate employment for many rural mothers in addition to longstanding problems, such as limited job skills and education, depressed labor markets, and poor transportation. Parents who worked under nontraditional schedules often had even more difficulties arranging appropriate child care (Hayes *et al*., 1990; Casper, 2001).

According to the neoclassical economic theory of supply and demand, actual child care usage patterns should be a good reflection of underlying preferences. Nonetheless, there is reason to believe that the child care market has not always responded readily to consumer preferences (Presser, 1992) because parents lacked the money to motivate the market to provide desired forms of care (Riley & Glass, 2002). In addition, geographic mismatches occur in certain areas. For example, there are relatively more spaces than children in centers in the South and relatively fewer spaces than children in the West (Hofferth, 1992). Organized child care facilities have been more popular in the South and in the suburbs (Casper, 2001). In 1993, families in the South were more likely to choose organized child care facilities and less likely to choose relatives as primary care providers for their preschoolers than families in any other region of the country. In contrast, families residing in the Northeast were most likely to call on relatives to provide care for their preschoolers. In addition, most for-profit child care centers are in suburban areas, largely because the prime market is middle-class families with young children; very few have been in rural or inner-city areas (Hayes *et al*., 1990). However, even in multivariate analyses, few studies include a variable that controls formal child care availability.

Affordability

Family income is one of the most frequently used variables to explain the distribution of child care arrangements (Casper, 2001; Brayfield *et al.*, 1993), since expenditure for child care is mainly dependent on the purchasing power of the families under the current private child care system. Although families in poverty are less likely to pay for care and spend fewer dollars on child care than other low-income families, they spend a substantially greater share of their income on the care of their children (Brayfield *et al*., 1993).

Low-income families who are responsible for paying for their own child care avoid expensive child care costs by relying on family members or relatives (Rodriguez, 1990). Although arranging quality child care can be difficult, stressful, and time consuming for all families, the problems are inevitably compounded for low-income families who lack time, information, and economic resources. For these families, the choices are often more limited, and the consequences of inadequate care are likely to be more severe (Hayes *et al*., 1990).

However, there is limited information on the effect of family income on child care demand in previous studies. To understand the effect of economic status of low-income families, income-to-needs ratio, rather than income, would have been more useful as an index of family economic resources, with higher scores indicating greater financial resources per person in the household. In such a measure, family income is divided by the poverty threshold, based on both total family size and number of children under the age of 18. Many studies (Booth, Clarke-Stewart, Vandell, McCartney, & Owen, 2002; Jencks, 1987; Lichter & Eggebeen, 1994) have analyzed the effect of the depth of economic hardship using this measure.

The receipt of child care subsidy also can be an important means of reducing economic burden in low-income families when they want to use formal care services. In the context of public child care service programs, the United States is widely recognized as unusual among the most industrialized countries in the world, because it has not provided extensive public assistance for child care. The majority of low-income families report that they did not receive any financial assistance with their supplemental care arrangements. In addition, employers have played only a minor role in helping low-income parents with their child care expenses.

On the other hand, all eligible poor families do not use child care subsidy programs for their children even when they are eligible. The reason has been partially attributed to uneven distribution of the child care supply. In the study by Fuller, Kagan, Caspary, and Gauthier (2002), less than one-quarter of all eligible families used child care subsidies, and usage varied widely across states and local areas reflecting various barriers to access and scarcity of quality center-based care.

Although rural and urban parents may differ in family resources, the structure of families, the kind of childcare arrangements used, how care is selected, and, as a result, the kind of child care services needed (Atkinson, 1994), the majority of the child care literature focused on urban and suburban settings (Beach, 1995). In addition, most previous studies of child care discussed the results in the context of children's developmental well being or maternal employment. Without considering the ultimate impact on the rural low-income mothers' well being as a

person as well as a mother, the effect of each significant variable on the actual decisions about child care arrangements provides inadequate insights into related policies, such as programs for efficient child care subsidy or welfare mothers' labor force participation.

Thus, this study particularly focuses on the analysis of rural low-income maternal child care share. Although, typically, analysts use quantifiable measures to assess changes in the quality of life over time, collecting information on time use would permit a more complete assessment of changes in quality of life (Joyce & Stewart, 1999). The amount of mothers' time used for child care can be expected to account for the mothers' life in terms of quality. Moreover, the final effect of multiple and varied combinations of child care arrangements on the mothers' child care can be explained by controlling nonmaternal child care arrangement characteristics, which may provide implications for better concepts for future child care, considering the values of gender equality and social support.

Methodology

Data and sample

We used data from NC 223/NC 1011. In particular, the Walker/Reschke child care data set served as the core, supplemented by data on child care utilization rates from Fuller *et al*. (2002) and economic status from the basic NC 223 data. The data contained 408 observations from fourteen states in the first wave of data collection by NC 223 in 2000-2001. After selecting families with at least one child under age six, the number of observations falls to 312; missing data excluded another twelve cases..

Table 1 presents the characteristics of sample. At the time of the interview, the mean age of mothers was under 30 years. The majority (64.1%) of mothers was white; Hispanic mothers were about 20 percent. Midwest residents were slightly over sampled (34.0%) compared with other regions. The majority (60.9%) of mothers was married or lived with their partner (46.5% and 14.4%, respectively); 26.9 percent of mothers were single and 12.2 percent of mothers were divorced or separated. About a third (32.7%) of mothers did not have a high school diploma, and only 2.5 percent of mothers had at least a college degree. About half (47.4%) of mothers were employed, working an average of 31.9 hours weekly; the average monthly earning was $756. The average family size was over four, including over two children. The average age of the youngest child was about two years. Most families did not include other household members. The average monthly family income was $1,222. Mothers' earnings accounted for about 30 percent of family income. The receipt rates for government subsidies were substantially different by program. Many mothers participated in WIC and the school lunch program. The program participation rates of WIC and school lunch program were 77.6percent and 52.6 percent, respectively. However, child care subsidy was received by only 31.4 percent of families. Housing subsidy and TANF were received by less than one-fifth (20.2% and 19.3%, respectively).

[Table 1. about here]

Measures

Table 2 presents the descriptive statistics for the variables. The variables included in this study were defined as follows.

Dependent variable

Maternal child care share. The ratio of mothers' child care hours to total child care hours was calculated to measure maternal child care share in rural low-income families. Time is an ultimate constraint on human activity (Juster, 1999). We are each given 24 hours per day to devote to competing uses, and how we use that time has important implications for our financial security, health, emotional well being, and general level of happiness. Thus, time use data contribute to research and policy analysis in measuring and valuing unpaid productive activities, i.e., non-market activities (Joyce & Stewart, 1999). To calculate relative maternal child care share, the amount of child care time for children in the care of a mother was divided by the total amount of child care time. Total child care time was the sum of time for primary, secondary, and tertiary child care arrangements reported by the mother. When actual amounts of time were missing, Census average child care hours, 28.9, 10.2, and 5.6 hours, for primary, secondary, and tertiary child care, respectively, were used. This created measure provides an estimate of the relative magnitude of maternal child care share compared to that of other child care providers, including either formal or informal child care providers for rural low-income families. A higher ratio indicates that a mother has a greater share in child care. The average ratio of rural low-income mothers' child care share was 32.9%.

Children must be cared for all the time, and the argument could be made that the division should have been 24 hours. The purpose of this paper, however, was to analyze the mothers' share of child care responsibilities

relative to others, not how much time she spent in child care. The division used in this paper reflects the mothers' proportion of child care. Undoubtedly, some mothers reported time the child spent with a grandparent or father as child care and others did not. By the same token, for example, the mothers in this sample clearly did not consider sleeping while the child slept to be child care. This is evident from the values recorded. Apparently, the mothers in this study had their own definitions of child care, and we used their responses based on their own definitions.

Explanatory variables

Mothers' weekly employment hours. Employment hours of full-time mothers were coded as zero. Average rural low-income mothers' employment hours were 15.2 hours.

Parental confidence. The NC 223 data contained a parental confidence score for the mother. Parental confidence was the sum of seven items: (1) knowledge of children's growth and development, (2) confidence that they knew what is right for their child, (3) ability to create a safe home for their child, (4) success in teaching their child to behave, (5) ability to find fun activities of interest to their child, (6) amount of stress their were experiencing at the time of the interview, and (7) ability to cope with stress. Each item was scored on a seven-point Likert scale, with responses of low (1), medium (4), and high (7). Higher scores indicated stronger confidence as a parent. The average parental confidence score was about 38, near the upper limit of 49.

Number of children under three. The presence of infants, toddlers, or preschoolers was thought to impose a need for more intensive care. The average number of children under three was about one.

Presence of employed partner. A dummy variable was created to indicate whether or not a mother lived with an employed partner. Presence of employed partner contrasted mothers with an employed partner (coded 1) with those who did not (coded 0). Almost half of mothers responded they had an employed partner at home.

Grandparent care. A dummy variable was created to indicate whether a grandparent provided child care (coded 1) or not (coded 0). The child care providers in this data set were originally categorized as primary, secondary, or tertiary child care givers. In this study, grandparent care was coded regardless of this rank of childcare provider. Less that one-fifth (16.7%) of families were provided child care by grandparents.

Formal care use. Formal care use included day care centers and regulated family day care. A dummy variable was created to indicate whether formal care was used (coded 1) or not (coded 0). Formal care use was coded regardless of the rank of childcare provider. Formal care was used by 24 percent of families.

Number of nonmaternal child care arrangements. A continuous variable was included to measure how many child care arrangements were managed by a mother. Rural low-income mothers in this study used an average of one nonmaternal child care arrangement.

Child care subsidy. A dummy variable was used to indicate whether a family received a government child care subsidy (coded 1) or not (coded 0). The proportion of families receiving a subsidy was 32 percent.

Formal care supply. Formal care supply was measured by state formal care utilization rates. In this study, the utilization rates by state were obtained from Fuller *et al*. (2002). First, the number of served children was divided by the number of eligible children for each state in the data set. Then, the ratio was multiplied by 100. The average state utilization rate was only 11.9 percent, which indicates that about 88 children out of 100 were not serviced by the current formal care capacity.

[Table 2. about here]

Results

Table 3 presents the results of an ordinary least squares regression analysis for mothers' share of child care. The dependent variable, maternal child care share, was regressed on explanatory variables representing mothers' characteristics (employment hours and parental confidence), family characteristics (number of children under the age of three and presence of employed partner), child care characteristics (grandparent care use, formal care use, number of nonmaternal child care arrangements, child care subsidy and formal care supply).

The coefficients of the explanatory variables show the direction and size of each effect on maternal child care time. First, two of mothers' characteristics, mothers' employment hours and parental confidence, were statistically significant, and influenced maternal child care share in opposite directions. The effect of mothers' weekly employment hours on maternal child care share was negative. As the mothers' employment hours increased by one hour, maternal child care share was reduced by 0.4 percent. However, the coefficient of mothers' parental confidence was positive. As mothers' parental confidence scores increased by one point, their child-care share increased by 0.7 percent.

Second, both family characteristics had positive significant effects. An increase of one child under age three corresponded to a 15.6 percent increase in maternal child care share. Maternal child care share increased by 14.6 percent when mother had an employed partner.

Three child care characteristics had significant, negative effects on maternal time, all except formal care use. Maternal child care share was reduced by 18 percent when grandparents cared for their grandchildren. The number of nonmaternal child care arrangements reduced the maternal child care share by 4.4 percent for each additional nonmaternal child care arrangement. The receipt of a child care subsidy was statistically significant. Receipt of a government child care subsidy reduced rural low-income mothers' child care share by 7.5 percent; however, formal care supply did not significantly influence maternal child care share.

[Table 3. about here]

Discussion

In this study, the effects of socioeconomic and demographic variables related to child care use on maternal child care share in low-income families were examined. The results of this study provide implications for better understanding rural low-income mothers' child care behaviors.

First, mothers' employment hours reduced the maternal share for child care, as expected according to the economic theory of time allocation. This result implies that gender equality can be achieved by making it easier for employed women to share the child care with others, regardless of formal or informal care. However, in this study, it is hard to conclude that mothers' employment *per se* will guarantee gender equality in terms of child care responsibilities, because mothers' employment hours might be the result of a complex process involving other potentially influential factors. Mothers' employment is a classic example of Heckman's (1976) sample selection bias; however, Stolzenberg & Relles (1997) noted no methods provide a general solution to this problem. For example, mothers might have already controlled their employment schedules to match conditions of available resources for child care or they might have considered gender inequality in wage rates and/or contribution to family income in their family economy. These results are inconsistent with Bianchi's finding (2000). If, as Bianchi claimed, employed mothers sought ways to maximize time with children by changing other uses of time as well as changing employment schedules, employment hours would not have changed maternal share. In addition, mothers' attitudes toward child care that allow them to have parental confidence motivated them not to reduce their child care share when controlling other factors. The interaction between parental confidence and the traditional belief that mothers are the best child care providers should be studied in future analyses.

Second, not surprisingly, the number of young children under age three in a family explained maternal child care time. Also, presence of an employed partner that determines family economic status explained maternal child care share. Considering only a third of mothers' contribution to the total family income, the positive effect of an employed partner might earn enough income to allow mothers to stay with their children instead of working outside the home. According to Becker's (1976) analysis of parental time investments in producing "quality" children under the constraints of a household budget, this result may be consistent with specialization between husbands and wives.

Third, maternal child care share varied by several child care characteristics of rural low-income families. Although decisions about child care arrangements *per se* can be presumed to have been made by rural low-income mothers faced with a fixed set of providers, the results may have implications for the desired mix of providers. In particular, the effect of child care type on mothers' child care time has implications for the efficiency of each child care supporting system. Grandparents, one of the most frequent informal child care providers, contributed considerable reduction in the maternal child care share in rural low-income families, while the formal care use did not. Thus, the current formal care service system for rural low-income families might be inadequate as a supporter for rural poor mothers, because it made only a minimal reduction in maternal child care. In addition, formal care freed only a minimal amount of mother's time for employment. On the other hand, the effect for grandparents may indicate the importance of the cultural context in analyses of rural low-income families' child care (Fuller *et al*., 1996; Giddens, 1984; Liang, 1996). Fuller *et al.* (1996) concluded that cultural maps of mothers' social terrain, through which beliefs and action flow over time, encourage impoverished mothers to search for kin members to provide child care, or to withdraw their children from unsatisfactory formal care settings, such as preschool. However, considering the potential or hidden problems for grandparents' own welfare that can result from a deprivation of leisure, a more practical formal care system to provide assistance for mothers should be established in rural areas.

In addition, the result that the number of nonmaternal child care arrangements reduced maternal child care time provides implications for both the caregiver role and the family resource manager role of low-income mothers.

Although the multiple child care arrangements increase the complexity of management procedures and might, for that reason, have resulted in a positive effect on maternal child care share, the net effect was negative. Apparently the use of multiple nonmaternal child care arrangements functioned to increase available human and/or material resources to a greater extent than it increased mother's time to manage the complexity of the arrangements. Thus, comparisons of different effects of several measures of nonmaternal child care can be studied in the future to understand various dimensions of gender-oriented family resource management. On the other hand, low-income families' patchwork of multiple child care arrangement, typically unregulated or minimally regulated informal child care, plays a central role (Knox *et al*., 2003). The potential problems of using inadequate or unsafe arrangements may also increase parental tension and stress.

Government child care subsidies can be viewed as contributing to reduced maternal child care share according to this study. Thus, efforts should be made to provide economic assistance to reduce the price of nonmaternal child care for more rural low-income families. However, the effect of formal care supply was not significant in this study, although there is a hypothetical relationship between demand for and supply of child care that might result in changes in maternal child care share. In the future, based on more detailed information about child care supply, better structural measurements of child care supply could be created. Moreover, more appropriate indicators of how the children in a society are cared for by various levels of providers, including mothers, fathers, other families, social networks, and government, should be developed.

Table 1
Sample Characteristics

	N	%	Mean	S. D.
Age			27.44	6.75
Ethnicity				
Non-Hispanic White	200	64.1		
Hispanic/Latino	61	19.6		
African American	28	9.0		
Other/missing	23	7.4		
Region				
Northeast	61	19.6		
Midwest	106	34.0		
South	65	20.8		
West	80	25.6		
Marital status				
Single	84	26.9		
Married	145	46.5		
Divorced/Separated	38	12.2		
Living with partner	45	14.4		
Education				
Under high school diploma	102	32.7		
High school diploma	133	42.6		
Some College	69	22.1		
College graduate plus	8	2.5		
Employment rate	148	47.4		
Employment hours (week)			31.87	11.75
Earnings (month)			756.42	416.72
Family size			4.56	1.81
Number of children			2.32	1.33
Age of youngest child			2.07	1.58
Number of other household members			.63	1.30
Family income (month)			1221.56	779.58
Government subsidy				
Child care subsidy	98	31.4		
WIC	242	77.6		
School Lunch Program	164	52.6		
Housing subsidy	63	20.2		
TANF	60	19.3		
N = 300				

Table 2
Descriptive Statistics of Variables

	N	%	Mean	S. D.
Dependent variable				
Maternal child care burden (%)			32.95	35.06
Independent variables				
Mothers' characteristics				
Employment hours (week)			15.16	17.55
Parental confidence			38.12	5.24
Family characteristics				
Number of children under age three			0 .97	0.67
Presence of employed partner	96	32.0		
Child care characteristics				
Grandparent care	50	16.6		
Formal care use	73	24.0		
Number of nonmaternal child care arrangements			1.01	0.94
Child care subsidy	96	32.0		
Formal care supply (%)			11.86	4.16
N = 300				

Table 3
OLS Regression

	Unstandardized Coefficients		Significance
Variables	B	Std. Error	
Mothers' characteristics			
Employment hours (week)	-0.358	0.103	.001**
Parental confidence	0.680	0.310	.029*
Family characteristics			
Number of children under age three	15.637	2.517	.000***
Presence of employed partner	14.587	3.331	.000***
Child care characteristics			
Grandparent care (1 if used, 0 otherwise)	-17.963	4.833	.000***
Formal care use (1 if used, 0 otherwise)	-5.104	3.968	.199
Number of nonmaternal child care arrangements	-4.394	1.956	.025*
Child care subsidy (1 if received, 0 otherwise)	-7.552	2.971	.012*
Formal care supply (%)	-0.129	0.405	.750
Constant	9.449	13.528	.485
N =300			
R-squared= .397 (Adj. R-square= .376)			
F-statistic =198.043 (sig. = .000)			
*p<.05, **p<.01, *** p<.001.			

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