

Family Selection of Child-Care Centers: The Influence of Household Support, Ethnicity, and Parental Practices

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FULLER, BRUCE; HOLLOWAY, SUSAN D.; and LIANG, XIAOYAN. *Family Selection of Child-Care Centers: The Influence of Household Support, Ethnicity, and Parental Practices*. *CHILD DEVELOPMENT*, 1996, 67, 3320-3337. Accumulating evidence shows that young children benefit developmentally by participating in quality child-care centers and preschools. But we know little about which family characteristics and home practices influence parents' selection of a center-based program. This article reports on the influence of the family's social-structural attributes, ethnicity, and parental practices on the likelihood of selecting a center-based program, after taking into account economic characteristics. The odds that parents enroll their child in a center-based program are greatest when mothers are more highly educated, when the child is older, and when less plentiful (nonpaternal) social support is available to the mother, such as from a resident grandparent. Ethnic differences in the propensity to select centers were found, even after family-economic and structural variables were taken into account: African-American families were more likely than white or Latino families to use center-based care. Parental practices linked to the child's early literacy development and close supervision were related to the likelihood of center selection. Selection processes must be more carefully taken into account as researchers attempt to isolate the discrete effects of children's participation in centers and preschools.

The family's rising propensity to use varied forms of nonparental child care, witnessed over the past 4 decades, has sparked debate over the developmental effects on young children. By 1993, over 60% of all children aged 5 years and younger were receiving care by someone other than a parent on a regular basis (West, Wright, & Hausken, 1995). Initial findings suggest that significant cognitive and social effects result from participation in high-quality child-care centers (Caughy, DiPietro, & Strobino, 1994; Hayes, Palmer, & Zaslow, 1991).

Much less is known about which factors influence parents' propensity to enroll their child in a center-based program versus other forms of nonparental care. Without theoretical and empirical knowledge of how family processes influence the selection of various nonparental-care settings, we run the risk of attributing developmental effects of early childhood programs solely to the setting, rather than considering interactions between features of the home and the program (Holloway & Reichhart-Erickson, 1989). Initial research on the determinants of child-

care selection typically has focused on elements of the family economy: maternal employment status, the family's ability to pay for quality care, and relative prices of alternative forms of care (e.g., Hofferth & Wissoker, 1992). A few demographic studies have focused on social factors or processes that may explain patterns of child-care use: age of the child, family size, and the availability of spouse or proximate kin members (Leibowitz, Waite, & Witsberger, 1988). Yet alternative theoretical explanations for selection patterns have rarely been assessed side by side within a multivariate framework.

We propose a more complete explanatory framework that emphasizes, in addition to the family's economic resources, the influence of family social structure (linked to social support), ethnicity, and child-rearing practices on parents' child-care selections. These possible selection processes are then assessed using national survey data. A substantial amount of evidence now demonstrates how the family's social structure and parental practices—at times varying system-

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atically among ethnic groups— influence early cognitive and social development, including school-related learning (Goodnow & Collins, 1990; Hess & Holloway, 1984; Rogoff, Mistry, Goncu, & Mosier, 1993). We argue that forms of child care selected represent one important manifestation of how parents define their commitment to their child's development, albeit defined variably among and within different ethnic or cultural groups. Parents' expression of these developmental concerns, while constrained by factors operating outside the home, can be observed in terms of how mothers spend their time (working and/or staying at home), their ability to draw on proximate kin or friends to help provide child care, and their particular practices regarding child socialization and early literacy. If these parental practices are linked to the propensity to select formal centers, we can better identify mechanisms that link parenting behavior to the child's cognitive development and early school achievement, specifically, the process pertaining to management of the child's time outside the home.

First, we review three sets of factors that may influence child-care selection patterns: family economy, social structure and ethnicity, and parental practices. Covariates not fitting into these three theoretical perspectives are also discussed. Then, we empirically assess whether the family's social structure (including ethnicity) and parental practices influence the selection process, after taking into account previously investigated family-economy factors.

Family Economy

Escalating parental demand for child care is linked to women's rising labor force participation. In 1950, just 14% of all mothers with children under 6 years of age were in the labor force; by 1990, this proportion stood at 58%. Resulting growth in the number of center-based programs has been remarkable, rising from 13,600 licensed centers in 1965 to 80,000 nationwide in 1990 (Kisker, Hofferth, Phillips, & Farquhar, 1991). According to 1990 data, among families with an employed mother and a child under 5 years old, 70% selected some form of nonparental care as their primary arrangement, whereas only 35% of families with a nonemployed mother selected nonparental

care (Hofferth et al., 1991). However, if we look at the proportion of all families with children age 3–5 who reported that a *center-based program* provides their primary arrangement, the effect of maternal employment disappears: 44% among households with a fully employed mother, 45% with a mother employed part time, and 44% with a nonemployed mother (West, Hausken, & Collins, 1993). Many parents select centers even when the mother is not in the formal workforce.

Nor is family income linearly related to children's participation in nonparental or center-based programs. Rising government subsidies for low-income households have boosted supply and have helped to equalize quality levels along basic indicators (Fuller, Raudenbush, Wei, & Holloway, 1993). Initial studies suggested that the rate of center use may be curvilinear: high for low-income families receiving child-care subsidies and for affluent households, but lower for working-class families (Hofferth, West, & Henke, 1994).¹ Yet utilization rates appear fairly constant among households with very low to moderate income, from 45% for households with incomes under \$10,000 to 53% for households earning between \$30,000 and \$40,000 (West et al., 1993). In this article, linear and nonlinear income terms were included as covariates in order to determine the contribution of income to the selection of center-based programs.

Under the family-economy model, parents' demand for child care is also seen as being influenced by price of care. Among families with employed mothers and children under age 5 years, Hofferth et al. (1991) found that expenditures ranged from \$0.95 per hour for households with earnings under \$15,000 to \$1.69 for families with incomes over \$50,000. Fully 23% of family income goes for child care among the former group, versus just 6% for the latter set of households. Yet targeted subsidies for low-income families (via Head Start, subsidized slots in independent centers, and vouchers) have reduced private costs faced by these parents, boosting their propensity to enroll their child in a center-based program (Fuller, Eggers-Piérola, Holloway, Liang, & Rambaud, 1996).²

¹ Hofferth, Brayfield, Deich, and Holcomb (1991) found that working-poor and working-class parents utilized centers at rates 18% and 19% below that of middle-class parents. The former groups relied more heavily on kin members and home-based child-care arrangements.

² Relative prices of different types of providers also may influence whether parents choose a center-based program. Hofferth and Wissoker (1992), for example, found that parents facing

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The Family's Social Structure and Resources for Child Care

The family's social structure, especially social support available for child care, may vary independently of its economic resources. Family structure also varies across ethnic groups. One in 10 European-American households with children age 3–5 has a nonparent adult living in the household; this proportion is three in 10 for Latinos and almost four in 10 for African-Americans with comparable incomes (our analysis, see National Center for Educational Statistics, 1992).

We focus on three elements of the family's social structure that constitute potential sources of child-care support. First, fathers may be a principal source of child care in some families. After the mother, fathers are the principal care providers in 35% of all families with an employed mother and a preschool-age child (Bureau of the Census, 1988). The amount of time fathers provide as caregivers may differ by ethnic group: initial research suggests that Latino fathers provide more hours of care than fathers in other ethnic groups (Becerra & Chi, 1992). When the father is not present in the household, mothers must turn to other adults or formal child-care services.

A second element of the family's social structure is the number of nonparental adults living in the home. Initial studies suggest that the presence of a kin member or nonparent adult in the household lowers the likelihood of center use (Leibowitz et al., 1988). Heckman (1974) found that families with kin members living in close proximity also expressed less demand for center-based care (also, Hofferth & Wissoker, 1992). One survey of nonemployed single mothers showed that two-thirds relied on kin members for child care (Wellesley, 1988). However, presence of kin members does not always mean they will be used for child care. Black mothers are more likely than whites to live with nonpaternal kin members (Hofferth, 1984); yet these kin may themselves be employed and not available for child-care support. We empirically examine whether ethnic differences remain after taking into account variable family structures.³

Third, the presence of siblings appears to be related to child-care selection patterns. Leibowitz et al. (1988) found that families with more children were less likely to select centers. Parents with more children tend to rely more on relatives and paid babysitters than on centers, perhaps due to the relatively high cost of the latter (Hofferth et al., 1994).

Our analytic models assessed the effect on child-care selection of whether the father or other adult kin members were present in the household. The data do not permit us to directly observe whether these household members provided child-care support; rather, they are conceptualized as potential sources of support that may be accessed by mothers. This is the intrafamily process assumed in earlier research.

Parents' Child-Rearing Beliefs and Practices

Parents act from differing conceptions of how to raise children, including the importance they place on initiating educational activities. Considerable evidence has accumulated on how parents' early literacy practices, developmental expectations, and discourse patterns influence the child's social and cognitive development (Goodnow & Collins, 1990; Hess & Holloway, 1984). This constellation of parental practices may also be related to the likelihood of selecting a center-based program. On one hand, some evidence suggests that parents desiring providers who offer intellectual stimulation are more likely to select center-based programs than home-based providers (Phillips, Scarr, & McCartney, 1987; Powell & Widdows, 1987). Less educated parents who utilize formal teaching methods with their children (e.g., practicing number and letter recognition using flash cards) appear more likely to use didactic kindergarten programs (Stipek, Milburn, Clements, & Daniels, 1992). On the other hand, Kontos (1990) found no evidence that parents selected family day-care providers who were similar to themselves in terms of socioeconomic status, child-rearing preferences, or social support. Furthermore, evidence suggests that middle-class parents may tend to select more relaxed centers that *complement* or *offset*, rather than *match*, the

higher local prices for centers and paid babysitters did utilize these modes of care at significantly lower rates, compared to families facing lower local prices.

³ The availability and use of kin members for child care is likely conditioned by other aspects of the social context. For instance, rural families select centers at a lower rate, in part due to their higher propensity to use kin members (Atkinson, 1994; General Accounting Office, 1993). This may be partially explained by supply constraints: per capita availability of center-based programs is relatively low in rural and working-class communities (Fuller & Liang, 1996).

more intense educational environment of the home (Rescorla, Hyson, & Hirsh-Pasek, 1991).

The survey from which we obtained our data (National Center for Educational Statistics, 1992) included items from the HOME scale on early literacy practices exercised by parents (e.g., mothers' reported frequency of reading to the child, number of children's books in the home, parental modeling of reading), as well as other practices thought to be related to early school achievement (e.g., organizing visits to the library or museum, rules for limiting the child's television viewing; Bradley, 1993; Caldwell & Bradley, 1978). These early literacy practices have been associated with later reading achievement (Hess, Holloway, Price, & Dickson, 1982). Extensive television viewing, another item contained in the survey, is associated with lower school achievement (Barton & Coley, 1992; Glenn, 1994). We hypothesized that parents who are more oriented toward explicit cognitive stimulation as represented by these HOME items may be more likely to select center-based programs, likely to be perceived as more "educational" than other forms of nonparental care. We studied the additional explanatory power of these parental practices on the family's propensity to select centers rather than less formal settings.⁴

Ethnicity

One aim of this article is to obtain a clearer understanding of how family attributes—differing between *and* within ethnic groups—influence the selection of center-based programs. As North American families become more diverse, due to immigration and higher birth rates of some groups, the number of ethnic minority children utilizing child-care services has grown rapidly. In California, for example, just 47% of all children, age 14 or younger, are of European-American descent, evidence of this state's increasing diversity (PACE, 1995). Ethnicity—and how family structure and parental practices vary among ethnic groups—appears to significantly influence the child-care selection process.

Descriptively we know that the family's propensity to select center-based programs is related to their ethnic membership. Hofferth et al. (1994) report that black families

select centers at a higher rate than other ethnic groups, controlling on family income. Among impoverished families, children with non-English-speaking parents are less likely to enter a center (General Accounting Office, 1993; Liang, 1996). Figure 1 illustrates how the relation between maternal employment and selection of a center-based program is conditioned by ethnic membership (among families using nonparental care; analysis of National Center for Educational Statistics, 1992). The propensity to use centers is actually *higher* for poor families with a nonemployed mother (who qualify for child-care subsidies) and affluent families with a nonemployed mother. After taking into account maternal employment, selection rates vary among the three ethnic groups: Latino children whose mothers work full time participate in center-based programs at a rate 23% below that of African-Americans and 11% below whites.

What family-level characteristics underlie these ethnic-group differences in the selection of center-based programs? Three reasons help to explain these interethnic differences in center participation. First, ethnic groups may display mean differences in social structural or economic attributes that are related to opportunities to obtain child care. For example, black and Latino households are more likely than white households to include a resident grandparent or adult kin member (Harrison, Serafica, & McAdoo, 1984; Pearson, Hunter, Ensminger, & Kellam, 1990). Support provided by these kin is linked to higher maternal labor force participation, which may lead to higher demand for center-based care as the child grows older (Figueroa & Melendez, 1993). Another variable showing significant ethnic differences is whether or not mothers work full time or part time; black mothers of preschoolers are significantly more likely to work full time than are white mothers; Hispanic mothers are more likely to be nonemployed (Folk & Beller, 1993).

The relation between the family's economic resources and the propensity to use center-based programs appears to be conditioned by ethnic membership. We know that ethnic groups differ in their average income levels nationwide (Garcia Coll, 1990;

⁴ Caution must always be exercised in evaluating the validity of reported parental practices. However, prior work has validated parents' self-reports of early educational practices against their actual behaviors at home and on mother-child laboratory tasks (Bradley, 1993; Hess & Holloway, 1984).

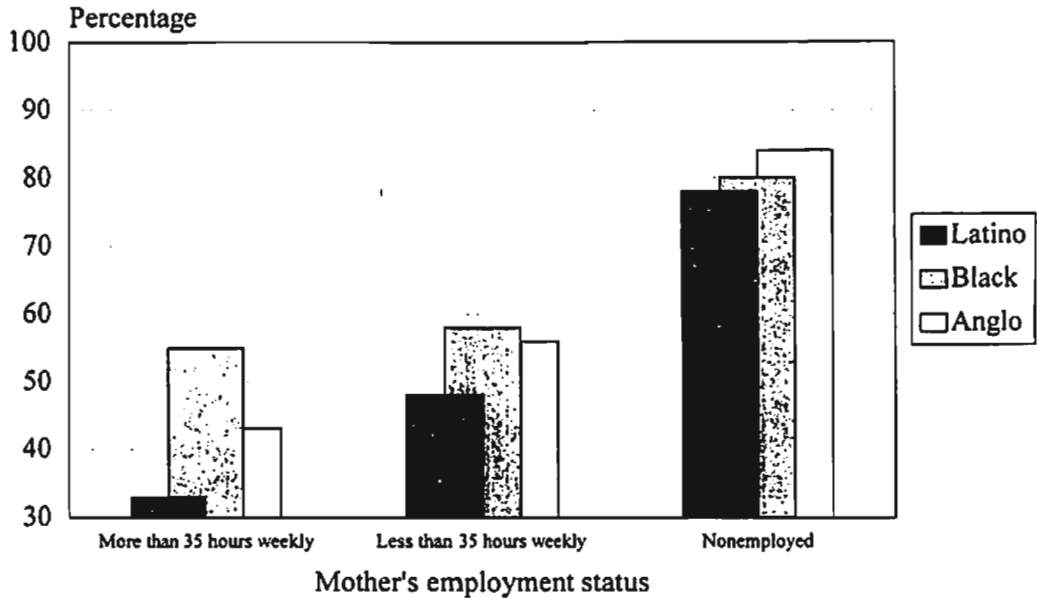
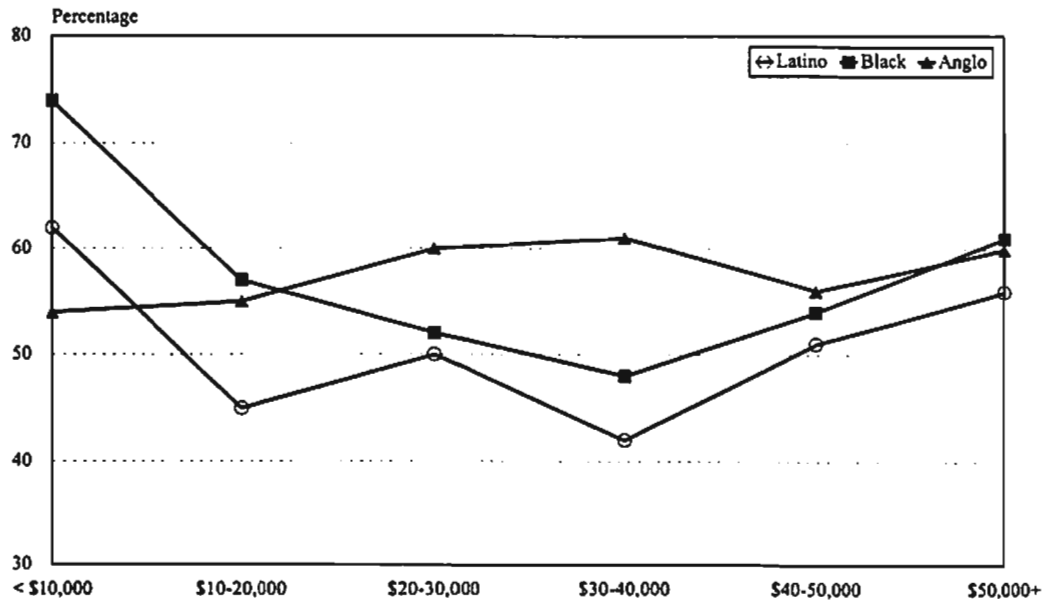


FIG. 1.—Proportion of families selecting a center-based program

McLoyd, Jayaratne, Ceballo, & Borquez, 1994). But, as displayed in Figure 2, the relation between income and center selection differs among ethnic groups. Black and Latino parents earning under \$10,000 show a relatively high propensity to select centers compared to whites. Selection of center-based programs is lower for black and Latino working-class and middle-income groups

relative to impoverished blacks and Latinos. But this dip in center use is *not* apparent for whites (as previously suggested by Phillips, Voran, Kisker, Howes, & Whitebook, 1994). Their rate of center selection is consistent across income ranges.

A second factor accounting for ethnic differences in the family's likelihood of



Note: For families under \$10,000, n=277; \$10-20,000, n=483; \$20-30,000, n=994; \$30-40,000, n=624; \$40-50,000, n=482; \$50,000+, n=550. Value for blacks earning \$40-50,000 is interpolated due to small subsample.

FIG. 2.—Proportion of families selecting a center by income level

choosing a center may be related to cultural differences in child-rearing beliefs and practices. Families in certain ethnic or cultural groups may shy away from formal preschool programs that appear to promote unaccustomed or undesirable socialization practices and values. To the extent that Latino families are family oriented, endorse warm parenting practices, and emphasize collective forms of obligation over individualism and self-assertion (Delgado-Gaitan, 1994; Hashima & Amato, 1994), Latino parents may prefer family day-care, where caregivers are familiar with, or at least of similar background to, the parents. At least one study has found that teachers in centers serving low-income families are more likely to be harsh, relative to centers serving affluent families (Phillips et al., 1994). Thus Latino parents, disproportionately represented among poor families, may be even more motivated to avoid center-based care. One qualitative study found that Latina mothers complained that Anglo preschool teachers did not speak Spanish, and seemed cold and impersonal in their interactions with parents and children (Fuller et al., 1996).

Ethnic differences are apparent in preferences regarding what forms of cognitive stimulation parents seek for their young children. Several studies have found a pro-education orientation among ethnic minority parents with preschool-age children, including a preference for didactic instruction rather than child-centered, play-oriented forms of learning (Bowman, 1994; Joffe, 1977; Powell, 1994). Stevenson, Chen, and Vital (1990) found that black and Hispanic parents of elementary school students were more enthusiastic than white parents about the value of education and more likely to emphasize the utility of homework, competency examinations, and a longer school day. Black parents in this sample reported engaging in more didactic teaching at home with their preschoolers. Parents who seek structured, didactic educational experiences may more likely pick centers over family day-care, since the center seems a more "school-like" institution (Holloway, Rambaud, Fuller, & Eggers-Piérola, 1995).

A third mechanism through which ethnicity may influence child-care selection is that the supply of center-based programs may covary with the ethnic composition of neighborhoods. The supply of center-based programs is highest in the South, in part due to the historical growth of Head Start centers within poor black communities (Kisker et al.,

1991). In 1990, 30% of eligible African-American children, 34% of Latino, and 13% of white children were enrolled in Head Start. After adjusting for other differences, such as parental education and income, black children were still significantly more likely than white children to be enrolled (Hofferth, 1994). Our theoretical focus is on intrafamily processes that may differ between and within ethnic groups, yet organizational supply may interact with family-level processes to shape the odds of center selection for particular ethnic groups.

Maternal Education

Parents' educational levels appear to be related to a higher propensity to select center-based programs (Bureau of the Census, 1988; Hofferth et al., 1991). Among households using some form of nonparental care, only 30% of families where neither parent has completed high school select a center, versus a 73% rate of center use for parents with some graduate training (West et al., 1993). Maternal educational levels have been consistently associated with certain child-rearing practices, particularly those pertaining to early literacy acquisition (e.g., Hess & Holloway, 1984). Maternal education likely captures a broad range of factors linked to social-class position, attitudes toward schooling and early development, and available resources. In our analysis, maternal education was entered as a covariate; then we assessed the additional influence of specific parental practices. Like ethnicity, the component elements of maternal education should be decomposed into specific factors associated with selection of center-based programs.

Child's Age and Gender

Children are much more likely to participate in centers as they approach age 5: just one in six youngsters under age 3 was enrolled in a center (1990), versus one in every three children age 3–4 years (Hofferth et al., 1991). This likely reflects a consensus among parents that formal programs are more appropriate for preschool-age children than for infants and toddlers. Our analysis included child age as a possible determinant of participation in center-based programs; this factor was viewed as a covariate, given that the data do not permit us to infer how parents' age-related beliefs influence the selection process. Child gender has received little attention in early studies of child-care selection. Given that some families may hold gender-specific developmental beliefs, we included it as a covariate as well.

Multivariate Framework: The Influence of Family Social Structure, Ethnicity, and Parental Practices on Center Selection

Our analysis focused on two central questions. First, do family social structure, ethnicity, and child-rearing practices help to explain parents' propensity to select centers, after taking into account the following covariates: family-economy factors, child age, child gender, and maternal education? Second, how do these social-structural features and parental practices operate within different ethnic groups in estimating the likelihood of center selection? To address this second issue, family social structure, parental practices, and the covariates are examined within each of three ethnic groups: European-Americans (whites), African-Americans, and Latinos. In a final set of analyses, we probe the robustness of our findings in comparing the effects of our predictors for families where the mother is not employed outside the home, employed part time, or employed full time.

Method

National Survey Data

Only recently have national data become available that allow assessment of how a variety of family-level factors influence parents' selection of child care. The first National Household Education Survey (NHES) was conducted between February and April, 1991, by the National Center for Educational Statistics (1992). Clusters of households were randomly selected nationwide; then telephone numbers were randomly selected for sampled households. The survey focused on families with at least one child, age 3–8 years. In most cases the respondent was the mother. Parents were asked about their child-care settings, the social and educational features of the home, as well as basic demographic and economic information

about the household. We retained all families with children age 3–5 years who had not started kindergarten.⁵ This procedure yielded a nationally representative subsample of 4,761 households (technical details on the sampling method appear in National Center for Educational Statistics, 1992).

Due to the cluster-sampling procedure, standard errors of estimation may be underestimated, linked to constrained variances relative to the true population which stem from the relative homogeneity among families within clusters (design effects in variances averaged 1.3 in magnitude). With large sample sizes and low standard errors (relative to the magnitude of most coefficients), distortions in standard errors (and thus significance levels) are slight.⁶ Nonetheless, we conservatively reduced reported significance levels: logistic regression coefficients having a significance, $p < .001$, are reported as being significant at $p < .01$, and $p < .01$ is reported as $p < .05$.

Measures and Indices

Family economy covariates.—Maternal employment status was indicated by three dichotomous variables: whether or not the mother was working at least 35 hours per week (full time), whether she was working fewer than 35 hours (part time), and whether or not she was employed in the formal workforce (nonemployed). The NHES asked mothers to report their total household income within one of 10 possible increments, ranging from under \$5,000 to over \$75,000. This ordinal variable was transformed into a continuous variable with five equal (\$10,000) intervals, plus a sixth group made up of families earning over \$50,000. We also included two polynomial forms of family income, squared and cubed terms, to model possible curvilinear effects (found by Phillips et al., 1994, in selected local areas).⁷

⁵ Within 334 households the mother reported having two such children; because our analysis was at the household level, we randomly chose one of the two children as the "target child."

⁶ Liang (1996, pp. 67–72), analyzing the 1993 NHES data, directly compared standard errors and significance levels derived without correction for the design effects, and those obtained using SUDAAN that can include corrections. She studied four final models with 10 significant regression coefficients. After making the adjustment, just one became insignificant, falling below $p < .05$. Design effects are detailed in National Center for Educational Statistics (1992, pp. 23–24).

⁷ Since household income was correlated with the presence of a fully employed father ($r = .45$), father's employment status was not included in our regression analyses. Relative prices of different types of child care, as introduced above, may further influence parents' propensity to utilize centers. The NHES survey did not ask families to report fees paid, among those charged fees by centers or babysitters. To estimate the relative price of center-based programs, we drew on the 1990–91 Urban Institute household survey, which does report prices paid by parents for different types of care (Hofferth et al., 1991). Then we estimated center prices (fees charged per hour) from the region in which families resided and whether they owned their home, for five

Child-level demographic covariates.—Child age and child gender were included in all models as covariates.

Maternal education level.—Given the potential importance yet theoretical imprecision of maternal education, we entered it as an individual predictor. Mothers reported their level of schooling in one of nine original categories, ranging from less than high school diploma to graduate training. Given this variable's skewed distribution (the mode equaled "some college"), we collapsed the scale into four values, then took the natural log.

Social structure and ethnicity.—The survey inquired about the family's social structure, including the household presence of the father, nonparent adults, and other children in addition to the "target child." Our initial analyses examined possible effects of all nonparent adults, but results were more consistent for grandparents. The father's presence in the household was included as a second factor related to the amount of social support possibly available for child care. The number of children in the household, an indicator of the amount of child-care support needed, was significantly associated with the dichotomous variable of whether a sibling of the target child resided in the household. The latter variable was more consistently related to center selection and retained. Our sample contained data on three ethnic groups, including European-American ($n = 2,472$), African-American ($n = 430$), and Latino ($n = 368$) families that reported using nonparental forms of child care.⁸

Parental practices.—Mothers were asked questions on early literacy and socialization practices pertaining to the target child. These questions, drawn from the HOME scale, included parents' reported reading practices with their preschool-age child, presence of children's books, frequency of visits to a library or museum, par-

ticipation in other educational activities, and supervision of television viewing. A listing of relevant survey items appears in the Appendix. A composite index of *early literacy practices* was constructed from two questions: the frequency with which mothers reported reading to their child, and the estimated number of children's books in the household ($r = .23$). Three additional indicators of parents' commitment to creating a literate environment for children were studied: the average number of hours that children watched television, whether parents set rules for limiting TV viewing, and whether or not the family received a daily newspaper at home.⁹ The hours of TV viewing reported by parents may be endogenous to center enrollment, not an indicator of parental practices that precede child-care selection. So, the final model included only whether parents set rules that limit TV viewing. This is an index of two specific measures: whether rules are set pertaining to certain days when the preschooler can watch TV, and whether rules are set pertaining to the number of hours per day ($r = .74$).

Data limitations.—These data are constrained in three ways. First, surveys cannot include operationalized measures of all within-family factors that have been associated theoretically with child-care selection. However, analysis of these data does provide evidence, for a nationally representative sample, on how important elements of family structure and parental practices may shape selection, heretofore not examined empirically in a multivariate context. Second, HOME scales regarding parental practices were included in the survey to the exclusion of a broader set of parental beliefs, values, and developmental expectations (e.g., Goodnow & Collins, 1990; Phillips et al., 1987). Additional measurement work is required to ensure that HOME items used in national telephone surveys retain validity levels established when observational data are collected through home visits. Third,

separate income quintiles. Intercepts and beta coefficients obtained throughout these estimations were then used to estimate center prices faced by families included in the NHES survey. These price estimates held no significant relation after controlling on family income (linear and polynomial terms) and maternal employment status. Thus the price predictor was dropped from our analysis. Future analyses, however, using observed prices could inform whether, and for which families, prices remain a telling factor.

⁸ We did not analyze the subsample of Asian and Pacific Islander families who participated in the national survey, given the small sample size of this diverse group ($n = 104$).

⁹ Preliminary analyses showed that three other educational activities on which mothers reported—frequency of going to the library, museum, and movies—showed low interitem reliabilities and were not correlated with child-care selection. They were not included in the final model.

questions regarding the quality of center-based programs were limited in number and scope, preventing us from studying this facet of selection.

Modeling How Family Factors Influence Selection of Center-based Programs

We used logistic regressions to estimate the likelihood of selecting center-based programs versus any other form of nonparental care (among families who use nonparental care providers). For each outcome measure, we initially created three hierarchical regression models. In the *baseline model*, we entered the full set of covariates: family economy (income index, the index squared and cubed, mother employed full time, and mother employed part time), child age and gender, and maternal education. These represent demographic factors that, while important, are theoretically less precise than the predictors of substantive interest. In the *social structure and support model*, we entered the covariates followed by the first block of predictors that are of substantive interest: social-structural elements of the family (i.e., father resident, grandparent resident, sibling of the target child in the household, family ethnicity). In the *final model* we added the block of *parental practices* (index of early literacy practices, rules regarding TV viewing by the child, and whether or not a newspaper was received daily).

We report results for the final model only. We also indicate the relative magnitude of each block of predictors by comparing decrements to χ^2 for the final model when entering the social-structural predictors, then the parental practices. For this final model, we then conducted separate analyses to compare the efficacy of these predictors for different subgroups: (a) families divided by ethnicity (European-American, African-American, and Latino), and (b) families divided by maternal employment status (full time, part time, and nonemployed).

Findings

Descriptive statistics: Family characteristics that vary between and within ethnic groups.—Table 1 reports variation in family characteristics across ethnic groups, as well as variability within ethnic groups, splitting households between those that selected center-based programs versus those that did not. Some variables, such as family income, vary across ethnic groups but do not discriminate—within each ethnic group—

between center-selecting parents and other parents. For example, the family-income index equals 3.9 for white families that utilized center-based programs and 3.8 for whites using other forms of nonparental care (the high end of the \$20,000–\$30,000 income increment). Black and Latino families, regardless of whether or not they select center-based programs, fall high in the \$10,000–\$20,000 increment or low in the \$20,000–\$30,000 increment, respectively. In contrast, rates of full-time maternal employment vary across ethnic groups, but within each group, maternal employment also differs between families selecting center care and those not selecting centers. Half of all black mothers who select centers are employed full time, versus just 34% of white mothers.

Similarly, the social structure of families varies among and within ethnic groups. Among black families selecting centers versus other forms of nonparental care, 19% and 26% have a grandparent residing in the household, respectively. For Latinos, these proportions are 8% (for those selecting centers), compared with 19% (for those opting for noncenter care). Fathers are present in 58% of all black households selecting centers, versus 90% for whites.

Maternal schooling levels vary between white families selecting centers versus those selecting another form of nonparental care: 65% and 56% of mothers having some post-secondary education, respectively. While black and Latino mothers have less schooling, relative to whites, systematic differences are not observed within black and Latino groups when each is split between center and noncenter users. Significant differences are observed among ethnic groups in early literacy practices, but not within ethnic groups for center and noncenter users. In contrast, between-ethnic-group differences in the child's TV viewing are not as large, relative to differences within ethnic group, with center users reporting about one-half hour less TV than families not selecting centers. For Latino families, center users are much more likely to set rules limiting TV viewing, relative to Latinos who do not use centers. This same gap is apparent in the frequency with which Latino parents visit a library with their preschool child.

Multivariate models.—Table 2 reports the final regression model for estimating the probability that parents selected a center-based program, among all families using nonparental care. Column 1 reports the final model for the full sample of households.

TABLE 1
ECONOMIC AND SOCIAL CHARACTERISTICS OF WHITE, BLACK, AND LATINO FAMILIES, SPLIT BY USE OF CENTER-BASED PROGRAMS
OR OTHER FORMS OF NONPARENTAL CHILD CARE

	WHITE		BLACK		LATINO	
	In Centers (n = 1,452)	In Other NP (n = 1,024)	In Centers (n = 262)	In Other NP (n = 168)	In Centers (n = 182)	In Other NP (n = 186)
Family economy:						
Income index	3.9 (1.41)	3.8 (1.45)	2.8 (1.56)	2.9 (1.35)	3.1 (1.51)	3.2 (1.37)
Mother employed full time (% of families) .....	.34 (.45)	.56 (.49)	.50 (.50)	.63 (.48)	.32 (.46)	.68 (.46)
Mother employed part time (% of families) .....	.26 (.44)	.28 (.45)	.17 (.37)	.19 (.39)	.15 (.35)	.16 (.36)
Social structure:						
Grandparent present in household (% of families) .....	.04 (.20)	.07 (.25)	.19 (.39)	.26 (.44)	.08 (.27)	.19 (.39)
Father present in household (% of families) .....	.90 (.30)	.82 (.38)	.58 (.49)	.52 (.50)	.83 (.37)	.75 (.43)
Target child has sibling in household (% of families) .....	.81 (.40)	.76 (.42)	.71 (.45)	.73 (.44)	.76 (.42)	.76 (.42)
Age of target child (years)	3.8 (.68)	3.7 (.68)	3.7 (.64)	3.5 (.66)	3.8 (.59)	3.6 (.50)
Maternal education:						
Mother has some postsecondary education (% of families) .....	.65 (.47)	.56 (.49)	.45 (.49)	.44 (.49)	.34 (.47)	.38 (.48)
Parental practices:						
Early literacy practices (index)	1.51 (.54)	1.47 (.56)	.99 (.67)	1.01 (.67)	1.10 (.72)	.98 (.70)
Parents set rules for TV viewing (index) .....	.59 (.49)	.53 (.49)	.69 (.46)	.65 (.47)	.70 (.45)	.51 (.50)
Daily hours of TV viewing by child	2.53 (1.38)	2.94 (1.66)	2.70 (1.48)	3.23 (1.88)	2.73 (1.51)	3.19 (1.83)
Household receives daily newspaper (% of families) .....	.63 (.48)	.59 (.49)	.54 (.49)	.58 (.49)	.43 (.49)	.46 (.50)
Visited library with child, past month (% of families) .....	.45 (.49)	.37 (.48)	.31 (.46)	.27 (.44)	.35 (.47)	.21 (.40)
Accompanied child to movies, past month (% of families) .....	.39 (.48)	.41 (.49)	.55 (.49)	.55 (.50)	.41 (.49)	.44 (.50)

NOTE.—Numbers are means (and standard deviations). NP = nonparental care.

TABLE 2
 FINAL MODELS: THE INFLUENCE OF MATERNAL EDUCATION, SOCIAL STRUCTURE AND ETHNICITY, AND PARENTAL PRACTICES ON THE PROBABILITY
 OF SELECTING CENTER-BASED CHILD CARE, CONTROLLING ON COVARIATES

	Full Sample (n = 3,249)	White Families (n = 2,362)	Black Families (n = 402)	Latino Families (n = 356)
Family economy covariates:				
Family income index	-.65 (.44)	.39 (.57)	-2.99* (1.28)	-1.25 (1.32)
Income squared .....	.18 (.13)	-.10 (.16)	.85* (.37)	-.40 (.42)
Income cubed	-.01 (.01)	.01 (.02)	-.06 (.03)	-.03 (.04)
Mother employed full time	-1.91*** (.10)	-1.95*** (.12)	-1.19*** (.31)	-2.30*** (.32)
Mother employed part time	-1.43*** (.11)	-1.46*** (.13)	-1.15** (.36)	-1.60*** (.38)
Child-specific covariates:				
Child's age .....	.23*** (.05)	.18** (.06)	.46* (.17)	.34 (.20)
Child's gender (male = 0, female = 1)	-.08 (.07)	-.07 (.09)	-.37 (.22)	-.13 (.25)
Maternal education .....	.50*** (.10)	.60*** (.13)	.13 (.29)	.09 (.30)

Family social structure and ethnicity:				
Grandparent in household	-.54***	-.47*	-.42	-1.09**
	(.14)	(.21)	(.29)	(.40)
Father present .....	.50***	.51***	.32	.53
	(.12)	(.16)	(.24)	(.33)
Sibling in household	-.16	-.12	-.32	-.45
	(.09)	(.11)	(.25)	(.30)
Black family .....	.54***	...	...	...
	(.12)	...	...	...
Latino family	-.27	...	...	...
	(.15)	...	...	...
Parental practices:				
Early literacy practices (index) .....	.01	-.03	-.28	.27
	(.07)	(.08)	(.17)	(.20)
Parent sets TV rules .....	.20*	.15	.15	.65*
	(.07)	(.09)	(.23)	(.26)
Receive daily newspaper .....	.02	.04	-.14	-.26
	(.08)	(.09)	(.22)	(.26)
Equation:				
Intercept .....	.58	-.40	2.98	.64
	(.50)	(.65)	(1.28)	(1.47)
-2 log likelihood	3909.0	2837.4	485.6	394.3
df	16	14	14	14

NOTE.—Numbers are logistic regression coefficients and SEs. * $p < .05$, ** $p < .01$, *** $p < .001$ (after accounting for any underestimation of standard errors due to design effects). For information, * $p < .05$ without adjustment for possible design effects.

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Family income has no independent relation with the probability of selecting a center-based program. Maternal employment status is negatively related, indicating what we observed above descriptively: among these families who use nonparental care, nonemployed mothers show a higher likelihood of selecting centers rather than another form of nonparental care. Child age is positively related to center selection: 4- and 5-year-olds are more likely to be in centers than are 3-year-olds.

After taking into account family economy and child covariates, maternal education exerts a strong effect on the likelihood of selecting a center, as does presence of the father in the household. The presence of a grandparent in the household does suppress the likelihood that a center-based program is selected. Even after entering these predictors, which help to decompose general ethnic effects, the influence of ethnicity remains significant: black families continue to show a significantly higher propensity to select a center; Latino families remain less likely, although the latter coefficient falls just below statistical significance.

With regard to parental practices, we see that parents who set rules limiting TV viewing are more likely to select a center. No additional significant coefficients are observed for early literacy practices. To assess the relative influence of the blocks of social structure and ethnicity predictors, as well as the parental practices, we compared the decrements to χ^2 as we entered the two sets of predictors. Building from the baseline model (family economic, child covariates, and maternal education) the decrements equaled 41.7 ($p < .0001$) for family social structure and ethnicity, and an additional 104.0 ($p < .0001$) for the block of parental practices. Each set of predictors is contributing substantially to our ability to estimate the odds of center selection.

Findings for individual ethnic groups.—Table 2 also reports results from the final model for each of the three ethnic groups. For white families (column 2), the results are similar to the findings for the whole sample, except that individual parental practices are not significantly related to selection of a center-based program. The pattern observed for black families (column 3) diverges in several significant ways. The linear term for family income is *negatively* related to center selection, corresponding to the downward slope observed in Figure 2 for low-income black households. This suggests that as black families become ineligible for subsidies, their

ability to enter center-based programs declines. The positive effect from the squared income term maps against the turn of this negative slope onto a rather flat plateau among working and middle-income black households (Fig. 2). The lack of effect from maternal education is notable, corresponding to the fact that both poor and affluent black families have roughly equal rates of selecting centers. Girls are less likely to be enrolled in centers, relative to boys; this coefficient is not statistically significant but warrants further study.

The final model for Latino families (column 4) also shows a somewhat different pattern, compared to white and black households. The suppressing effect of having a resident grandparent is quite strong for Latinos: those with a resident grandparent are three times less likely to select a center-based program, relative to Latino households with no grandparent in residence. Among blacks, those with a resident grandparent are 1.6 times less likely to select a center, compared to black households without a grandparent. Again, we see no effect from maternal education. The relation between setting rules for TV and center selection is strong and significant. By comparing these ethnic-specific models with the full sample (column 1), we see how certain predictors, varying in their mean levels among ethnic groups, consistently help explain center selection; other predictors differ across groups in their effects on center selection.

Findings for employed and nonemployed mothers.—In Table 3 we report the final model for families where the mother is working outside the home full time, part time, or nonemployed. For families with mothers employed full time (column 1), the linear family-income term is strongly and negatively related to center selection but fails to reach statistical significance ($p < .07$ without adjustment for possible design effects). For this group, child age is unrelated to use of a center-based program. The suppressing effect of having a resident grandparent is estimated with the least amount of error, relative to the other two groups of families. Father presence is no longer related, and having a sibling present in the household now becomes influential and statistically significant, *lowering* the odds of center selection. For these families with fully employed mothers, black ethnic membership remains significant and positive; Latino membership becomes marginally significant in lowering the odds of center selection. The setting of TV limits continues to be associ-

TABLE 3

FINAL MODELS: THE INFLUENCE OF MATERNAL EDUCATION, SOCIAL STRUCTURE AND ETHNICITY,
AND PARENTAL PRACTICES ON THE PROBABILITY OF SELECTING CENTER-BASED CHILD CARE
BY MOTHER'S EMPLOYMENT STATUS

	MOTHER'S EMPLOYMENT STATUS		
	Full-Time Job (n = 1,470)	Part-Time Job (n = 814)	Nonemployed (n = 965)
Family economy covariates:			
Family income index	-1.21 (.66)	-.76 (.84)	-.32 (.95)
Income squared .....	.33 (.20)	.21 (.25)	.02 (.31)
Income cubed	-.02 (.02)	-.01 (.02)	.01 (.03)
Child-specific covariates:			
Child's age .....	.10 (.08)	.23 ⁺ (.11)	.63*** (.13)
Child's gender (male = 0, female = 1) .....	.12 (.10)	-.19 (.14)	-.59** (.18)
Maternal education .....	.38* (.15)	.57* (.22)	.65** (.22)
Family social structure and ethnicity:			
Grandparent in household	-.45* (.20)	-.66 ⁺ (.33)	-.39 (.28)
Father present .....	.25 (.15)	.82** (.28)	.89*** (.25)
Sibling in household	-.28* (.12)	-.30 (.20)	.41 (.22)
Black family .....	.54*** (.15)	.57 (.29)	.46 (.30)
Latino family	-.45 ⁺ (.22)	-.48 (.34)	.25 (.36)
Parental practices:			
Early literacy practices (index)	-.10 (.09)	.14 (.13)	.006 (.14)
Parent sets TV rules .....	.22 ⁺ (.11)	.13 (.15)	.02 (.18)
Receive daily newspaper .....	.06 (.11)	.14 (.13)	.24 (.18)
Equation:			
Intercept .....	.24 (.77)	-1.03 (1.00)	-1.86 (.98)
-2 log likelihood	1960.4	1072.8	807.4
df	14	14	14

NOTE.—Numbers are logistic regression coefficients and SEs. * $p < .05$, ** $p < .01$, *** $p < .001$ (after accounting for any underestimation of standard errors due to design effects). ⁺ $p < .05$ without a conservative adjustment for possible design effects.

ated with center selection (at $p < .05$ before adjustment).

Let us turn to nonemployed mothers (column 3), offering the sharpest contrast with fully employed mothers. No effects from income are apparent. Both the child's age and gender are strongly related to the odds of center selection. Girls are much less likely to be enrolled in a center, relative to boys. The influence of maternal education is strongest for these families with nonemployed mothers, relative to the other two employment groups. The positive effect of

father presence is very strong. The suppressing influence of a resident grandparent is not observed. Any residual effect from ethnic membership now disappears. Families with nonemployed mothers are equally likely to select centers, regardless of ethnicity.

Discussion

We interpret major findings within each of the three explanations of child-care selection assessed in this study. First, family income holds a complex relation with the pro-

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pensity to select a center-based program. Very low-income black and Latino households display the highest rates of center utilization (74% and 62%, respectively; Fig. 2), relative to other income groups and to whites. The curvilinear dip in the rate of center selection, observed earlier in local studies, is apparent among black and Latino working-class and middle-income families (falling below 50% of families using nonparental care, for both ethnic groups, earning \$30,000–\$40,000). The linear effect of income on center selection is actually negative for blacks, suggesting that as families become ineligible for subsidies, their ability to enter a center declines. This finding indicates that the growth of child-care subsidies has helped to equalize access to center-based programs for the lowest-income families. For whites, the odds of selecting a center-based program are quite similar across all income levels. Among parents using nonparental care, it is nonemployed mothers—a group made up of both low-income and affluent women—who hold a higher propensity to select center-based programs.

This finding serves to correct a widespread assumption that better educated mothers are more likely to select a center-based program. This effect is strong and significant for white families. But there is no observable relation when looking at black or Latino households, after controlling for family-economic factors. For blacks, this may stem from the success resulting from rising child-care subsidies. The subsidy effect may also help offset the suppressing effect of Latino mothers' low educational levels, especially in light of the fact that non-English-speaking Latinos select centers at a significantly lower rate than do English-speaking parents of Latino descent (Liang, 1996).

Second, certain family structure effects operate consistently across all three ethnic groups. For example, the role of grandparents in suppressing center use was consistent across all subgroups (though differing in magnitude). The presence of the father is positively related to center use, but only among white families. Father presence displays no independent effect for black or Latino families, a finding that also invites further research.

Third, we found that parental practices varied greatly among families, particularly those related to preliteracy activities and creation of a more literate home environment not dominated by the television. These

parental practices likely influence cognitive development through direct parent-child interaction and via how parents manage the child's experience in early learning settings *outside* the home. Variables such as parents' efforts to limit TV may serve as proxies for more fine-grained parental practices. But they do suggest that commitments to early literacy and cognitive growth are associated with a greater likelihood of selecting a center-based program.

This study helps to untangle the elements of family structure and parenting practices that explain the general effect of ethnic membership. For instance, the suppressing effect of Latino membership on selecting a center was moderated considerably by maternal education (earlier suggested by Hofferth et al., 1994). The propensity of Latino families to have a resident grandparent helps to explain their lower reliance on centers. But even when these factors were entered, Latino families still displayed a lower likelihood of selecting centers.

The positive influence of African-American membership on center selection was more robust than the negative Latino effect. When father presence was taken into account, the coefficient for black ethnicity fell slightly but remained highly significant (when stepping-in blocks of predictors, not detailed here). Much research remains to be done on why African-American families display a stronger propensity to select center-based programs. This could be rooted in family-level processes not observed in this study, or in organization-level factors that have led to higher supplies of centers within predominantly black communities.

These findings hold implications for how child-care policies are crafted and how we assess the discrete effects of center-based programs. Much of the debate over broadening access to quality centers continues to focus on the alleged economic constraints facing families. Consistent with this concern, our findings confirm that affluent families do participate in center-based programs at the highest rate. At the same time, family income continues to constrain participation of low-income white families. For many low- and middle-income families, however, after taking into account the household's income and maternal employment status, social structural and parental practices appear to play a more influential role. Family structures vary across ethnic groups, with whites and Latinos exhibiting a higher rate of intact two-parent households,

compared to African-Americans. Black and Latino households have a higher incidence of resident grandparents. Both structural elements influence the participation of young children in centers. While further policy progress is required to reduce economic constraints on access to centers, policy-makers should also recognize the social elements of the family that contribute to the selection process.

Parental practices—varying among and within ethnic groups—exert an additional influence on the selection of center-based programs. Policy-makers and child-care professionals are struggling to understand which forms of child care are best for different families; our findings suggest similar diversity in the basic process by which parents select their child-care provider. We should push to gain a better understanding of how parents' thinking about their child's development and socialization, in part bounded by ethnic or cultural membership, influences how they choose child care.

This becomes particularly important as we begin focusing on the interaction between home practices and the "treatment effect" of participating in center-based programs. If we fail to specify the roots of selectivity effects, we will mistakenly attribute developmental change to the child-care provider, rather than to pre-existing family processes that covary with selection. At the same time, we may underestimate the benefits of center-based programs by failing to conceptualize interactions between family selection factors and center practices. Longitudinal data are required to assess how these sequential processes unfold as the child grows older, and to reveal how parental practices and centers, together, may yield a variety of child outcomes.

Appendix

Original Home Environment Scales

Literacy Items

P19. About how often do you read stories to [child]? Five-point frequency scale.

P20. About how many children's books does [child] have of [his/her] own? Four-point scale.

P21. Does your family get a daily newspaper? Yes/no.

P24. In the past week have you or someone in your family done the following things with [child]? Dichotomous yes/no and, if yes, frequency for two increments: 1–2 times and 3+ times. Activities listed include read to [him/her], taught letters, taught songs, told a story. (These measures were correlated with P19 and P20 and dropped from the logistic regression analyses.)

A separate set of questions are then asked regarding whether the parent had taken their child to a library, movie, or museum within the past month. These scales showed low interitem reliability and were not used in the analysis.

Parental Activities and Supervision

P22. About how many hours each day does [child] watch television shows or video tapes? Continuous variable [hours].

P23. Are there family rules for [child] about any of the following television-related activities? Two response categories: parents' rules about the days that the child can watch and the number of hours, were highly correlated ($r < .74$). These two items were combined into a single index.

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