



The impact of a Caribbean home-visiting child development program on cognitive skills



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ABSTRACT

This paper provides a short-term impact evaluation of a home-visiting Early Child Development (ECD) program in the Caribbean aimed at vulnerable children from birth to three years. The analysis is based on a quasi-experimental research design including approximately four hundred children in treatment and comparable control communities. The differences-in-differences methodology estimates intention-to-treat effects. One year after implementation, we find no significant effects on the cognitive development of the average child, but pronounced differences by birth cohort. The program has significantly improved Fine Motor Skills and Visual Reception scores, related to early reading and writing abilities, of the youngest children aged below 18 months at program start. There is no program impact on the older cohort, whose cognitive development appears to be more strongly correlated with center-based ECD services. Language development has not improved for either cohort. The findings suggest that an early window of opportunities may exist for home-based programs.

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1. Introduction

A child's experiences in the first years of life lay the basis for outcomes in adolescence and adulthood (Grantham-McGregor et al., 2007; Heckman, 2006; Shonk-off & Phillips, 2000; Young, 2002). Young children who lack adequate nutrition, early cognitive stimulation, or emotional bonding may suffer developmental delays that will be more difficult to overcome as the years progress. Especially children from disadvantaged households, such as poor or lowly educated families, run the risk of falling behind their more fortunate counterparts at a young age. This might result in an ever-widening gap between poor and non-poor children.

To prevent the perpetuation of this 'intergenerational cycle of poverty', early intervention programs have been set up all over the world to reach the most vulnerable children. However, rigorous evaluations of Early Childhood Development (ECD) programs in developing countries are limited, in particular of home-based interventions.² This paper provides an impact evaluation of a Caribbean home-visiting program aimed at disadvantaged children between birth and three years of age. The paper estimates the short-term program impact on cognitive child development one year after implementation.

Quantitative evaluations of home-based interventions in Latin America and the Caribbean have been published for Jamaica (Powell, Baker-Henningham, Walker, Gernay, & Grantham-McGregor, 2004; Walker, Chang, Powell, & Grantham-McGregor, 2005) and Bolivia (Super, Guillermo

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² Engle et al. (2011) and Nores and Barnett (2010) review impact evaluations of ECD programs in developing countries. Schady (2006) provides a detailed overview of the Latin American and Caribbean evidence.

Herrera, & Mora, 1990). These studies focus specifically on undernourished children that were selected into the sample based on anthropometric indicators of stunting or general malnutrition. They find significant short-term effects of early stimulation on the overall cognitive development of children and on eye–hand coordination, but not on loco-motor development, i.e. children's increased mastery of mobility such as crawling, running, and jumping. Impact on vocabulary and speech is inconclusive. Sweet and Appelbaum (2004) conduct a meta-analysis of 60 impact studies of home-based programs in the United States. They report a significant but small average effect on cognitive development. The authors comment that the small size of the benefits may not outweigh the costs of the interventions, although impact estimates may vary across subgroups of children.

This study evaluates the Roving Caregivers Program (RCP), a program that is widely implemented throughout the Caribbean. To our knowledge, this is one of only two existing impact evaluations of home-based interventions in the region that target the general low-income population instead of undernourished children. Powell (2004) reports on the randomized evaluation of a similar program in Jamaica.

The evaluation is set up as a longitudinal, quasi-experimental study that follows almost four hundred children in St Lucia over time from the baseline survey in 2006 to the follow-up survey in 2008. The children were aged between birth and 24 months at the start of the study. Half of them lived in communities where RCP was introduced after the baseline. The other children lived in comparable communities that did not receive the intervention.

To measure program impact, the econometric analysis uses a differences-in-differences methodology with multivariate child fixed-effect regressions. The evaluation is based on an intention-to-treat approach. It focuses on a comparison of all eligible children in the intervention communities with similar children in the non-intervention communities. The analysis is complemented with a more detailed investigation of child outcomes in relation to home-based versus center-based care.

Child development cannot be understood in isolation from its cultural context (Shonkoff & Phillips, 2000). Therefore the next section will start with a description of early childhood experiences and parenting practices in the Caribbean. It also describes the characteristics of RCP. Section 3 discusses the research design with a focus on the comparability of the treatment and the matched control group. It discusses response rates as well as the psychological assessment tool used to measure cognitive development. The econometric strategy is explained in Section 4. Section 5 shows enrollment rates in RCP and discusses targeting effectiveness. Impact results are given in Section 6. The final section concludes.

2. The Roving Caregivers Program in St Lucia

2.1. Early childhood and parenting practices in the Caribbean

St Lucia is an island in the Eastern Caribbean with a population of 172,000 individuals. One third of the population is aged less than eighteen years, and 8.7% are

under five.³ As elsewhere in the region, many St Lucian families can be characterized as matrifocal households: female-headed family units centered on living arrangements between grandmother, mother and children without resident spouse. Males are often physically absent or play a marginal role only (Barrow, 2003). Their role is to be the financial provider, whether living in the household or not, as long as they are the boyfriend of a female household member or the father of a child in the household. However, many unwed, teenaged mothers are left to provide for their children without support from the father (Augustin, 2004).

At the start of the study in 2006, 28.8% of the St Lucian population was living below the national poverty line of US\$ 158.74 per month.⁴ Young children were disproportionately represented among the poor. Inadequate parenting practices are symptomatic in part of poverty, lack of education and environmental factors (Williams & Brown, 2005). Nonetheless, socio-economic characteristics are not the sole determinants of a child's development. The experiences of young children also depend to a large extent on common conceptualizations of childhood and parenting, i.e. on cultural aspects, which shape the interaction patterns between parent and child.

Home-visiting programs such as RCP aim to stimulate parenting practices that enhance children's development. The sociological and anthropological literature emphasizes some salient features of Caribbean childhood that are relevant in this respect (Barrow, 2003; Roopnarine, 2005; Williams & Brown, 2005; Williams, Brown, & Roopnarine, 2006). Young Caribbean children receive a lot of affection. However, there is also a strong need among parents to feel in control over their children. Ideally, children should be obedient and compliant. Children's curiosity and creativity are not encouraged. This may stem in part from the fact that many parents do not see play as a learning activity. As a result, homes often lack play materials. In general, little two-way verbal communication takes place between adults and young children. The lack of stimulating interaction patterns between caregivers and children substantially reduces the opportunities for children's reasoning and language development. Books are absent in many households.

Another risk factor commonly found to affect healthy child development in the Caribbean is parental stress caused by poor health, depression, isolation or limited spousal support (Samms-Vaughan, 2004). Parental stress is often related to difficulties in making ends meet. The practice of 'child-shifting' between relatives may cause its own problems for children's development (Barrow, 2003; Roopnarine, 2005). Such practices are often due to a parent's migration in search of employment.

2.2. Center-based ECD interventions in St Lucia

Early childhood services in the Caribbean mostly take the form of center-based facilities such as daycare centers

³ "At a Glance: Saint Lucia Statistics", Unicef, 2009. http://www.unicef.org/infobycountry/stlucia_statistics.html.

⁴ "The Assessment of Poverty in St Lucia, Volume I", Caribbean Development Bank, 2006.

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