FAMILY STRUCTURE, SOCIOECONOMIC STATUS AND CHILD OUTCOMES IN BRAZIL: HEALTH, EDUCATION AND LABOR IN THE CHILDHOOD

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Brazil is one of the countries with the greatest inequality in the world. The richest 10 percent of the population concentrate the highest proportion of resources (47% of total income), and the poorest 40 percent receive the lowest proportion (8%). This high inequality in Brazil encompasses several dimensions. With regards to fertility, survey data in 1999 reveal that the average family in the top 10 percent of the distribution has 0.9 children, while the typical family from the poorest 30 percent has 3.1. So, the poor not only get lower incomes than the rich, but they share this income among more individuals, resulting in greater income per capita inequalities. What makes this fact more interesting is that total fertility rates in Brazil have declined dramatically since the 1960s, but the reductions have not reached all sectors of the population and have not reached all regions in the same way. Other characteristics that make the households in the top 10 percent of the distribution different from the poorest 30 percent are education, health and labor force participation. One interesting aspect about these characteristics is that these are strongly interrelated decisions made within the family (and not only at the individual level). For instance, the amount of education invested in each child is a function of the number of children that the household has to educate. One complication is that the causality between the variables is obviously very difficult to disentangle.

The purpose of this paper is to shed some light on the large differences between poor and rich Brazilian households regarding children's outcomes. The hypothesis is that there are strong gradients, so that people in the bottom quantiles report worse outcomes for children than do people in the top quantiles. Moreover, in the bottom quantiles of income, positive outcomes decline more rapidly with age. So, another hypothesis is that the relationship between household income and children's outcomes becomes more pronounced as children grow older. These facts motivate a study of the role of family structure in children's outcomes. The central argument is that there is a strong relationship between these outcomes and measures of family structure and socioeconomic status, including income and employment of their members. There are multiple causal links between these variables; income and education affect health, and health affects the ability to be educated and the ability to work. There are also third factors that affect the variables, and that contribute to the correlation between them. It is difficult to determine whether the relationship exists primarily because health and education affects socioeconomic status, whether socioeconomic status has a direct impact on health and education, or whether both are affected by some third factor; in other words, it is difficult to find a single correct answer to this question of causality. In this sense, this paper describes correlations between children's outcomes and family structure, aiming to clarify the question: "what is the effect of family structure on outcomes for children?". Since it means the effect of one endogenous variable on another with unobserved variables/processes influencing both, correlations are made, not causation, controlling for other variables (mother's education, labor force participation and occupation, income, race, gender, number of siblings, birth order, etc.).

OVERVIEW OF DATA AND METHODS: EXAMPLE WITH HEALTH VARIABLES

Data come from the 1998 PNAD (Pesquisa Nacional por Amostra de Domicílios – Brazilian Household Sample Survey), which presents an additional survey on health issues. This is a large nationally representative sample of households, whose members are either interviewed directly, or in the case of children, by proxy. There are 345,000 people in the sample. Demographic, education, labor force, income and health information is collected for parents and children. The health related questions

include reported health status, chronic conditions (asthma, heart disease, etc.), whether the individual was hospitalized in the past year and whether he or she is limited in the types of activity.

It is likely that all self-reported measures of health status suffer from some biases, and some of these biases may vary with socioeconomic status. For instance, mothers who are in poor health themselves may be more likely to report that their child is in ill health; children of higher SES may be more likely to be diagnosed given that they have chronic conditions; mothers may vary in their assessment of whether a child has activity limitations or is need of doctor visits or even hospitalization. In this sense, I do not choose a best measure, but examine the full range of available measures.

The main variables used in the analysis are: age, household income, female household head, two-parent family, parents' education, household size, mother age at birth, poor health, chronic conditions, activity limitation, doctor's visit, hospital, etc.

The health status of children is assumed to evolve over time: children are born with an initial health stock, H_0. They receive shocks to their health in the form of chronic conditions, diseases requiring hospitalization, or other shocks. SES contributes to the ability of a family to both detect and treat a chronic condition in the short run. In a simple model, two things differentiate the health of low-SES children from the health of high-SES children: (1) low-SES children may not deal with bad health shocks as effectively as high-SES children in the short-run (information problems and resource constraints which cause delays in treatment or less effective treatment); (2) low-SES children may receive more health shocks than high SES children, due to differences in lifestyle and/or environmental factors such as poor housing quality, lack of preventive care, inadequate nutrition, etc. Predictions emerge from this highly simplified model: (a) there will be a positive relationship between SES and health; (b) the relationship between SES and health will grow stronger as children age, due to the higher arrival rate of chronic conditions for low-SES children. To test the implications of the model, it is verified the distribution of the various health measures by age and whether income is above or below the low income cutoff . In order to investigate these relationships in a multivariate context, estimates from regression models using the cross-sectional data that take the following form:

$$\text{health}_i = \alpha + \beta \text{ inc . age}_i + \gamma \ln(\text{inc})_i + \pi \text{edu}_i + \text{age}_i + \delta X_i + \varepsilon_i$$

where health is a measure of child health, inc.age is the interaction between the log of family income and age, ln(inc) is log family income, edu is a set of dummies for mother's education, age is a complete set of age dummies, vector X includes the log of family size, a dummy variable for the sex of the child, a dummy variable for having two parents, the mother's age at birth, etc., variables intended to capture other characteristics of the family which could affect child health; the subscript i denotes the individual child. Previous work suggests that this estimation should yield evidence of a health-SES gradient that increases with child age; that is, coefficients on income, maternal education, and the interaction terms should all be positive (when the dependent variable is poor health, they are negative). This model is estimated using several different measures of child health, allowing to observe the age pattern of child health status for various conditions.

Expected results in health are: (1) cross-sectional relationship between health, income (or maternal education) and age arises primarily because low income children are more likely to be subject to health shocks; (2) low-SES children are more likely to suffer negative health shocks than high-SES children.