Child Care Arrangements of Language-Minority Children: Care Provider's Language Use

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Review Process

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CHILD CARE ARRANGEMENTS OF LANGUAGE-MINORITY CHILDREN: CARE PROVIDER'S LANGUAGE USE

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Abstract

In the United States, child care arrangements serve increasingly linguistically diverse populations of children. However, little is known about patterns of childcare arrangements for language-minority children and the linguistic environment of child care arrangements. Using the Early Childhood Program Participation Survey of the 2001 National Household Education Surveys Program (ECPP-NHES, 2001), this report asks three research questions: (1) what are the patterns of child care arrangements for language-minority children?, (2) do child care arrangements differ by language use of the child?, and (3) what factors are associated with the child having a care provider who speaks a non-English language? The results show that after controlling for the characteristics of the child, children are less likely to be in nonparental care (i.e., center-based programs, and relative care or nonrelative care) when the child speaks a non-English language mostly. However, this association disappears when characteristics of parents and household are controlled. The results also suggest that language use of the child as well as parents are important factors associated with the care provider's language use. These findings may suggest that an additional context, the linguistic environment of child care arrangements, contribute to a child's non-English language use.

Introduction

In the United States, the number of preschool-age children who receive care from someone other than their parents has been increasing since the middle of the 20th century as the number of dual-earner families and one-parent families with working parents has increased (Hernandez, 1995). Moreover, the number of children attending early childhood programs, such as preschool, nursery school, and Head Start programs has been growing (Lamb, 1998). Such early childhood programs serve increasingly diverse populations of children with respect to economic resources, racial and ethnic backgrounds, family structure (Hernandez, 1995), and linguistic background.

As a result of the sustained and high levels of immigration, the number of non-English language speakers in the United States has increased dramatically since the

1980s. In 2000, 18% of the population aged 5 and older spoke a non-English language at home, a 47% increase from 1990 (U.S. Bureau of the Census, 1990; 2000). The number of children aged 5 to 17 who spoke a non-English language at home increased from 6.3 million in 1990 to 9.8 million in 2000, an increase of 55% over the decade (U.S. Bureau of the Census, 1990; 2000). This increase is reflected in the growth of reported public school enrollment of Limited English Proficient (LEP) students.[1] In the 2000-2001 school year, an estimated 4.6 million LEP students were enrolled in public schools (pre-kindergarten though Grade 12), which was 10% of the total school enrollment. The population of LEP students has grown by about 105% since the 1990-1991 school year, whereas the total enrollment has grown only by 12% (Kindler, 2002). However, little is known about patterns of child care arrangements for language-minority children and the linguistic environment of child care arrangements.

This report therefore examines the following three research questions. First, what are the patterns of child care arrangements for language-minority children? More specifically, what are the types of child care arrangements? How many hours per week did children spend in nonparental care? How prevalent is participation in Head Start compared to participation in other types of early childhood education programs? Second, do child care arrangements differ by language use of the child— non-English language mostly, non-English language and English equally, or English mostly? Third, what factors are associated with a child having a care provider who speaks a non-English language?

Past research found a positive association between bilingualism and cognitive performance (Hakuta, 1986), and between fluent bilingualism and family relations and self-esteem among children of immigrants (Portes & Hao, 2002). Because the preschool years are an important period for not only children's language and cognitive development but also for social and emotional development, it is important to understand the patterns of child care arrangements for language-minority children, and the linguistic environment of child care arrangement. Child care settings are where most children begin learning to interact with other children and adults other than their parents, and may provide the first exposure to English

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[1] In the 1999-2000 school year, states reported over 400 languages spoken by Limited English Proficient (LEP) students through the Survey of States' Limited English Proficient Students and Available Educational Programs and Services conducted by the U.S. Department of Education's Office for Bilingual Education and Minority Languages Affairs (OBEMLA) (Kindler, 2002).

for some language-minority children (August & Hakuta, 1997; Shonkoff & Phillips, 2000).

National Household Education Surveys Program

This report uses the public release data for the Early Childhood Program Participation Survey of the 2001 National Household Education Surveys Program (ECPP-NHES, 2001). In 1991, the National Center for Education Statistics (NCES) began NHES data collection, which was the first major survey that shifted data collection from school-based to household-based. One of the components of NHES, the Early Childhood Program Participation Survey (it was called Early Childhood Education in 1991) was repeated in 1995 and 2001, with a subset of questions also asked in 1999.

ECPP-NHES (2001) provides data on the nonparental care and educational program arrangements of preschool children, who were aged 0 to 6 and were not yet enrolled in kindergarten or grade school. The adult, 18 years and above, living in the household who knew the most about a child's care and education completed the interview. Extensive background information about a child and household/family members were also collected. In addition to the main focus of the report—child care arrangements—the analyses conducted in this report includes characteristics of the child (age, language spoken at home, nativity, race/ethnicity, sex), of the parents (language spoken at home, mother's employment status and educational attainment), of the family/household (family immigrant status, household income), and of the care provider (care provider's language use).

Nonparental care includes (1) relative care, which is care provided by a relative in the child's home or another home, (2) nonrelative care, which is care provided by a nonrelative in the child's home or another home, and (3) center-based programs including a day care center, preschool, prekindergarten, and (Early) Head Start program. While it is possible for a child to have multiple types of care arrangements, this report focuses on a primary child care arrangement. A primary child care arrangement was defined as the regular child care arrangement in which the child spent the most time per week (see technical notes for additional details).

The total unweighted sample size of ECPP-NHES (2001) is 6,749 children, aged 0 to 6. The language-related questions were not asked for children who were 0 or 1 years old, and the number of children aged 6 in the data was too small to be included in the analysis and are therefore omitted. Therefore, this report is based on

preschool children aged 2 to 5. In addition, the final sample only includes children who had a mother in the household since past research suggested that mother's characteristics, such as educational attainment, were found to be associated with the children's enrollment in a center-based program (e.g., Fuller, Holloway, & Liang, 1996; Hofferth, West, & Henke, 1994). The final unweighted sample size for this report is 4,171 children[2] and the weighted sample size is 11,770,785 children, unless otherwise stated.

Language-Minority Children

In this report, language-minority children are defined broadly as children who live in a household in which a non-English language is regularly spoken. Children are identified as language minorities using information about their own language use, as well the language(s) spoken by their parents. In ECPP-NHES (2001), the questionnaire included questions on language use of the child, mother, and father at home. The question regarding the child was, "What language does (CHILD) speak most at home?" (See the technical notes for the exact wording of questions regarding language spoken by mother and father.) The answers are categorized as the following for child, mother, and father: (1) English, (2) Spanish, (3) English and Spanish equally, (4) English and another language equally, (5) Child doesn't speak (not applicable for mother and father), and (6) Another language.

Thus, language-minority children include children who speak Spanish mostly, English and Spanish equally, English and another non-English language equally, or another non-English language mostly, and children who live with at least one parent who speaks Spanish mostly, English and Spanish equally, English and another non-English language equally, or another non-English language mostly whether or not children also speak a non-English language. Those who are not language-minority children are children who speak English mostly and whose parents also speak English mostly at home. From hereafter, these children are referred to as non-language-minority (non-LM) children.

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[2] Because the interest of this report is language-minority children defined by language use of the child, mother, and father, the final sample excluded 18 children who "do not speak." Eighty-six children who spent equal hours per week in two or more types of care are also excluded from the final sample, because the number of children was too small to be analyzed as one separate category of child care arrangement.

Patterns of Child Care Arrangements for Language-Minority Children

In 2001, 15% of preschool children were considered language-minority children (Table 1). More than half of foreign-born children (57%) were considered as language-minority, whereas 14% of native-born children were language-minority. Thus, foreign-born children were more likely to be language-minority children than native-born children. However, while nativity of a child is associated with whether a child is a language-minority child, 43% of foreign-born children were non-LM. Sixty percent of Hispanic children were language-minority children, whereas only 5% of non-Hispanic children were language-minority children. Children from immigrant families were more likely to be language-minority children than children from non-immigrant families, 67% and 2% respectively. Children who have a care provider who speaks a non-English language (86%) are more likely to be language-minority children than those who have a care provider who speaks English only (12%).

Types of Child Care Arrangements

Figure 1 shows the percentage of preschool children aged between 2 and 5 years by language use and primary child care arrangement in 2001. It indicates that types of child care arrangements differ between language-minority children and non-LM children. Language-minority children are less likely to be enrolled in a center-based program than non-LM children. About 28% of language-minority children enrolled in a center-based program compared to 43% of non-LM children. Furthermore, the percentage of language-minority children who were cared for only by parents (i.e., no nonparental care) is higher than that of non-LM children (46% and 29% respectively). Besides no nonparental care, for both language-minority children and non-LM children, center-based program is the most used child care arrangement (28% and 43% respectively), and nonrelative care is the least used child care arrangement (9% and 13% respectively).

Hours in Nonparental Care

Figure 2 shows the percentage of preschool children aged between 2 and 5 years in nonparental care by language use and number of hours per week in nonparental care in 2001. In general, the number of hours spent in nonparental care arrangements does not differ between language-minority children and non-LM children. However, non-LM children are slightly more likely to be in regular full-time nonparental care (35 or more hours per week) than language-minority children (48% and 38% respectively).

Types of Center-based Programs

Figure 3 shows the percentage of preschool children aged between 2 and 5 years whose primary child care arrangement is a center-based program by type of program (Head Start or non-Head Start) and language use. While 12% of non-LM children attended a Head-Start program, 32% of language-minority children attended a Head Start program. Head Start is a government sponsored preschool program serving children in low-income families. Because of the eligibility rule, low-income and low educational attainment of the mother were found to be associated with the likelihood of a child's primary child care arrangement being a Head Start program versus a non-Head Start program (Hofferth, Shauman, Henke, & West, 1998). The higher percentage of language-minority children attending a Head Start program may reflect the greater concentration of poverty in families with language-minority children. Other possible explanations are availability and preference. Parents of language-minority children may have limited types of center-based programs available or they may be more likely to choose a Head Start program over the other types of center-based programs than parents of non-LM children.

Do Child Care Arrangements Differ by Language Use of the Child?

In order to assess whether the types of child care arrangements differ by language use of the child, language-minority children are disaggregated by their language use: (1) children speaking English and non-English language equally, (2) children speaking a non-English language mostly, and (3) children speaking English mostly.[3] This allows for examination of the association between child's language use and child care arrangements in more detail. For example, this report can assess whether child care arrangements differ by children speaking a non-English language mostly and children speaking English and non-English language equally regardless of parents' language use.

Descriptive Results: Factors Associated with Child Care Arrangements

This section examines factors associated with child care arrangements. Table 2 shows the percentage of children with selected characteristics by type of child care

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[3] Children speaking English mostly differs from "non-LM children" mentioned in the previous sections. While "non-LM children" includes those who speak English mostly and parents who also speak English mostly, "children speaking English mostly" includes those who speak English mostly regardless of parents' language use.

arrangement. Here, the relative care and nonrelative care are grouped as one type of child care arrangement due to the small sample size.

Child's Language Use. The results from Table 2 show that children who speak a non-English language mostly (24%) are less likely to be enrolled in a center-based program than children speaking English mostly (43%). A difference is not detected between children speaking English mostly and those who speak English and a non-English language equally. Children speaking English mostly are less likely to be cared for only by their parents (29%) than children who speak a non-English language mostly (51%). However, again there is no difference between children speaking English mostly and children who speak English and a non-English language equally. Therefore, child care arrangement types differ particularly between children who speak a non-English language mostly and children who speak English mostly.

Age. Age is a significant factor associated with child care arrangements. Children aged 4 and 5 years old (56% and 66% respectively) are more likely to be enrolled in a center-based program than children aged 2 and 3 years old (23% and 37% respectively). Furthermore, children aged 4 and 5 years old (21% and 17% respectively) are less likely to be cared for only by their parents compared to children aged 2 years old (42%).

Sex. Males (38%) are less likely to be enrolled in a center-based program than females (43%). This finding is consistent with past research that suggested that females are more likely to be in nonparental and nonrelative care than males (Hiedemann, Joesch, & Rose, 2004).

Race/Ethnicity. Hispanic children (26%) are less likely to be enrolled in a center-based program than White (non-Hispanic) children (42%), Black (non-Hispanic) children (48%), and all other race (non-Hispanic) children (42%). Hispanic children are more likely to be cared for only by their parents compared to non-Hispanic White children and non-Hispanic Black children (45%, 31%, and 21% respectively).

Parents' Language Use. Children who have at least one parent who speaks a non-English language are more likely to be cared for only by their parents than those who have parent(s) speaking English mostly (51% and 30% respectively).

Mother's Employment Status. Children who live with employed mothers are more likely to be in center-based programs (44%), and relative or nonrelative care

(40%) than children who live with mothers who are not employed (35% and 9%). Moreover, children who live with mothers who are not employed are more likely to be cared for only by their parents (56%) compared to children who live with employed mothers (16%).

Mother's Educational Attainment. Past research suggested that more educated mothers are more likely to use center-based programs than less educated mothers (Hofferth & Wissoker, 1992; Brandon, 2004). This report also shows that children who have more educated mothers, college graduate (52%) and graduate or professional school (54%), were more likely to be enrolled in a center-based program than children who have less educated mothers**.**

Household Income. Children from households with incomes more than $60,000 are more likely to be enrolled in center-based programs (54%) compared to children from households with incomes less than $60,000 (the percentages ranges from 33 to 36).

Multivariate Results: Factors Associated with Child Care Arrangement

The multivariate analyses are presented in this section using characteristics of the child, parents, and household. A multinomial logit model (MLM) is used to determine the independent association of each characteristic with types of child care arrangement while other characteristics are held constant. The reference category for the model is "no nonparental care," and comparisons are made with "center-based program" and "relative or nonrelative care."

Table 3 shows the results of the multinomial logit model, including the odds ratio of a child being in a "center-based program" versus "no nonparental care," and "relative or nonrelative care" versus "no nonparental care." Children who speak a non-English language mostly have less likelihood of being enrolled in a center-based program as opposed to being cared for only by their parents compared to children who speak English mostly.[4] The odds of being enrolled in a center-based program versus no nonparental care for children who speak a non-English language mostly is

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[4] A separate multinomial logit model was conducted (not included in the report) with a dichotomous variable coded 1 = language-minority children and 0 = non-LM children (based on the definition stated at the beginning of this report), which replaced two of the independent variables, child's language spoken and parent's language spoken. The results did not differ from those of table 3. Language-minority children are less likely to be enrolled in center-based programs, and are more likely to have parental care only than non-LM children. However, this association was no longer found when characteristics of child, parents, and household are controlled as table 3 showed.

about one-half (odds ratio of 0.48) that of children speaking English mostly. Moreover, the odds of being in a relative or nonrelative care versus no nonparental care for children who speak a non-English language mostly is also about one-half (odds ratio of 0.53) that of children speaking English mostly (Table 3, model 1). Therefore, after controlling for characteristics of the child (i.e., child's age, sex, and race/ethnicity), the language use of children—specifically for non-English language speaking children—is associated with the types of child care arrangement a child has. However, this association does not hold when characteristics of parents and household (i.e., parents' language spoken, mother's educational attainment and employment status, and household income) are also included in the model (Table 3, model 2).

Thus, the odds of being in a center-based program, as opposed to being cared for only by their parents, are explained by the child's age, sex, and race/ethnicity, mother's educational attainment and employment status, and household income. Table 3, models 1 and 2 shows that a child's age is an important factor associated with the patterns of child care arrangement. For instance, each additional year of age increases the odds of being enrolled in a center-based program versus no nonparental care by 14% (Table 3, model 2). The odds of being enrolled in a center-based program for non-Hispanic Black children are twice (odds ratio of 1.99) that of non-Hispanic White children, with other characteristics being equal (Table 3, model 2).

The results show that children who have employed mothers and children who have mothers with higher educational attainment are more likely to be in nonparental care (i.e., center-based programs, and relative care or nonrelative care). The odds of being enrolled in a center-based program versus no nonparental care for children having employed mothers are 15.16 times that of children having mothers who are not employed (Table 3, model 2). Similarly, the odds of being in relative or nonrelative care versus no nonparental care for children having employed mothers are 3.76 times that of children having mothers who are not employed (Table 3, model 2).

What Factors are Associated with Child Having a
Care Provider who Speaks a Non-English Language?

In this section, logistic regression analysis is used to predict the probability of a child having a care provider who speaks a non-English language (Table 4). The

dependent variable is a dichotomous variable with the outcome categories of 1 (care provider speaks a non-English language) and 0 (care provider speaks English). The outcome category 1, care provider speaks a non-English language, includes a care provider for a child's primary child care arrangement who speaks Spanish or another non-English language mostly with a child. Because the interest of this section is nonparental care provider's language use, the analysis of this section only includes children who have nonparental child care arrangements. The unweighted sample size is 2,968 children, and the weighted sample size is 8,015,417 children.

The results show that the language spoken by both the child and parents is positively associated with the child having a care provider who speaks a non-English language. The odds of having a non-English language speaking care provider for a child who speaks a non-English language mostly is 10.78 times that of a child who speaks English mostly (Table 4, model 1). Similarly, the odds for a child who speaks English and a non-English language equally is 5.30 times that of a child who speaks English mostly. This association might exist because the child is placed in a care arrangement where language use of the child and care provider matches. For example, parents may choose a care provider who speaks a non-English language given that the child already speaks a non-English language at home.

Moreover, when a child has at least one parent who speaks a non-English language, the odds of having a non-English language speaking care provider is 4.24 times that of a child who does not have non-English language speaking parents (Table 4, model 1). Furthermore, a child from an immigrant family is more likely to have a non-English language speaking care provider than a child from a non-immigrant family. The association between language use of parents and the care provider might exist because non-English language speaking parents' lack of access to a care provider who speaks English due to a lack of English ability, or they might feel comfortable placing a child in a care arrangement where the non-English language that the parents speak is used. As Wierzbicki (2004) found, immigrants have fewer strong social ties outside of the household compared to the native-born, thus access to an English speaking care provider may be limited. Another possible explanation is that parents specifically choose a non-English language speaking care provider because they want their child to maintain or learn a non-English language. More than half of parents who have children who speak a non-English language mostly thought a care provider who speaks a child's native language was very important in selecting a care arrangement for the child (Table 5).

Table 4, model 2 shows that child who has relative care as a primary child care arrangement are more likely to have a non-English language speaking care provider compared to those who have either nonrelative care or center-based programs as a primary child care arrangement. This finding might suggest that there are fewer nonrelative care and center-based programs where a care provider speaks a non-English language.

Summary and Discussion

Using the Early Childhood Program Participation Survey of the 2001 National Household Education Surveys Program (ECPP-NHES, 2001), this report examined the patterns of child care arrangements for language-minority children and the linguistic environment of child care arrangements. The descriptive statistics show some differences in patterns of child care arrangements by language use of children. Language-minority children are less likely to be in a center-based program, and more likely to be cared for only by their parents, compared to non-LM children. Moreover, the types of child care arrangements differ, particularly between children who speak a non-English language mostly and children who speak English mostly. The number of hours spent in nonparental care arrangements differed slightly: more non-LM children are in regular full-time nonparental care (35 or more hours per week) than language-minority children. Among children whose primary child care arrangement is a center-based program, language-minority children are more likely to attend a Head Start program than non-LM children.

The results of the multivariate analysis also show that after controlling for characteristics of the child, children are less likely to be in nonparental care (i.e., center-based programs, and relative care or nonrelative care) when a child speaks a non-English language mostly. However, this association disappears when characteristics of the parents and household are also controlled. Thus, the difference in types of child care arrangements a child has are explained by the child's age, sex, and race/ethnicity, mother's educational attainment and employment status, and household income.

This report also finds that when children speak a non-English language, they are more likely to have a nonparental care provider who speaks a non-English language. Moreover, when at least one parent speaks a non-English language, children are more likely to have a non-English language speaking care provider. These results suggest that language use of the child as well as the parents is an

important factor associated with the care provider's language use. This finding has an important implication in language maintenance among children of immigrants and descendants of immigrants. This is because past research found that the linguistic characteristics of family and household members are associated with children of the first, second, and third or later generations' use of a non-English language (Alba, Logan, Lutz, & Stults, 2002; Ishizawa, 2004; Stevens, 1985), which suggests the importance of the relationship between language use in the household and an individual's non-English language use. This report's findings may indicate that an additional context, the linguistic environment of child care arrangements, contributes to a child's non-English language use.

Moreover, the results show that a child who has relative care as a primary child care arrangement is more likely to have a non-English language speaking care provider than those in center-based programs or nonrelative care. Perhaps care by a relative is the most available child care arrangement where a non-English language is used during the care. While more than two-thirds of parents of a child who "speaks a non-English language mostly" placed some importance in having a care provider who speaks a non-English language, future research may investigate the preference, availability, and access or lack of access of child care arrangements for families with language-minority children.

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Appendix A

Technical Notes

Language Use Questions

Child
What language does (CHILD) speak most at home?
- English
- Spanish
- English and Spanish equally
- English and another language equally
- Child doesn't speak
- Another language (specify)

Mother and Father
What language (do you/does (CHILD)'s (mother/stepmother/foster mother) (father/stepfather/foster father)) speak most at home now?
- English
- Spanish
- English and Spanish equally
- English and another language equally
- Another language (specify)

Relative care provider
What language does (CHILD)'s (RELATIVE) speak most when caring for (him/her)?
- English
- Spanish
- Another language (specify)

Nonrelative care provider
What language does (CHILD)'s care provider speak most when caring for (CHILD)?
- English
- Spanish
- Another language (specify)

Center-based program care provider
What language does (CHILD)'s main care provider or teacher at that program speak most with (him/her)?
- English
- Spanish
- Another language (specify)

Language Factor in Parental Choice Question

I am going to read some things that people look for in selecting child care arrangements or early childhood programs for their children. For each one, please tell me if you think it is very important, somewhat important, or not too important in selecting a care arrangement for (CHILD). How about a caregiver who speaks (CHILD)'s native language?

Definition of Terms

Primary child care arrangement. A primary child care arrangement was defined as the regular child care arrangement in which the child spent the most time per week. When a child is placed at a child care arrangement which takes place less than every week but at least once each month, the number of hours each month for a particular type of care arrangement were divided by four (weeks) in order to attain the average number of hours per week. A child that is placed at a child care arrangement less often than once a month is included in no nonparental care.

Child's race/ethnicity. Hispanic is used to refer to Hispanic or Latino. Hispanic can be of any race. "White," "Black," and "other races" categories are non-Hispanic. Black is used to refer to Black or African American.

Child's nativity. "Native-born children" refers to those who were born in the United States or in United States territories. "Foreign-born children" refers to those who were born in a country other than the United States.

Child's language spoken at home. The first category, English and non-English equally, includes children who speak "English and Spanish equally" and "English and another language equally." The second category, non-English only, includes children who speak "Spanish" and "another language." The third category, English only, includes children who speak "English."

Parents' language spoken at home. When either mother or father or both speak Spanish, English and Spanish equally, English and another language equally, or another language, it is categorized as "at least one parent speaks a non-English language."

Mother's employment status. The category, employed, includes mothers who work full-time (working 35 hours or more per week) and mothers who work part-time (working less than 35 hours per week). The other category, not employed, includes both mothers who are looking for work and mothers not in the labor force.

Mother's educational attainment. The five categories for the educational attainment variable are (1) less than high school diploma, (2) high school graduate or equivalent, (3) vocational/technical education after high school or some college, (4) college graduate, and (5) graduate or professional school.

Household income. The household income includes income of all household members over the year, including salaries or other earnings, interest, and retirement.

Family immigrant status. Immigrant family refers to a family with at least one parent who was born in a country other than the United States.

Care provider's language use. When a care provider for a child's primary child care arrangement speaks Spanish or another non-English language, it is categorized as "non-English language."

Methods of Analysis

Multinomial logit model (MLM). When the dependent variable's categories are discrete (categories can only take finite number of values within a certain range), nominal (categories describes name of category), and unordered (categories have no natural ordering), MLM is appropriate to use (Liao, 1999). The MLM assumes that the data satisfy the independence of irrelevant alternatives (IIA), which means that the odds of any two categories are not influenced by any other categories (Liao, 1999). To test for IIA, the Hausman test (Hausman & McFadden, 1984) is used. The data used in this report satisfies IIA.

Logistic regression model. Logistic regression assumes that there is a curvilinear relationship between the dependent variable and given independent variables, while the ordinary least squares (OLS) regression model assumes a straight linear relationship and a predicted probability that can exceed 1 or fall below 0. The general principal of logistic regression is that the same change in the value of the independent variable has less impact on the predicted probability near the ceiling (1) or floor (0), and that larger changes in the value of the independent variable are needed to have the same impact on the predicted probability near the ceiling or floor (Pampel, 2000).

Survey Methodology

The 2001 National Household Education Surveys Program (NHES, 2001) is a random-digit-dial (RDD) telephone survey covering the 50 states and the District of

Columbia. The telephone interviews were conducted using computer-assisted telephone interviewing (CATI) technology from January through mid-April 2001.

After households were randomly sampled the screening interview was completed by a household member aged over 18, and was used (1) to determine whether a sampled telephone number belongs to a residence (and not to a business), (2) to determine whether there was a child aged between 0 and 6 years who was not enrolled in kindergarten or grade school for the Early Childhood Program Participation Survey of the 2001 National Household Education Surveys Program (ECPP-NHES, 2001), (3) to select the appropriate respondent for ECPP interview (an adult living in the household who was the most knowledgeable about the child's care and education), and (4) to collect household members' information.

The NHES (2001) interviews were conducted in English and Spanish. The questionnaires were translated into Spanish, and trained bilingual interviewers completed the interview using CATI in Spanish. Interviews were not conducted for households composed of members who speak a language other than English or Spanish. Therefore, households in which no one spoke English or Spanish well enough to complete an interview were not included. This may bias the results. For more details of NHES (2001) methodology, see Nolin, Montaquila, Nicchitta, Hagedorn, and Chapman (2004).

Response Rates

The 2001 National Household Education Surveys Program (NHES: 2001) completed screening interviews with 48,385 households. The response rate for the screener was 69.2%. For the ECPP Survey, 6,749 interviews were completed for a unit response rate of 86.6%. Thus, the overall response rate for the Parent Interview was 59.9% (the product of the Screener response rate and the ECPP unit response rate).

The item response rate was very high for NHES (2001). The median item response rate for items included in ECPP interview was 99.3%. A hot-deck procedure was used to impute any missing responses.

Sampling Errors/Weighting

The data were weighted using the full sample weight (FEWT). Weighting takes into consideration the differential probabilities of selection of the respondents and to reduce potential bias attributable to nonresponse and differential coverage of

subpopulations. In order to take into account the complex sample design of NHES (2001), Taylor series approximation was used to compute the standard errors in this report as generated by the statistical program STATA. The standard error indicates the variability of a sample estimate due to sampling, and can be used as a measure of the precision expected from a particular sample. The probability that a complete census count would differ from the sample estimate by less than 1 standard error is about 68%, 1.65 standard error is about 90%, and 1.96 standard errors is about 95%.

The standard error included in the tables can be used to calculate the confidence interval. For example, an estimated 30% of females are placed in nonparental care arrangement (Table 2) with an estimated standard error of 1.3. Thus, the estimated 95% confidence interval for this statistic is approximately 27.5 to 32.5%.

Statistical Tests

All comparisons that have been discussed in the text of this report have been tested for statistical significance. The statistical comparisons in this report were statistically significant at the 0.05 level and were based on the t statistic. However, not all significant differences are included in the text.

In order to decrease the probability of making a Type I error (i.e., the decision to reject the null hypothesis when in fact it is true), the Bonferroni adjustment was used for multiple comparisons. This method adjusts the significance level based on the total number of comparisons made with a variable.

Appendix B

Figures
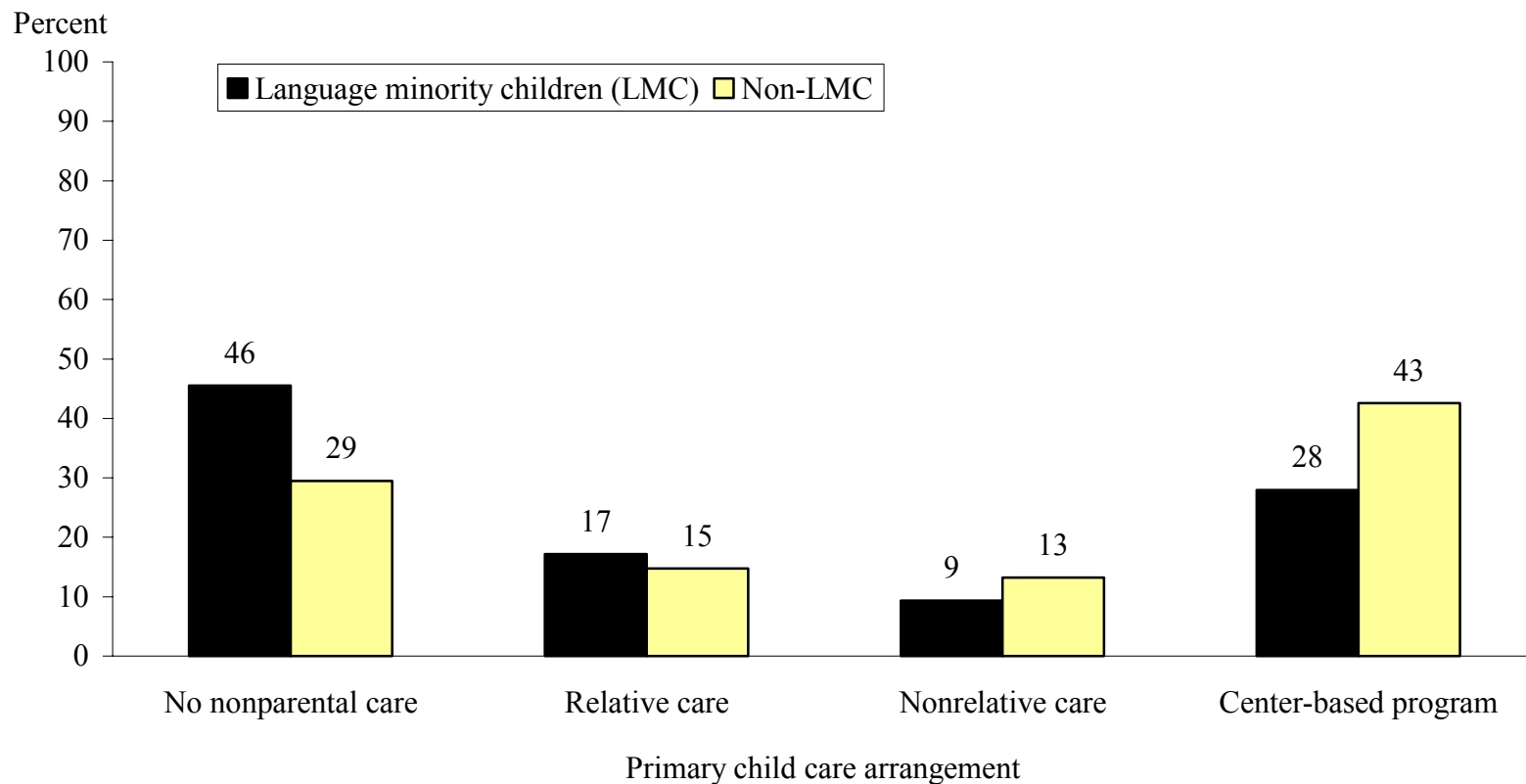
Percent

Figure 1. Percentage of preschool children aged between 2 and 5 by language use and primary child care arrangement, 2001.

Note. A child's 'primary child care arrangement' was defined as the regular child care arrangement in which the child spent the most time per week.

Source. U.S. Department of Education, National Center for Education Statistics, 2001 National Household Education Survey, Early Childhood Program Participation Survey (ECPP-NHES: 2001).
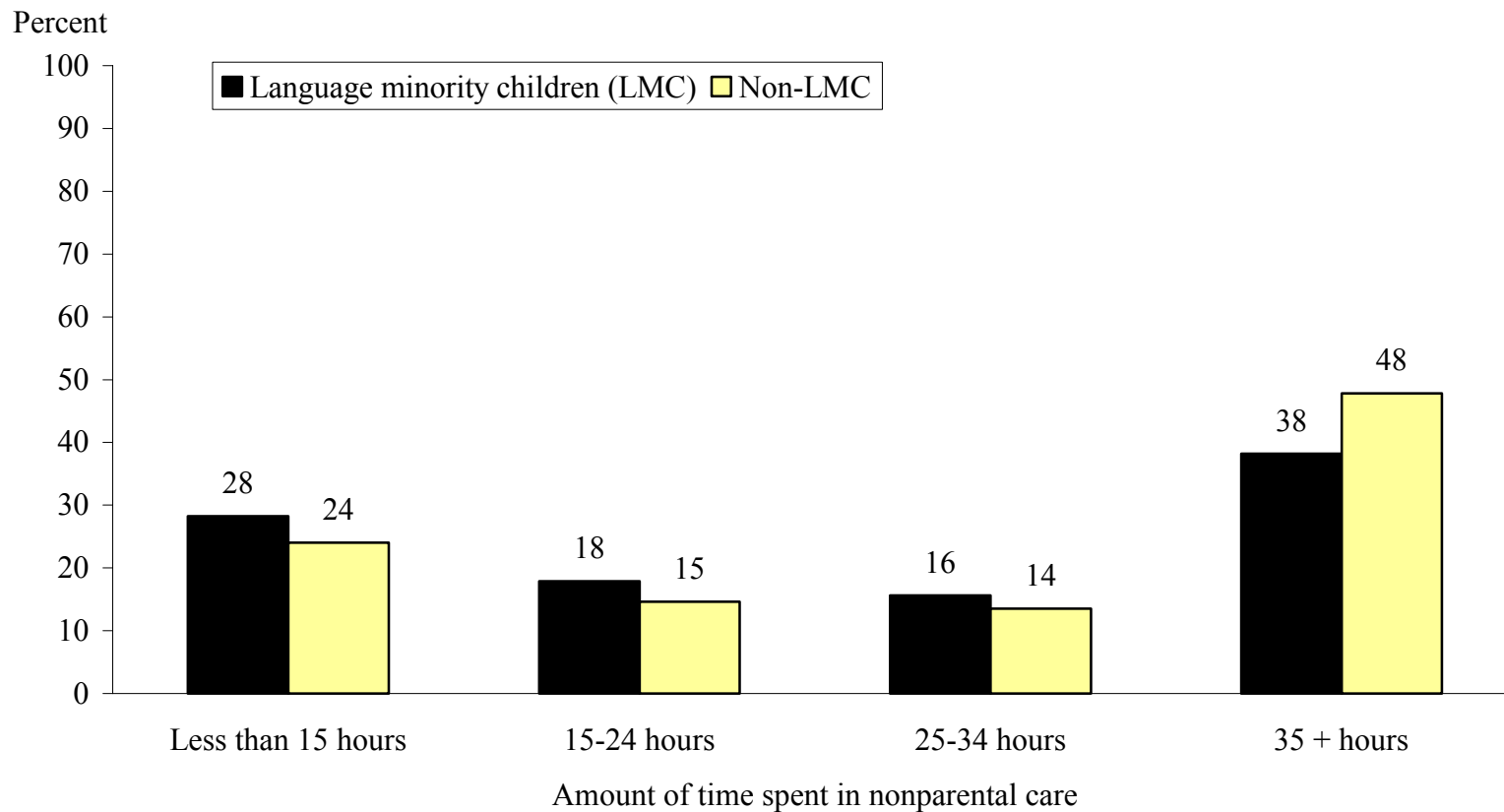
Percent

Figure 2. Percentage of preschool children aged between 2 and 5 in nonparental care by language use and number of hours per week in nonparental care, 2001.

Source: U.S. Department of Education, National Center for Education Statistics, 2001 National Household Education Survey, Early Childhood Program Participation Survey (ECPP-NHES: 2001).
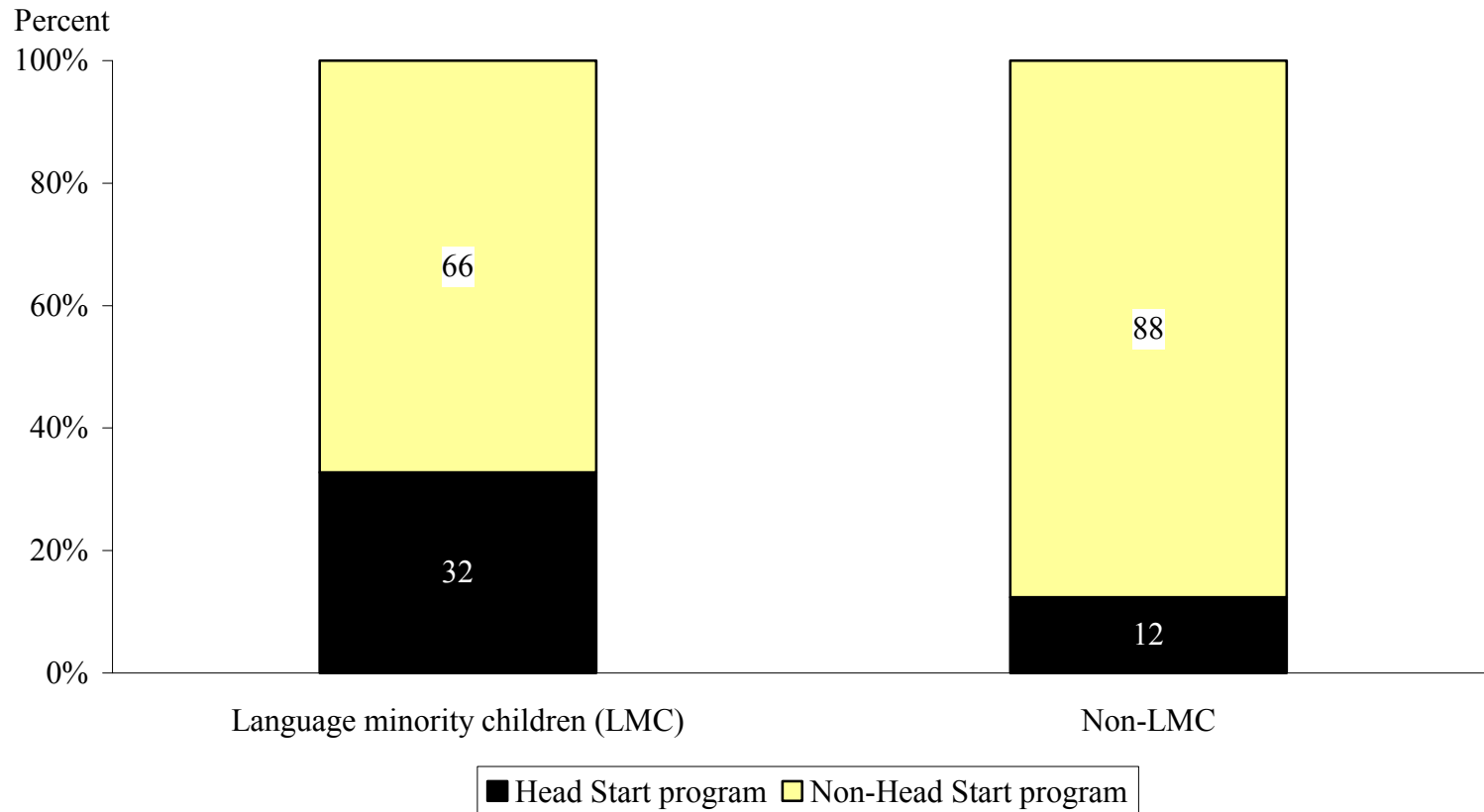
Percent

Figure 3. Percentage of preschool children aged between 2 and 5 whose primary child care arrangement is center-based program by type of program and language use: 2001.

Note. A child's 'primary child care arrangement' was defined as the regular child care arrangement in which the child spent the most time per week. The type of center-based program (Head Start or non-Head Start) was asked for children who attend a center-based program at least once a week. Thus, the percentage does not sum to 100 for language-minority children, since there were two children who attended a center-based program less than every week but at least once each month.

Source. U.S. Department of Education, National Center for Education Statistics, 2001 National Household Education Survey, Early Childhood Program Participation Survey (ECPP-NHES: 2001).

Appendix C

Tables

Table 1

Percentage of language-minority (LM) children and non-LM children aged between 2 and 5 by characteristics of child, household, and care provider, 2001.

Characteristics	Number of children (thousands)	Language-minority children		Non-LM children	
		Percent	s.e.	Percent	s.e.
Total	**11,771**	**15**	**0.6**	**85**	**0.6**
Child's age					
2	3,694	15	1.1	85	1.1
3	3,607	16	1.2	84	1.2
4	3,647	14	1.0	86	1.0
5	824	13	2.0	87	2.0
Child's nativity					
Foreign-born	308	57	5.4	43	5.4
Native-born	11,463	14	0.6	86	0.6
Child's Hispanic origin					
Hispanic	2,128	60	1.9	40	1.9
Non-Hispanic	9,643	5	0.5	95	0.5
Family immigrant status					
Immigrant family	2,317	67	2.1	33	2.1
Non-immigrant family	9,454	2	0.3	98	0.3
Care provider's language use					
Non-English language	546	86	2.4	14	2.4
English	11,225	12	0.6	88	0.6

Note. s.e. is standard error. Percentages are rounded and may not sum to 100. Child's Hispanic origin variable is used in this table instead of a race/ethnicity variable due to the small number of cases (less than 30) for some categories. However, a race/ethnicity variable is used where there are enough cases in the tables that follow.

Source. U.S. Department of Education, National Center for Education Statistics, 2001 National Household Education Survey, Early Childhood Program Participation Survey (ECPP-NHES: 2001).

Table 2.

Percentage of preschool children aged between 2 and 5 by primary child care arrangement, and characteristics of child, parents, and household, 2001.

Characteristics	Number of children (thousands)	Center-based programs		Relative or nonrelative care		No nonparental care	
		Percent	s.e.	Percent	s.e.	Percent	s.e.
Total	11,771	40	0.9	28	0.9	32	0.9
Child's age							
2	3,694	23	1.4	35	1.6	42	1.8
3	3,607	37	1.5	28	1.5	35	1.6
4	3,647	56	1.6	23	1.4	21	1.3
5	824	66	3.1	17	2.3	17	2.5
Child's sex							
Male	5,955	38	1.2	28	1.2	34	1.3
Female	5,816	43	1.3	27	1.1	30	1.3
Child's race/ethnicity							
White, non-Hispanic	7,275	42	1.2	27	1.1	31	1.2
Black, non-Hispanic	1,671	48	2.8	30	2.9	21	2.5
Hispanic	2,128	26	1.5	29	1.7	45	1.9
All other races, non-Hispanic	697	42	3.5	30	3.4	27	3.4
Child's language spoken at home							
English and non-English language equally	369	33	4.3	26	4.5	41	4.8
Non-English language mostly	1,136	24	2.3	25	2.3	51	2.8
English mostly	10,265	43	1.0	28	0.9	29	1.0

Table 2 (Continued)

Characteristics	Number of children (thousands)	Center-based programs		Relative or nonrelative care		No nonparental care	
		Percent	s.e.	Percent	s.e.	Percent	s.e.
Parents' language spoken at home							
At least one parent speaks a non-English language	1,246	22	2.0	27	2.3	51	2.6
Parent(s) speak English mostly	10,525	43	1.0	28	0.9	30	1.0
Mother's employment status							
Employed	7,141	44	1.2	40	1.2	16	1.0
Not employed	4,630	35	1.4	9	0.8	56	1.5
Mother's educational attainment							
Less than high school	1,383	25	2.4	23	2.5	53	3.0
High school graduate	3,704	34	1.5	30	1.6	37	1.7
Vocational/technical education	3,509	42	1.7	29	1.6	29	1.6
College graduate	2,036	52	2.1	24	1.8	23	1.9
Graduate or professional school	1,140	54	2.8	30	2.6	16	2.2
Household income							
$20,000 or less	2,937	33	1.9	28	2.1	39	2.2
$20,001 - $40,000	2,859	35	1.6	27	1.6	38	1.7
$40,001 - $60,000	2,338	36	1.8	32	1.8	33	1.9
More than $60,000	3,638	54	1.6	25	1.3	21	1.5

Note. s.e. is standard error. Percentages are rounded and may not sum to 100. A child's 'primary child care arrangement' was defined as the regular child care arrangement in which the child spent the most time per week.

Source. U.S. Department of Education, National Center for Education Statistics, 2001 National Household Education Survey, Early Childhood Program Participation Survey (ECPP-NHES: 2001).

Table 3

Multinomial logit model: Characteristics of child, parents, and household predicting primary child care arrangement.

	Model 1						Model 2					
	Center-based programs vs. No nonparental care			Relative or nonrelative care vs. No nonparental care			Center-based programs vs. No nonparental care			Relative or nonrelative care vs. No nonparental care		
	B	s.e.	Odds ratio	*B*	s.e.	Odds ratio	*B*	s.e.	Odds ratio	B	s.e.	Odds ratio
Child												
Age (in years)	0.75***	0.05	2.12	0.11*	0.05	1.12	0.13***	0.06	1.14	0.78*	0.06	2.19
Sex	-0.27**	0.09	0.76	-0.08	0.10	0.92	-0.02*	0.11	0.98	-0.21	0.10	0.81
Language spoken												
English and non-English language equally	-0.20	0.25	0.82	-0.36	0.27	0.70	-0.02	0.33	0.98	0.20	0.30	1.22
Non-English language mostly	-0.74***	0.19	0.48	-0.63***	0.17	0.53	-0.08	0.31	0.92	-0.03	0.30	0.97
Race/ethnicity												
Black, non-Hispanic	0.57**	0.16	1.76	0.50	0.19	1.65	0.69***	0.22	1.99	1.00**	0.18	2.71
Hispanic	-0.58***	0.14	0.56	-0.02*	0.14	0.98	0.21	0.18	1.23	-0.14	0.16	0.87
All other races, non-Hispanic	0.37	0.20	1.44	0.40	0.21	1.50	0.24	0.23	1.27	0.25	0.22	1.28
Parents												
Language spoken							0.21	0.34	1.23	-0.28	0.28	0.76

Table 3 (Continued)

	Model 1						Model 2					
	Center-based programs vs. No nonparental care			Relative or nonrelative care vs. No nonparental care			Center-based programs vs. No nonparental care			Relative or nonrelative care vs. No nonparental care		
	B	s.e.	Odds ratio	B	s.e.	Odds ratio	B	s.e.	Odds ratio	B	s.e.	Odds ratio
Mother												
Employment status							2.72***	0.13	15.16	1.32***	0.11	3.76
Educational attainment												
High school graduate							0.26	0.23	1.29	0.22	0.19	1.24
Vocational/technical education							0.26*	0.24	1.30	0.51	0.21	1.67
College graduate							0.53***	0.27	1.69	1.06*	0.23	2.89
Graduate or professional school							0.86***	0.30	2.36	1.29**	0.27	3.61
Household												
Household income							0.07***	0.06	1.08	0.22	0.06	1.24
Constant	-1.92***	0.18	0.15	-0.42	0.18	0.66	-2.82***	0.35	0.06	-3.94***	0.31	0.02

N = 11,770,785 (weighted).

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

Note. *B* is coefficient. s.e. is standard error. A child's 'primary child care arrangement' was defined as the regular child care arrangement in which the child spent the most time per week.

Reference category for child's sex is male. Reference category for child's language spoken is English mostly. Reference category for child's race/ethnicity is White, non-Hispanic. Reference category for parents' language spoken is at least one parent speaks a non-English language. Reference category for mother's employment status is employed. Reference category for mother's educational attainment is less than high school.

Source. U.S. Department of Education, National Center for Education Statistics, 2001 National Household Education Survey, Early Childhood Program Participation Survey (ECPP-NHES: 2001).

Table 4

Logistic regression coefficients of care provider's non-English language use: Speak a non-English language (1) versus speak English (0)

	Model 1			Model 2		
	B	s.e.	Odds ratio	B	s.e.	Odds ratio
Child's Language spoken						
English and non-English language equally	1.67***	0.52	5.30	2.32***	0.49	10.20
Non-English language mostly	2.38***	0.51	10.78	3.29***	0.55	26.77
Parents' language spoken						
At least one parent speaks a non-English language	1.45***	0.37	4.24	1.53***	0.43	4.60
Family immigrant status						
Immigrant family	1.45***	0.37	4.24	1.58***	0.42	4.88
Primary nonparental child care arrangement						
Nonrelative care				-1.08***	0.29	0.34
Center-based programs				-3.64***	0.44	0.03
Constant	-4.29***	0.16	0.01	-3.09***	0.19	0.05

N = 8,015,417 (weighted).

*** *p* < .001.

Note. B is coefficient. s.e. is standard error. Sample only includes children who have a nonparental child care arrangement as a primary child care arrangement.

Reference category for child's language spoken is English mostly.

Reference category for primary nonparental child care arrangement is relative care.

Source. U.S. Department of Education, National Center for Education Statistics, 2001 National Household Education Survey, Early Childhood Program Participation Survey (ECPP-NHES: 2001).

Table 5

Percentage of children who speak a non-English language mostly by importance of care provider speaking a child's native language in parental choice of care arrangement: 2001

	Number of children (thousands)	Percent	s.e.
Very important	465	54	3.0
Somewhat important	187	22	2.5
Not too important	210	24	2.6

N = 862,104 (weighted).

Note. s.e. is standard error. The question was only asked to parents who have a child speaking a non-English language mostly (see technical notes for the wording of question).

Source. U.S. Department of Education, National Center for Education Statistics, 2001 National Household Education Survey, Early Childhood Program Participation Survey (ECPP-NHES: 2001).