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MATERNAL EDUCATION, EARLY CHILD CARE, AND THE REPRODUCTION OF ADVANTAGE

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Abstract

Over the past several decades, rates of women's educational attainment have dramatically risen. As a result, women's attachment to the labor force has strengthened and women's earning capacities have increased. The effects of these processes on children's educational achievement are well understood. Yet education does more than alter the balance between work, income, and children's academic success by providing women the social and human capital to enhance their children's ability to navigate the U.S. school system. In this paper, we illuminate an additional mechanism by which mothers transfer academic advantages to their children: through child care experiences that promotes school readiness. Using data from the NICHD Study of Early Child Care and Youth Development, we test the association between maternal education and children's exposure to the configurations of care that best prepare children for school. Our results indicate that as mothers' education increases, so does the likelihood that children will be in enriching child care arrangements. This association persisted net of income and work-related factors.

Maternal Education, Early Child Care, and the Reproduction of Advantage

Over the past several decades, rates of educational attainment among women in the U.S. have increased dramatically, with women now more likely than men to graduate from high school, complete college, and pursue graduate degrees (Nevill and Chen 2007; Buchman and DiPrete 2006). The intergenerational implications of this demographic trend are profound (Kalmijn 1994). In short, educational attainment enhances the economic position of women and allows them to establish a storehouse of skills, knowledge, and resources that they can leverage to bestow instrumental and socioeconomic advantages on their children. These children, in turn, are better positioned to use the educational system to enhance their own social mobility (Lareau 1987; Baker and Stevenson 1986). This intergenerational phenomenon is most often viewed as a social class issue that plays out as children move through formal schooling (Sirin 2005). We argue that this class perspective can be complemented by viewing this phenomenon as a human and social capital issue that plays out before children even transition into formal schooling.

With this goal in mind, this study examines one *early* mechanism through which educational attainment enhances the ability of women to secure long-lasting advantages for their children in the status attainment process; specifically, women's ability to maneuver their children into early child care situations that best promote school readiness. Certainly, the link between women's educational attainment and the transmission of advantage to their children operates through employment and income dynamics, but it is also related to the social networks, cognitive skills, and psychological capacities that educational attainment cultivates (Davis-Kean 2005; Mirowsky and Ross 2003; McLanahan 1994; Coleman 1988). For example, educational attainment makes women prime consumers in the child care market by strengthening their

attachment to the labor force and increasing their ability to afford the high-costs of child care, but it also gives them many other advantages in this market (NICHD Early Child Care Research Network 1997). Education provides women with more knowledge about what is needed for their children to succeed in the long run (e.g., pre-school enrichment), more skill at assessing how to meet these needs (e.g., what pre-school enrichment looks like), and more opportunity to turn these assessments into reality (e.g., how such enrichment can be secured). As such, the early academic advantages of maternal education for children can be realized regardless of the potential employment or financial effects of mothers' educational trajectories.

Following this logic, we expect that maternal education—above and beyond work status and income—will be associated with the pre-school child care arrangements that have been identified by social research as most conducive to children's eventual success in school, namely regular but limited time in high-quality child care centers (NICHD ECCRN 2005). This expectation will be tested with extensive intergenerational data in the long-running NICHD Study of Early Child Care and Youth Development (SECCYD). Such research builds on the substantial literature on social class differences in parenting and the intergenerational transmission of advantage (e.g., Lareau 2004; Coleman 1988) by highlighting the role of maternal education in the social class matrix, shifting the focus down to early childhood, and reconceptualizing early child care as an opportunity and not just as a necessity.

Educational Attainment and the Intergenerational Transmission of Status

How have increasing rates of women's educational attainment altered the pathways by which social and economic advantages are passed down across generations? As already mentioned, two commonly considered pathways are employment and income, which, of course, are closely related to each other.

Basically, rising rates of educational attainment have selected women into higher-paying, higher-status segments of the labor force, altering the distribution of family income in the process (Karoely and Burtless 1995). When married or single women earn more money, they set in motion the well-documented effects of income on children (Raver, Gershoff, and Aber forthcoming). At the same time, ample evidence has revealed that women's work has direct implications for their own life management and ability to balance competing economic and socioemotional needs of family life, both of which are significant for child development (Menaghan and Parcel 1995; Muller 1995; Kohn, Slomczynski, and Schoenback 1986).

Importantly, however, experience in the educational system advantages women in ways that extend beyond work and money. Indeed, educational attainment enhances women's critical thinking skills, personal efficacy, and socially networking. Worth stressing is that these benefits are not just realized at the high end of the educational system—not only do college graduates have measurable advantages in psychosocial skills and resources over high school dropouts, high school graduates do too. In other words, any persistence in the educational system matters (Magnusson 2003; Mirowsky and Ross 2003). Because women are the primary caregivers in most families, the acquisition of such advantages through education affects how children are reared. For example, maternal education has been linked to increased levels of prenatal care, authoritative parenting, positive mother-child interaction, institutional resource mobilization, and advocacy for children (Raver et al. forthcoming; Useem 1992; Schneider and Coleman 1993; Young, McMahon, Bowman, and Thompson 1990; Lareau 1989).

In this general domain of parenting, one of the primary means by which educational attainment promotes the intergenerational transmission of advantage is through mothers' active management of their children's learning and academic progress. For the most part, research on

this process has focused on mother's construction of stimulating activities for their children, their involvement at children's schools, and their aspirations for children. First, as women become more educated, they are more likely to use complex language with their children, read with and provide home learning activities to their children, accompany their children on intellectual activities (e.g., museum), and enroll their children in lessons (Chin and Phillips 2004; Hofferth and Sandberg 2001; Walker et. al. 1994). Second, education promotes mothers participation in school activities, monitoring of children's progress, partnering with school personnel to promote children's learning, and intervention at school to protect and advance children's interests (Raver et al. forthcoming; Hill et al. 2005; McNeil 1999; Useem 1992; Lareau 1989). Third, educational attainment cultivates value systems about social mobility and standards of success, which directly motivate mothers' pro-academic behaviors and indirectly engender higher aspirations among children (Davis-Kean 2005; Sewell, Haller, and Ohlendorf 1970).

These home-, school-, and community-based activities promote the future educational prospects of children by facilitating their cognitive *and* social development. Today, in an era in which non-parental care in early childhood is the norm and variability in such care sharply differentiates children on school readiness, the ways in which parents select and manage early child care arrangements is an important element in their management of their children's learning and education (Clarke-Stewart and Allhusen, 2005). In this study, we focus on that element as a mechanism by which education allows women to bestow advantages on their children.

Maternal Education and Early Child Care

The aforementioned psychosocial advantages of educational attainment likely play a role in early child care usage. Just as mothers rely on human capital to select specific schools, courses, and teachers for their children during the formal schooling period, they likely do the

same when selecting care for children before this period. For most mothers, cost, convenience, and availability are primary determinants of early child care arrangements. As maternal education goes up, however, perceptions about the educational and preparatory component of early child care become more important (Johansen, Leibowitz, and Waite 1996). What educated mothers are searching for is an academic advantage for their children before school starts.

Scientific research has yielded a general consensus on the kinds of care arrangements that best promote school readiness. Three factors are crucial: type, quality, and quantity (Clarke-Stewart and Allhusen 2002). First, center-based care has the largest effects on cognitive development. Compared to more informal, home-based arrangements, centers offer more structured, stimulating, and developmentally appropriate curricula led by better trained staff, all of which promote assorted cognitive and academic skills, including language development and reading proficiency (NICHD ECCRN 2005; Vandell 2004; Currie, Garces, and Thomas 2002; Scarr 1998). Second, high-quality care—whether center-based or not—encompasses warmer, more sensitive, more responsive caregiver-child interactions. When coupled with the kinds of stimulating activities that are more common in center-based care, this high-quality interaction can substantially boost children’s cognitive development. For example, children who switch from low-quality to high-quality care often post increases in scores on cognitive tests (NICHD ECCRN 2003). Third, the benefits of even high-quality center-based care follow a law of diminishing returns, with long hours appearing to lead to child behavioral problems that are risks to school readiness (Loeb et al. 2007; ECCRN 2003; Raver 2002). Thus, limited hours in high-quality, center-based care would seem to be the best preparation for formal schooling.

The basic argument of this study is that maternal educational will powerfully predict children’s exposure to this “school preparatory” kind of early child care, regardless of the

employment and income correlates of educational attainment that make early child care simultaneously more necessary and more affordable. For example, maternal education increases knowledge about how the educational system works. Just as this knowledge enhances mother's management of high school students' coursework, it also helps them to select early child care. More educated mothers express more desire for educational enrichment in early child care and, therefore, prefer formal arrangements. Women with less education, on the other hand, prefer family-based care for their young children (Johansen et al. 1996). Echoing Lareau's (2004) concept of concerted cultivation strategies of parenting in upper-class homes, educational attainment appears to increase the likelihood that early child care will be viewed as a competitive edge in children's social mobility.

Also important is what educational attainment does to social networks. Friends, acquaintances, and associates are the primary sources of information for parents on a child care search. Consequently, the kinds of contacts that parents have matter (Clarke-Stewart and Allhusen 2005; Fuqua and Labensohn 1986). As seen in school choice research, the diverse, diffuse networks that educational attainment cultivates should allow mothers greater access to information about early child care options and then provide support in weighing those options (Schneider et al. 1997). Finally, educational attainment is closely related to planfulness (Shanahan, Elder, and Miech 1997), which, given the instability and ambiguity of the child care market and the evolving demands of family life (Hofferth 1996), is likely to be a major resource to mothers trying to secure care for children and to gain advantages for these children.

As a starting point, empirical evidence already exists that links maternal education to each of the three inputs into this preparatory early child care. More educated mothers are more likely to draw on center care, to have higher quality care regardless of type, and to use care of all

types and quality in smaller quantities. Some of these effects are related to work and financial circumstances (NICHD ECCRN 2005; Howes 1990; Leibowitz, Waite, & Witsberger 1988).

What this study does is examine how educational attainment affects the ability of mothers—in all employment statuses and income levels—to target the nexus of these three inputs.

METHODS

Data and Sample

This study draws on data from the NICHD SECCYD, a comprehensive longitudinal study following children from birth through high school designed to understand children's experiences in child care and the implications of these experiences for their long-term development (see www.public.rti.org/secc for more details). The families who participated in this study were recruited from hospitals located in or near Little Rock, AR; Irvine, CA; Lawrence, KS; Boston, MA; Philadelphia, PA; Pittsburgh, PA; Charlottesville, VA; Morganton, NC; Seattle, WA; and Madison, WI. During selected 24-hour sampling periods in 1991, 8,986 women were visited in the hospital shortly after giving birth. Of these women, 5,265 met the eligibility criteria for the study and agreed to be contacted after their return home from the hospital. The mother had to be at least 18 years of age and conversant in English, the infant had to be a singleton and healthy, and the family could not be planning to move within the following year. When infants were one month old, 1,364 families (58% of those contacted) were enrolled in the study. Although the sample was not nationally representative, it was economically, geographically, and racially diverse. These families participated in interviews, diagnostic tests, and observations in home, laboratory, and child care (and eventually school) visits at regular intervals up through the target children's ninth grade year.

Two analytical samples were used in this study: 1) the 90% of the original families ($n = 1,229$) who participated in data collection up through the 36 month follow-up, and 2) the 83% of the original families ($n = 1,127$) who participated in data collection up through the 54 month follow-up. These two analytical samples were selected to cover the period immediately preceding the transition to formal schooling and, within this period, to capture variation in the normative rates of early child care use.

Measures

Early child care. The first child care indicator was type. Information regarding children's primary care arrangements at 36 months and 54 months were obtained during telephone interviews in which mothers' reported who provided the study child's care and where this care took place. Responses were coded into seven categories (1 = mother, 2 = father/mother's partner, 3 = grandparent, 4 = in-home care, 5 = family day care, 6 = center care, 7 = other care). Following conventions in the SECCYD and other data sources (Hofferth 2007; NICHD ECCRN 2005), we focus on the primary arrangement, identified by the arrangement in which children spent the greatest number of hours. The final typology included categories for sole maternal care, center care, relative care (which includes father, mother's partner, or grandparent), group care (which includes family day care center and other arrangements in the home of a non-relative), and in-home care (which includes babysitter, nanny, or sibling hired to care for the child in the child's home).

The second indicator was child care quality, which was measured at 36 and 54 months by the Observational Rating of the Caregiving Environment. The ORCE, the first systematic child care evaluation protocol, was conducted in the primary care arrangement for 44 minutes over two cycles. Trained observers rated specific kinds of interactions between study children and

their primary caregivers. At 36 months, quality assessments covered fostering exploration, sensitivity to nondistress, intrusion, detachment, stimulation of development, and positive regard. At 54 months, they covered sensitivity, intrusiveness, detachment, and stimulation of cognitive development. Qualitative ratings were scored on a four-point scale (1 = not at all characteristic - 4 = highly characteristic). The average of all ratings measured total quality at both time points ($\alpha = .83$ at 36 months, $\alpha = .72$ at 54 months).

Finally, child care quantity was measured by maternal reports of the *amount of time* per week that children spent in their primary non-maternal care arrangement at 36 and 54 months.

Maternal education and employment status. Mothers reported the total number of years of education they had received and their highest level of degree attainment. In most instances, the value of maternal education directly corresponded with the number of years mothers spent in school. Mothers with either multiple master's degrees or a doctoral degree were assigned a value of 21. Mothers with a GED were assigned a value of 12. To account for the employment correlates of both educational attainment and child care needs, we measured mothers' work statuses based on their reports of the average number of hours per week spent in either a job or school. These reports were summed to create three dummy variables: non-working (working less than 10 hours per week), part-time work (10-30 hours), and full-time work (30+ hours). Dummy variables for whether mothers worked standard eight hour work days or non-standard evening hours at both time points were also created to control for work patterns with consequences for access to and availability of care (Han 2004).

Family background. An income-to-needs ratio was calculated for each family at both time points by dividing maternal reports of all sources of household income by the poverty threshold for that family size. Family structure at both time points was measured by a set of

dummy variables (single parent, married step-parent, cohabiting stepparent families, married two-biological parent). Maternal reports of the number of children under 18 living at home was also included because of the possible association between number of children and care arrangement type (Leibowitz et al. 1988). Each item was measured at both 36- and 54- months. Dummy variables for data collection site were included to account for geographic differences.

Other maternal, child, and family characteristics. To account for the demographic variability in associations between maternal education and child care indicators, we also created a binary marker of child gender (1 = female), a set of dummy variables for child race/ethnicity (White, African-American, and Other), and a continuous measure of maternal age.

Analytic Strategy

Analyses proceeded in three steps. The first assessed the associations between maternal education and child care type. Multinomial logistic regressions were estimated in which 36 month type was predicted by maternal education and the full set of control variables. The results from multinomial models can be unwieldy because each category of the dependent variable can serve as the reference. We estimated each model with all possible reference categories but, to maximize clarity, focus on the models with non-center care as the reference. These models were re-estimated for the 54 month sample.

For the second set of analyses, we estimated a series of OLS regressions examining the linkage between maternal education and child care quality among children in non-maternal care. The first model regressed the quality measure on maternal education and the full set of controls. To this base model, we added the maternal employment dummy variables (Model 2), the child care type dummy variables (Model 3), and interactions between maternal education and child care type. These interactions revealed whether the association between maternal educational and

care quality varied across care types. Again, these models were estimated for both the 36 and 54 months samples.

For the final set of analyses, we estimated a series of OLS regressions on the linkage between maternal education and the number of hours per week children spent in their primary care arrangement. The first model measured the association between maternal education and hours with the full set of controls. In the second step (Model 2), we included the measure of child care quality and the dummy variables for arrangement type. Finally, we include a three-way interaction between arrangement type, quality, and maternal education. This final step revealed whether associations between maternal education and hours in the primary arrangement varied according to different combinations of care quality and type.

This analytical plan, therefore, iteratively worked through the type, quality, and quantity aspects of early child care until the intersection of all three was targeted. In doing so, it gauged how maternal education helped to organize early child care arrangements in general and selected children into school preparatory arrangements in particular.

RESULTS

Before turning to the multivariate analyses, we first wanted to give a sense of the sociodemographic composition of different maternal education groups in the sample. To that end, Table 1 presents descriptive statistics on key study variables for three categories of educational attainment: high school or less than high school, some college, and college or more than college.

These statistics indicate that older, white women who are married to their children's fathers and have higher ratios of family income-to-needs typically had higher rates of

educational attainment. Women who are single, African American, younger, and had lower income-to-needs ratios were more commonly high school educated or had less than a high school education. Importantly, when children were 36 months old, more educated women were less likely to work full-time but more likely to work part-time. Two years later, work patterns had shifted somewhat, with more mothers working full-time across all groups and fewer mothers not working. In general, the proportion of children in center care increased as maternal education increased while the proportion of children in exclusive maternal care decreased as maternal education increased. These descriptive statistics suggest that women with more education had more resources to pay for their children's child care and less stringent work arrangements (college educated women were most likely to work part-time and least likely to work full-time).

[Table 1 About Here]

Early Child Care Type

In the nexus of inputs into school preparatory early child care, arrangement type is the first ingredient. Table 2 presents the odds ratios from the multinomial logistic regression model predicting the odds of being in center care (vs. group home care, relative care, in-home care, and exclusive maternal care) at 36 months. Table 3 shows the corresponding results for the 54 month sample.

[Tables 2 and 3 About Here]

When children were three years old, maternal education predicted greater reliance on center care as the primary arrangement than any form of familial care, including exclusive maternal care. With each one-unit increase in maternal education, the odds of children being in center care increased by 15% (vs. relative care) and by 23% (vs. sole maternal care). Maternal education did not predict center care relative to other forms on non-familial care. A similar pattern held when women were four and half, with one important exception. At this stage,

maternal education did not predict differences between center care and exclusive maternal care. This null finding likely reflects the tendency for most children (over 90% of the SECCYD) to be in exclusive maternal care by this age.

Recall that one argument of this study was that the associations between maternal education and child care arrangements would persist even when maternal employment and income were taken into account. Clearly, these factors are associated with child care use. The question is whether these associations explain away the associations between maternal education and early child care. The results of our analyses provided mixed evidence on this issue.

First, both maternal employment and income predicted child care type. At 36 months, mothers who did not work and who had higher incomes were more likely to select center care for their children. At 54 months, mothers who did not work or worked part-time (compared to full-time), regardless of income, were more likely to select center care. Thus, as proportion of families using early child care strictly out of necessity rose, the link between employment and income factors on one hand and child care arrangements on the other grew less pronounced.

Second, and more importantly for the purposes of this study, the consideration of maternal employment and income only marginally altered the initial associations between maternal education and child care type. The full model did not reveal substantial differences from the baseline model testing the association between maternal education and type (without work or income variables) and did not reveal substantial differences from the full model. In other words, the inclusion of maternal work variables and income (separately and then together) to the baseline model did not do much to alter the original associations between maternal education and early child care type.

At 54 months, the same patterns held true with the exception that the addition of income to the model reduced the likelihood that more educated mothers would select center care over maternal care to non-significance. Otherwise, income did not predict center care use at 54 months. Rather, mothers using center care were more likely to be working less than full-time. In general, these results suggest that neither income nor employment accounted for observed associations between maternal education and child care arrangement type.

Third, as a side analysis, we also performed Chow tests to determine if the processes that underlie the association between maternal education and child care use were structurally equivalent for working and non-working mothers and for high income mothers and low income mothers. These tests failed to show significant differences in the education (and other) coefficients for women who worked and women who did not work at both 36 months and 54 months. These results suggest that the factors, including maternal education, contributing to the selection of child care arrangement types did not differ meaningfully across important employment and income categories of women.

The multinomial logistic regressions and Chow tests, then, suggest that maternal education was related to early child care arrangements. This relation was largely independent of the economic resources or employment-related child care needs of mothers.

Early Child Care Quality

Turning to the quality of non-maternal child care arrangements, Table 4 presents the results of regression models predicting the overall quality of child care arrangements at 36 months. Table 5 presents the corresponding results for the 54 month sample.

[Tables 4 and 5 About Here]

At 36 months, a one unit increase in education was associated with an improvement in the average quality of children's care on the order of 5% of a standard deviation in the quality measure (Model 1 in Table 4). After adding maternal employment factors in Model 2, the coefficient for maternal education was reduced to marginal significance ($p < .10$), largely because more educated mothers were more likely to work part-time than full-time or not at all. Next, we added the child care type dummy variables (see Model 3). This addition reduced the maternal education coefficient to non-significance, suggesting that center care type (the favored type for well-educated women with reduced work schedules) was more likely to be of lower quality than other child care types¹.

Finally, Model 4 added the maternal education x child care type interaction terms. Significant interactions were found for group care, center care, and in-home care (although the relative relationships between the interactions depended upon the reference category). To assess these interaction terms, we wrote out the equations for the regression with different combinations of values for maternal education and child care type. What these calculations revealed was that maternal education was more positively related to quality of care for children in either group care or in-home care than for children in center care.

The results for the 54 month sample were slightly different (see Table 5). First, in this period, maternal education predicted child care quality even after maternal employment, income, and child care type were taken into account. Second, the significant interactions between maternal education and child care type (which arose from different modeling iterations with various types as the reference) indicated that, on average, the associations between maternal

¹ The lower average quality rating of center care compared to other types of care reflects the socioeconomic emotional focus of the instrument used (ORCE), whereby centers are penalized because of the lower child-to-caregiver ratios (Clarke-Stewart and Allhusen 2005).

education and child care quality were greatest for children in center care (followed by group care and in-home care).

Thus, during developmental periods in which non-maternal care was normative but not universal, maternal education selected children into higher-quality care largely through its associations with employment and income. Furthermore, maternal education mattered most when children were in early care types that—from the perspective of school readiness—were less ideal and least when they were in care types (e.g., center care) most associated with school readiness. During the developmental stage when non-maternal care became a universal, however, maternal education selected children into higher-quality care regardless of other maternal circumstances, especially when children were already in care types most likely to promote school readiness.

Early Child Care Quantity

Looking at the final element in the nexus of early child care inputs, we analyzed the relationship between the quantity of time children spent per week in their primary care arrangement and maternal education. Table 6 reports the results from the 36 month analysis, and Table 7 reports the results from the 54 month analysis.

[Tables 6 and 7 About Here]

In Table 6, the baseline model (Model 1) including the full set of controls did not reveal a significant association between maternal education and the quantity of time children spent in care at 36 months. After adding dummy variables for child care type and controlling for quality (Model 2), however, maternal education became a significant predictor of time spent in care ($b = -.55, p < .01$). These results indicate that a one unit increase in maternal education was associated with a half hour reduction in time spent in non-maternal child care, net of such factors as type

and quality of care. In the final step of the analysis (Model 3), we added three-way interactions between type, quality, and maternal education to the model. Significant interactions were found for each type of early child care (although the significant relationships depended upon which category was used as the reference).

To assess these interaction terms, we followed the same procedure described above, writing out the equations for the regression with different combinations of values for maternal education, child care type, and child care quality. These interactions revealed that within each combination of type and high/low quality (evaluated at one standard deviation above and below the mean), increases in education were associated with decreases in the number of hours children spent in care. For mothers with fewer years of education, children spent roughly the same amount of time in non-maternal care regardless of whether the care was of high quality or low quality. For mothers with more years of education, however, children spent less time in low quality care settings (with the exception of relative care). This pattern suggests that more educated mothers attempt to minimize their children's time spent in low quality care.

At 54 months, each unit increase in mother's education was associated with slightly less than a half an hour reduction in the number of hours children spent in child care (Model 1). Adding type and quality to the model, however, reduced this association to nonsignificance (Model 2). When most children were in child care, then, children in higher quality arrangements also experienced, on average, less time in non-maternal care than children in lower quality arrangements. This finding may reflect the propensity of mothers selecting high quality care to deliberately limit the amount of time children spend in care.

Of note is that, throughout each step of this analysis, income was not significantly associated with the amount of time children spent in care at both 36 and 54 months. Although

part-time work was related to greater quantities of care in the baseline models, the association became non-significant when child care type and quality were included in the analysis. Not surprisingly, full-time work persisted as a significant predictor across models at both time points. Thus, employment status and income appeared to be less important to quantity of care than they were to other aspects of early child care.

Adding the three-way interaction terms revealed mixed-findings (Model 3). For the most part, more maternal education was associated with more time spent in in-home care. The findings for center, group, and relative care revealed a quite different pattern. Within these arrangements, maternal education did not condition the associations between quality and quantity of care. Instead, children in high-quality care spent less time in child care than did children in low-quality care at all levels of maternal education. Thus, when children were 54 months old, the association between maternal education and hours was largely mediated by quality of care. This finding, coupled with the finding that education generally predicts quality, lends support to our expectation that mothers with more education limit the amount of time children spend in child care.

DISCUSSION

The focus of this study was on how educational attainment factors into mothers' decision-making about their young children's care. Prior research has indicated that educational attainment—not just degrees, but time in the system—provides women with a range of human and social capital that directly and indirectly affect how mothers manage and motivate their children's educational careers, beyond the obvious income and employment consequences of persisting further in school. This well-documented pattern goes beyond traditional social class

perspectives and instead suggests the many non-economic resources accrued through education. In this study, we extended this line of inquiry by focusing in the period before formal schooling begins. In this period, non-maternal child care is now the norm in the U.S., and such care can provide great advantages (or disadvantages) to children as they transition into school.

Indeed, maternal education was a major factor in various aspects of early child care *and* in the intersection of these various characteristics. Whether focusing on type, quality, or quantity of care, maternal education was related to use of child care arrangements identified by decades of early child care research as the most developmentally appropriate and cognitively enriching (Vandell 2004). These patterns persisted even when considering the effects that income and work have on how mothers utilized child care. When children were three -years old, the children of more educated were in center care more often than familial care arrangements. When they were not in center care, they were in group care and in-home care of higher quality. Finally, these children spent less time in child care overall, especially when they were in low-quality care. Thus, educational attainment appeared to provide mothers of all work statuses and income levels with skills that allowed them to bestow advantages for their children and to minimize certain risks.

When children were four and a half and gearing up to enter elementary school, maternal education was related to an increased likelihood that they would be in center care over relative care and, moreover, in high quality center care. Maternal education mattered most, therefore, when center care and high-quality care—the ideal combination of type and quality for cognitive aspects of school readiness (NICHD ECCRN 2002)—were utilized together. Lastly, more educated mothers limited their children’s time in care, but this relationship operated through mothers’ choice of high-quality care, meaning that mothers selecting high-quality care were also

more likely to limit the amount of time children spent in care. The linkage between amount and quality taken with the finding that education was related to higher-quality care—especially for children in center care—suggests that the children of well-educated women were most likely to be found in academically advantageous child care arrangements.

The results of this study lend support to the notion that early child care is a mechanism for the early intergenerational transmission of inequality. According to the school transition model, children's academic trajectories are rooted in their performance during the initial years of formal schooling, when socioeconomic differences in learning are relatively narrow and most malleable. The differences that do exist are rooted in parenting behaviors and other life circumstances, which often reflect class-based family socialization practices and opportunities. Yet over time, these small differences compound from year to year in a self-sustaining way (Entwisle and Alexander 1996; Alexander and Entwisle 1988, 1993). In other words, small differences in school readiness become the foundation for long-term academic disparities. Early child care is one pre-school setting in which children can gain early academic advantages that then enable them to achieve sustained success in the educational system (Magunson and Duncan 2004). Indeed, this very logic underlies recent political discourse on school readiness and the increased attention placed on universal pre-kindergarten programs and high-quality child care as a poverty intervention strategy (Karoly, Kilburn, and Cannon 2005; King 2006). In the current climate, however, already advantaged children are more likely to gain this additional academic edge, fueling the cycle of cumulative advantage (Ceci and Papierno 2005).

Of note is that the benefits of maternal education are not solely rooted in money or work. First, once other family circumstances were taken into account, family income was not related to quality and quantity of early child care, and it was only related to type of early child care when

children were very young. Although maternal education does bring economic returns, money does not necessarily help mothers differentiate high quality care from low quality care. Second, maternal employment was, as expected, related to early child care arrangements, but it was not consistently related to the association between maternal education and such arrangements. When children were three, mothers who did not work were more likely to choose center care. When children were older, both mothers who worked part-time and mothers who did not work preferred center care. These findings likely reflect a sensibility among mothers that center care is an ideal part-time arrangement. They may also reflect a dearth of high-quality child care centers. Observations of child care centers in the SECCYD found that less than 10 percent of all centers were rated as “excellent” (NICHD ECCRN 2000). Thus, when children needed to be in care full-time, mothers may have preferred a home environment in which they could have more authority to direct caregivers to attend to their children’s particular needs (Waldfogel 2005). Mothers with less stringent work schedules, on the other hand, may have been less concerned with quality than with having their children participate in a structured setting several times a week (Clarke-Stewart and Allhusen 2005). As important as these patterns are, they only partly explain why maternal education appeared to select children into early child care that prepared them for school.

Although we have demonstrated a linkage between maternal education and academically advantageous early child care, we must acknowledge the importance of selection. Our study suggests that education does affect parenting practices net of some very important factors, but we were not able to eliminate the possibility that other endogenous factors—especially intelligence—were spuriously driving the linkage between educational attainment and this focal form of parenting. Unfortunately, the SECCYD does not allow us to account for the effects of

intelligence or other similar factors. Secondly, we have not sufficiently explored racial and ethnic differences in work, parent education, and parenting that are certainly related to child care use. For example, Latino/as are underrepresented in the SECCYD, which is particularly problematic given prior research suggesting that Latino/a mothers are averse to non-familial child care (Crosnoe 2006). Additional studies will be needed to tease out the effects of race and ethnicity from those related to maternal education using other data sources. We should note, however, that other available data sources with the ability to measure spurious factors or to account for race/ethnic variability will not provide the same depth and detail on early child care—and all of its dimensions—as the SECCYD.

Over the past thirty years, organized child care has become the normative experience for young children in the U.S. This dramatic trend has co-occurred with a growing awareness that formal, pre-school entry experiences in child care can help children to succeed in school. Which children are getting this extra pre-academic boost? The results of this study suggest that children's exposure to pre-school enrichment increase along with their mothers' increasing educational attainment. These findings arrive at a core understanding of why education matters so much in the modern economy. Education imparts social, psychological, and cognitive advantages that mothers leverage in the intergenerational reproduction of advantage.

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