Family Choices of Child Care in Los Angeles County: Does Child's Health Matter?

INTRODUCTION

Over the past few decades, women's participation in the labor force has increased dramatically. As a result, the number of children who have employed mothers has also increased (Hofferth, 1996). Women's employment, combined with changing family structure and parents' desires to provide their children with educational and social experience in a structured setting has led to a substantial increase in the demand for and use of non-parental child care.

Researchers have sought to understand various factors that influence parents' choice of child care for their children. Sociodemographic characteristics such as mother's education, employment status, race/ethnicity, child's age, family structure, and household income as well as characteristics of child care itself have been shown to be important factors in the child care decision-making process (Hofferth, 1996; NICHD, 1997; Peth-Pierce, 1998; Uttal, 1999).

One area that has been largely neglected in child care research is the impact of child's health on child care choices. While a large body of literature exists on how child care affects child's health and social and cognitive development (Alexander, Zinzeleta, Mackenzie, Vernon, & Markowitz, 1990; Belsky, 1990; Fleming, Cochi, Hightower, & Broome, 1987; Haskins & Kotch, 1986; Lu, Samuels, Shi, Baker, Glover, & Sanders, 2004; Presser, 1988), little is known about the directionality from existing child health to child care choice. Proper care for children with health problems is essential for fostering healthy child development and allowing parents to work and support the family. Recent initiatives for universal preschool and improvement of child care quality in California require further empirical evidence on families and their child care needs in order to most effectively prioritize target groups and allocate funds.

The potential two-way directionality between child health and child care choices poses problems of endogeneity when attempting to isolate the effects of child health on child care choices. Children's health status could be a determining factor of child care setting, quality, or amount of time spent in child care rather than the outcome of child care choices. In order to examine the effect of child's health on child care choices, we use data from the Los Angeles and Families and Neighborhoods Survey (L.A.FANS) on child's health at birth and current child care choices. Using information on child's health at birth instead of current health status allows us to make stronger causal inferences on the impact of child's health on child care choices because current child care choices are unlikely to affect child's health at birth.

BACKGROUND

Decisions concerning child care choice are influenced by preexisting maternal, child, and familial demographic characteristics, including mother's employment status, education, race/ethnicity, marital status, family income, nativity status, child's age, child's health, household composition, and availability of child care resources (Hofferth, 1996; NICHD, 1997; Peth-Pierce, 1998; Uttal, 1999).

A large body of literature examines how site of child care affects young children's health. These studies are largely based on the epidemiological argument that increased person-to-person contact elevates the risks of acquiring a communicable disease. Center or day care is such a setting where children have potentially greater exposure to communicable diseases. Studies have demonstrated a higher rate of acute infectious diseases such as respiratory conditions, diarrhea, hepatitis A, and meningitis for children attending day care in comparison to those being cared at home, even after controlling for

sociodemographic characteristics (Alexander, Zinzeleta, & Markowitz, 1990; Fleming, Cochi, Hightower, & Broome, 1987; Haskins & Kotch, 1986; Lu, Samuels, Shi, Baker, Glover, &Sanders, 2003; Presser, 1988) While these studies establish an association between child care setting and child health, whether the association is a result of selection or causation remains unclear.

While most studies conducted to date have focused on the causal direction from child care to child health, there has been little research done on how child's health affects choice of child care. Families with young children who have special health care needs face numerous obstacles in finding affordable and quality child care. Parents of children with health problems may be particularly selective about type, quality, location, and amount of child care used. Lack of child care resources for children in poorer health may force parents to use whatever child care is available or to forego work and stay at home to care for children themselves. These problems are compounded for low-income families because their children are more likely to have health problems and disabilities than children from higher-income families. Moreover, low-income families are more likely to live in neighborhoods that have limited child care resources, and specifically a lack of adequate child care for children with health problems (Neas & Mezy, 2003).

First 5 LA has launched three child care related programs to address the needs of families in Los Angeles County: Community-Based Child Care Quality Enhancement Program (CCI); Enhancing Child Care and Early Learning Opportunities Grant (CCII); and Universal Access to Preschool (UPK) (http://www.prop10.org/ourprojects). These large-scale efforts to improve child care and early childhood education in Los Angeles need to be informed by research on current patterns of child care and how they vary among different social groups. This paper will specifically focus on how child's health, as measured by birth weight, gestational age, and subjective evaluation, affects parents' decisions on child care, providing insight into the needs and preferences of families with children who have health problems. Such information is crucial for addressing child care policy issues that revolve around differing demands for child care, quality of child care, and allocation of funds.

METHODS

Data

L.A.FANS is specifically designed to study family choices about their neighborhoods and neighborhood and family effects on children's development. Based on a sample of 65 neighborhoods (defined as census tracts) selected from 1,652 census tracts in Los Angeles County, children were oversampled relative to their proportion in the population. After adjusting for oversampling, the L.A.FANS sample is representative of the Los Angeles County population.

Households were randomly sampled within each of the 65 neighborhoods. For each household, one adult was randomly selected by computer to provide basic social and demographic information on household members. One child in between the ages of 0 to 17 years and living in the household was also randomly selected by computer to participate in the study. If the selected child had siblings under age 18 living in the household, one sibling was also randomly sampled. Each child's primary caregiver (generally his/her mother) was interviewed. Because primary caregivers were almost always mothers, they are referred to as mothers throughout this paper.

This study is based only on households with children 0-5 years old who were not yet enrolled in school. A total of 1,720 out of 3, 010 households in L.A.FANS included at least one child in the 0-5 year old age range. Data were collected for 1,086 children ages 0 to 5, of which 714 (66%) were main sampled

child respondents and 372 (34%) were sampled siblings. Response rates were 89% for mothers and 87% for children. This study is based on 887 children 0 to 5 years old who were not yet enrolled in school.

Measures

Child care choice. The main outcome variables are regular use of child care and primary type of child care. Child care in this study is defined as any form of regular non-parental care (aside from occasional baby-sitters). Regular use of child care was assessed by asking mothers whether or not the child was in non-parental child care during the four weeks before the interview. Mothers were further asked to identify the child care arrangement used most frequently. Non-parental child care is divided into three main categories: 1) relative care, 2) non-relative care, and 3) center-based care. These categories are based on those used in previous studies on child care (NICHD 1997; Hofferth and Wissoker, 1992; Gordon & Chase-Lansdale, 2001). We combine non-relative care in the child's home with non-relative care in the provider's home, and we exclude parental care. Relative care excludes care by a relative other than the child's parents, but includes all other family members. Non-relative care is care provided by a regular babysitter, day care provider, maid, nanny, au pair, neighbor, or friend, and could take place in the child's or the provider's home. Center-based care includes day care centers, nursery schools, preschools, and Head Start programs.

Child health at birth. The major explanatory variables were at-birth health conditions including gestational age, subjective evaluation, and birth weight. Because current child care choices are unlikely to affect child's health at birth, we use information on at-birth health conditions instead of current health status to allow for stronger causal inferences on the impact of child's health on child care choices. Gestational age was determined according to whether the baby was born at least 2 weeks before the due date (coded as 1) or on or after the due date (coded as 0). Subjective evaluation of birth condition was based on mothers' response to the question: "Compared to other babies in general, would you say that your child's health at birth was better than other babies?" Responses of worse or same health were coded as 1 and those in better health were coded as 0. Birth weight was obtained by mother's report and categorized into two levels: low birth weight (< 2,500 grams) was coded as 1 and normal (2,500+ grams) coded as 0.

Sociodemographic background variables. Background variables included in the preliminary analyses consisted of: 1) maternal demographic and socioeconomic backgrounds such as mother's age, employment status, race/ethnicity, marital status, and nativity; and, 2) child characteristics such as kid's age and sex. Subsequent analyses will take into account other sociodemographic variables such as family income, household composition, child care availability, service planning area, and neighborhood poverty level.

Data Analyses

We use STATA version 8.2 to conduct analyses on how child's health at birth, as measured by gestational age, subjective evaluation and low birth weight, affects parents' decisions on child care choice (care usage and type of care), adjusting for sociodemographic background information. First, descriptive analyses were conducted to characterize the correlates of child care choice and child health at birth in the sample. Bivariate analyses with chi-square tests for categorical variables of child health were used to examine the distribution across various child care choices and statistical significance. In multivariate analyses, we also explored whether individual sociodemographic variables could affect at-birth health condition. We conducted a binomial logistic regression for use of care and a multinomial logistic regression for type of care to evaluate the effect of child health at birth on child care choices while adjusting for the individual background characteristics.

We plan to conduct multilevel logit models to explore our research question at different levels of hierarchy (Hox, 2002). In our analysis we will distinguish binary choices in child care. In the case of use of child care, the choices correspond to utilize a parental care versus *any* form of non-parental care. For the type of care the choices are distinguished by parental/relative and non-relative/center care. We will also group the explanatory variables into two levels, micro and macro levels. The macro-level variables measured at 65 census tracts are contextual factors such as availability of child care, poverty level of neighborhood, and service planning area. The micro-level variables are individual and family factors (although variables at the family level could also be treated as another contextual level because individuals are nested within families). Specifically, the micro-level variables include maternal characteristics (education, employment status, race/ethnicity, marital status and nativity), child characteristics (age, gender, and at-birth health condition) and family background (family income and household composition).

We will begin with an empty two-level logit model that is the simplest possible random effect model examining whether there are systematic differences between the macro-level units (Snijders & Bosker, 1999). This model, also called the intercept-only model, contains no explanatory variables and provides evidence for the existence of heterogeneity in the likelihood of child care choice between macro-level units. In order to examine the relative importance of the contextual-level and individual-level explanatory variables we will subsequently add these two-level factors into models. Next, we will use the intercepts and slopes-as-outcomes model (Bryk & Raudenbush, 1992) to estimate whether there is an interaction of macro-level explanatory variables with micro-level explanatory factors. Lastly, because many of the community, family and individual independent variables are correlated, multicollinearity is a serious potential concern. We will evaluate this by examining zero-order correlations between dependent and independent variables and omitting variables from models to examine the impact of elimination of correlated independent variables.

PRELIMINARY FINDINGS

According to the data analysis plan, we first examined the simple independent effects of child health on child care choice. The categorical dependent variables were analyzed using a contingency table and the χ^2 test for independence. We conducted multivariate regression models that allowed us to examine the effect of each at-birth health variable on child care choice while controlling for the effects of other sociodemographic variables.

Regular use of non-parental care

Overall 38 percent of these young children have used non-parental care. Usage is considerably more prevalent among those born at least two weeks earlier than their due date ($\chi^2 = 8.64$; df = 1; p = 0.06), evaluated in better health conditions at birth by their mothers ($\chi^2 = 8.83$; df = 1; p=0.03) and having birth weight lower than 2,500 grams ($\chi^2 = 7.43$; df = 1; p=0.04). However, the associations between use of child care and health conditions at birth no longer remain significant after adjusting for background measures. Although the coefficient for subjective evaluation remains unchanged, the association between subjective health evaluation and care use becomes marginally significant (p=0.09). The results indicate that the predicted odds of regularly using child care are about 57% higher for mothers who evaluate their newborn baby in a better health condition in comparison to mothers who evaluate their babies in same or worse condition, adjusting for other sociodemographic variables.

Primary type of child care used

Most children (60%) receive parental care. Center (15%) and relative care (15%) are the next most common and about 10% receive care from non-relatives. Type of child care used is significantly associated with birth weight ($\chi^2 = 22.72$; df = 3; p=0.01), but we do not find a significant association with gestational age and subjective evaluation. Mothers with babies of low birth weight are more likely to choose non-relative (OR= 3.49; p=0.02) or center care (OR=2.18; p=0.09) than to care for their child themselves in comparison to mothers with babies of normal weight. The significant association between type of care and birth weight becomes marginal after controlling for individual sociodemographic measures. In comparison to using parental care the predicted odds of low-birth weight children using non-relative care are 3.46 times (p=0.09) the odds of children whose birth weight was higher than 2,500 grams. Subjective evaluation also becomes a marginally significant predictor for using center care. The predicted odds of using center care are about 70% higher (p=0.06) than using parental care for mothers who evaluate their newborn baby in better health condition in comparison to mothers who evaluate their babies in same or worse condition, adjusting for other sociodemographic variables.

Preliminary results suggest that child's health at birth, particularly subjective evaluation and birth weight, have a marginally significant effect on type of child care used and regular use of care (subjective evaluation only). These preliminary findings warrant further investigation and models incorporating other sociodemographic variables.

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