

The Effects of “Color” in Individual and Family Levels on Child Mortality

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This paper examines racial inequality in child mortality in São Paulo, Brazil. In particular, I examine the ways in which racial identity corresponds to socioeconomic status (SES) and family structure characteristics in differential temporal contexts. Child health is a sensitive indicator of disparity in level of mothers' quality of life and health reflecting the accumulated impact of deprivation throughout mothers' life on their children. Child mortality variations relate to a variety of social opportunities that are central to human development. Impressive scientific and systematic improvements in health have greatly contributed to reducing infant/child mortality for most of the middle and less developed nations during the past decades, however, there is still significant difference in child mortality associated with racial background. Race continues to affect child mortality as a social stratifying agent (National Research Council 1989, Hummer 1993, Mullings et al. 2001), which is said to emerge from the African slave and this destructive exploitation and reasoning has served as fertile ground for continued inequalities in resources, status, power, and health between racial group (Hummer 1993, Sen 1999).

Race, Class, and Child Mortality in Brazil

Although the dominant ideology within the country that Brazil is free of prejudice, skin color is highly correlated with socioeconomic standing in Brazil (Wood and Lovell 1992). Brazilian society is characterized by extreme social inequality: economically with the highest 10% accounting for 51% of the total income (World Bank 1995). Due to the political-economic process of development from the slave society, including the crucial deficiencies in basic education, disparities in terms of social opportunities have widened over the last three decades, contributing to a greater gap between rich and poor (Sen 1999).

The racial scheme in Brazil¹ is not easily characterized by discrete categories. Instead, it resembles a gradation of color from White to Black with many shades of brown in between. There exists the mutability of individuals' racial identification depending on income, education, and related insignias of social rank (Carvalho et al. 2003). This creates the difficulties in distinction between black and mixed population and in social definitions of skin color and researchers studying racial inequality in Brazil have used the white versus Afro-Brazilian (black/brown) dichotomization, although it is said to be inappropriate considering Brazilian culture, history, and racial attitude (Carvalho et al. 2003). Furthermore, the Asian (yellow) population has contributed to making the Brazilian color-class situation even more complicated.

The majority of Asian indentured immigrants in Brazil came from Japan as a means to ease the labor shortage of much needed cheap manual labor in São Paulo's growing agricultural sector (Suzuki 1981). Therefore, most Japanese immigrants began their life in Brazil at the lowest and least privileged status of agricultural resident farm laborers. Most Japanese immigrants however, rose to middle class in both rural and urban areas by the mid 1950s (Wood and Jirimutu, 1995) by purchasing land to become owner-farmers (Lesser, 1999). This rapid movement from wage-labor to entrepreneurship may have been facilitated by the fact that Japanese immigrants arrived as family units, which provided the labor and the emotional support to overcome the obstacles of settling in a new country and becoming economically competitive (Wood and Jirimutu 1995). A question spontaneously arises; if discrimination matters, why does the Asian population have lower mortality than the white population of which researchers have yet to try to answer through previous research. This is a fundamental reason why this paper delves into the relatively unexplored variables in the study of the influence of race on child mortality, namely,

¹ Lovell and Wood (1998) note that the Census Bureau in Brazil uses the term skin color and the terminology does not make pretence that the census data reflect biological definitions of race; thus they and other researchers dealing with Brazilian society have avoided using the term 'race' in favor of the more accurate notion of skin color for the most part in their literature. In this paper, the term race will be used for the almost all parts, following its usage in prior research on child health, family, and regional differentials.

family/household structure, which is expected to close the gap in our understanding created by the unexplained residuals.

While the relative importance of a broad range of variables in their effect on child survival has been recognized, there remains a racial variation that is unexplained by those variables (Albrecht, et al. 1994). One of the important variables, which can be expected to play a key role to solve the parts of the intricate puzzle, may be family structure. The potential importance of family structure in affecting child survival has been evident (Albrecht, et al. 1994) and the perceptions toward the family formation and the role of family/household structure are largely influenced by racial, ethnic and socio-cultural factors. The family and household structure generally relate to the economic levels and the family support and as already mentioned above, may have been an important factor for the economical success of most Japanese immigrants.

Influence of Family/Household Structure on Child Well-Being and Mortality

Child mortality is often regarded as reflections of the parent's health of their quality of life due to children's utter dependency on their parents (Wood and Lovell 1992) and their family/household members (e.g., Watkins 1987). The previous research indicates that children born to black women (e.g., Hummer et al. 1993, Lovell and Wood 1998), to unmarried and single women (e.g., Eberstein, et al. 1990), among a large number of siblings (e.g., Sastry 1998), to family/household which does not have extended household members for assisting childbearing and providing financial help (St. Clair, et al. 1989), have substantially elevated risks of child death. These findings are generally consistent in pointing out the potential liabilities of non-traditional family structure, such as single, informal union, and female headed family, where the family system may not function well for providing appropriate supports to mothers and their childbearing.

The family is considered as the minimum social support system which is provided within the family on a daily basis². Family obligations are also associated with financial support and are the main source of provisions for gratuitous supports. Family support system can be considered as the smallest unit of local-level "social capital." Social capital within the family, Coleman states, "gives the child access to the adult's human capital depends both on the physical presence of adults in the family and on the attention given by the adults to the child" (1988, p. S111). Thus, family condition may affect resources available for children, influencing their growth. (Bumpass 1990). While some argue that a major flow of social and economic change should permeate an individuals' decision-making and perceptions of family (Bumpass 1990, Goldscheider 1995), the racial, ethnic, and cultural factors variably have been shown to have the major influence on family formation and perceptions of family functions (Das Gupta 1997, Reher 1998).

The effect of family formation on child health and well-being might be different when the family/household structure is considered in the adequate child care. Cramer indicates that; "marital status may not be an independent risk factor. ---. In general, it is not known which social factor or combination of factors is causally responsible for the observed group differences" (1897, p.299). Children born, for example, to unmarried women may be at risk for mortality as a result of inadequate familial resources rather than marital status per se (Eberstein et al. 1990). Therefore, marital status and family structure, both of which provide or restrict available family support, are substitutive to the level of mother's adequate child care.

While the importance of family formation and structure in the child health and birth outcome, the absence of a more traditional family structure has resulted in children being adversely affected, financially, physically, and emotionally (e.g., Desai 1992). As the proportion of traditional family formations has been shown to decline due to changes in gender role, living-circumstances by urbanization, aging, and racial/ethnic composition, the family ties have also undergone transfigurations by these changes or through family formation changes. Although, examinations of marital status characteristics and household structures have respectively shown a concentration of child deaths among

² With this context, this paper regards family composition as the members of a household.

certain race groups and among certain marital status and household structures, the relationships among race and marital status/family structure remain ambiguous in the previous studies on child well-being and child survival.

Social Capital

The concept of social capital has been used in the health field primarily as a possible explanation for findings with respect to inequalities in health and for the relationship between income inequality and health (Kawachi et al. 1999, Almeida-Filho et al. 2003, Pearce and Davey-Smith 2003). Since, levels of income inequality, social capital, and health may all be consequences of more micro-level social and economic processes that influence health across the life course (Pearce and Davey-Smith 2000), investments in social capital and trust networks influences child survival provides a mechanism and linkage between health outcomes and individual behavioral norms and between health outcomes and individual perceptions related to racial/ethnic identity (Astone 1991, Arieira and Haynes 2001).

Although, in family-household life today, we can purchase help and assistance to compensate for the lack of social support networks, family/household members still do play a major role in providing help for immediate emergencies and emotional assistance with personal and family problems (Höllinger and Haller 1990). Thus, social capital as support network is particularly important in Latin America where high mortality is influenced by significant perceptions about the risk of death communicated by families that live in close proximity. Considering the race-class inequality in Brazil, which has been characterized as having the worlds' highest levels of income inequality, the social capital may serve as a mediator for reducing the gap in child health and child mortality inequality between the poor racial group and the affluent racial group.

Data and Method

This paper uses the demographic and socioeconomic information derived from Censo 1980, 1991, and 2000. In 2000, the state of São Paulo had 3,444,794 people in 2000, and nearly 10 million population within its metropolitan area making it one of the largest metropolises in the developing countries. Recent demographic changes have been accompanied by social improvements. Since this study is particularly interested in child mortality differences among racial groups, including the relatively small number of the Asian population in the entire Brazil (0.46%), São Paulo is selected as the area of focus where most Japanese – the majority of Asian population in Brazil³ – have resided.

In the analysis, only women aged 20-34 years will be included. This is because mother's age was used to control for the duration of exposure to the risk of death, hence, child deaths among older women correspond to births occurring in the more distant past from which the value of money and other social indicators have changed over time (Wood and Lovell 1990, Sastry 2002). The most important assumption behind these estimates is that fertility and child mortality levels have been constant in the 'recent past' (Sastry 2002); therefore, restricting the analysis to women aged 20-34 can minimize possible problems.

Since the dependent variables represent the Number of Child Deaths of individual women, I employ a model appropriate for count data. A useful first approximation is the Poisson model which assumes that the mean and the variance of the outcome variable are equal. Often, this assumption is violated by over-dispersion in the data (i.e., mean/variance inequality). To control for over-dispersion, I estimate a negative binomial model which includes a random disturbance term. Furthermore, three census data composes more than 90% of women who never lost a child and therefore, the zero-inflated negative binomial model provides a better fit than the negative binomial model or Poisson models.

The empirical research will use explanatory variables; demographic, family/household structure, and socioeconomic indicators. Demographic variables are race and place of residence – rural/urban dichotomy. There will be seven proxy variables of family/household structure. Relation to household is

³ Although there are no accurate data on the ethnic composition of the Asian population in Brazil, both historical records and recent estimates indicate that the majority of Asians in Brazil are of Japanese descent (Hasenbalg 1985, Andrews 1991, Wood and Lovell 1992, Dwyer and Lovell 1990).

dichotomous variable; women are divided into household head or the wife of household head. Family type has two categories - nuclear and generational. Generational family type can be assumed to provide a greater support in ways of knowledge, time-producing, and emotional for prenatal care and child bearing. In the variable of marital status, women are divided into four categories; married (lawfully and religiously), religiously married, informal union, and unmarried. As possible available physical and financial help quantitatively, number of adult female in household, number of adult male in household, and number of adults in household as a whole will be used. The number of siblings is used as the available resource which each child can share within household.

I will use the variables of marital status, relation of household head, number of female family members, number of male family members, number of adult family members, number of siblings, job situation (if the mother is the only person in the household who have income) for indicating family/household structure and help availability for child bearing. The differential between household income and individual income will be used for creating the new variable indicating the financial support within the household.

Expected Results

I expect that the family/household structure proxy has an impact on the relationship among race, socioeconomic level, and child mortality. Children born to non-whites, to unmarried and single women, among a large number of siblings, and to family/households lack familial support and resources. Family/household is the minimum support system of the individual's social network and is the counterpart of the social capital at the community-level. Social capital is tested as the extension or expansion of the effect of the individual's social network on the relationships between race and child mortality. Social capital explains the family and community quality/quantity, the regional proximity in socioeconomic status, and creation of associations and networks among community members in obtaining necessary supports for childbearing. It may compensate the risks of child loss held within the single parent and informal households; therefore, the influences of race and SES on child mortality are reduced when proxy indicators of family/household structure are introduced as controls. I also expect that the family/household structure may improve the explanatory power of the model from the set of race and SES, and child mortality.

The Asian population's relatively successful social mobility has been considered as a product of the family support and they have a lower child mortality comparing the other racial groups, which indicates that family support as the minimum form of social capital may work in reducing the risk of child loss. I assume that proxy indicators of family/household structure have a greater effect in reducing child mortality among non-Asian population than Asian population after controlling for SES. The family formation and structure have changed over time and the traditional family type and family/household formation is expected to have greater social capital for providing better child care; therefore, the non-traditional family-type (nuclear) and non-traditional family/household formation (female headed, informal union) are associated with higher child mortality after controlling for race and SES and the effects of family-type and family/household structure on child mortality are greater in 1980 than 1991 and 2000 after controlling for race and SES.