

# Factors conveying resilience in the context of urban poverty: The case of orphans and vulnerable children in the informal settlements of Nairobi, Kenya

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## Introduction

One of the many crises caused by the soaring rates of HIV and AIDS prevalence in sub-Saharan Africa in the last decade is a sharp rise in the number of orphans and other vulnerable children (OVC), as a result of the current high proportion of adults already living with HIV/AIDS and the continuing difficulties in expanding access to life-prolonging antiretroviral treatment (UNAIDS/UNICEF/USAID, 2004; Bicego et al., 2002). By the end of 1999, 13.2 million children had been orphaned worldwide by AIDS, and 90% of them were in Africa (UNAIDS/WHO, 2000).

In Kenya, approximately 1.7 million out of an estimated total of 15 million children have lost one or both of their parents, due largely to HIV/AIDS. Although many of these orphans are cared for by members of their extended family, the strain placed on caregivers can be large, especially in Kenya and other Sub-Saharan countries with very high poverty rates. While there is overall agreement that the potential scope of the problem is likely to be a heavy burden at every level from the child to the community and national level, the variation in welfare outcomes observed between different studies has led to disagreement on the appropriate measures that should be taken to address the needs of OVC. There are those that argue that interventions should not be focused specifically on OVC, but rather on reducing poverty or on raising education or health resources at the community level. Even among those that believe in interventions focused specifically on OVC or on their caregivers, there is disagreement on what is the best course of action, especially given the high cost of OVC-specific interventions (Deinenger et al 2003). From the increasing body of evidence being collected in sub-Saharan Africa it is increasingly clear that the needs of each affected community are different, and consequently appropriate support structures are also likely to vary (Ainsworth and Filmer 2002, Oleke et al 2005). The available literature also suggests the importance of considering the resilience observed in many families affected by HIV/AIDS prior to decisions being made on relevant support structures (Adbe, 2007).

The aim of this paper is to provide evidence to inform current and future policy and practice initiatives for OVC welfare in poor urban areas. The specific objectives are:

- To examine variations in child welfare within and between households;
- To explore the relationship between child and household-level characteristics and welfare outcomes.
- To suggest potential points of intervention to support OVC through the identification of child and household-level characteristics that convey resilience in the context of poverty and adversity

## Data and Methods

The study settings are two slum areas of Nairobi (Viwandani and Korogocho). In these two slums the African Population and Health Research Center (APHRC) has been conducting a demographic surveillance system referred to as the Nairobi Urban Health and Demographic Surveillance System (NUHDSS), with about 60,000 registered inhabitants. These two densely populated communities have high unemployment, poverty, crime, poor sanitation and generally poorer health indicators when compared to Nairobi as a whole, and even to rural Kenya (APHRC, 2002). The two communities exhibit structural differences that provide opportunity for

comparisons between communities facing poverty and health challenges, but operating under different livelihood settings. Viwandani is home to many industrial workers; it attracts migrants with relatively higher education levels, and exhibits higher levels of economic activity for both men and women. By contrast, the population in Korogocho is more stable and shows more co-residence of spouses.

From the NUHDSS 1,202 orphan children of primary school age (6-14 years) were identified (295 in Viwandani and 907 in Korogocho). The study sought to include all orphans in both study sites, with an equal number of non-orphans matched upon age and gender. A random sample of 1,202 non-orphan children was selected from the NUHDSS data, for a total sample of 2,404. A total of 1,235 children and their caregivers were successfully interviewed between February and April 2007.

### *Aspects of child welfare*

For the purpose of this paper the following aspects of child welfare are of interest:

1. Malnutrition: Measured by the height-for-age and weight for age z-score
2. Progress through school: Measured by a score that reflects the difference in years between the actual grade achieved by the target child and the appropriate grade for age

### *Predictors of child welfare*

The potential covariates of child welfare investigated in this study included:

- *At the child level:* age, sex, orphan status (Non-orphan; Father-only orphan; Mother-only orphan; Double orphan), whether the child was living with his/her biological parents, and time since death of parent(s).
- *At the household level:* household wealth (constructed from household possessions using principal components analysis), education of the household head, ethnicity, household amenities (electricity, cooking fuel, type of toilet), number of children and siblings in the household.
- *At the community level:* geographical location

### *Methods of analysis*

Multilevel models are used to account for the hierarchical structure of the data whereby children are nested within households (Duncan et al., 1998; Rasbash et al., 2002). Since all dependent variables are continuous, the following model is fitted for each outcome:

$$\begin{cases} S_{ij} = a_{0j} + \sum_{p=1}^8 b_p h_{pj} + \sum_{q=1}^4 I_q c_{qij} + e_{0ij} \\ a_{0j} = a_{00} + u_{0j} \end{cases}$$

Where  $S_{ij}$  is a measure of the child welfare status of child  $i$  in household  $j$ ;  $a_{0j}$  is the intercept, modelled to randomly vary across communities;  $a_{00}$  is the fixed intercept, and  $u_{0j}$  is the random effect associated with household  $j$ ;  $h_{pj}$  is the  $p^{\text{th}}$  community- or household-level covariate for the household  $j$ ;  $c_{qij}$  is the  $q^{\text{th}}$  child-level covariate for the child  $i$  in household  $j$ ;  $b_p$  and  $I_q$  are the fixed regression coefficients associated with  $h_{pj}$  and  $c_{qij}$ , respectively; and  $e_{0ij}$  is the level-1

residual. The general assumption in multilevel modelling is that  $u_{0j}$  and  $e_{0ij}$  are independent and distributed normally with zero means and variances  $\sigma_u^2$  and  $\sigma_e^2$ , respectively (Raudenbush & Bryk, 2002; Rasbash et al., 2002).

### **Preliminary results**

Both outcomes displayed strong within household variations as measured by the household-level random effects in the null model (model without any covariates). Child-level residual variations were however larger, and the intra-household correlation was 35% for malnutrition, and 41.2% for school progress. Each outcome was associated with different characteristics at the child and household level that conveyed resilience. Area of residence was significantly associated with both outcomes, while characteristics including wealth, ethnicity, family size, child's age and gender, and orphan status were differentially associated with each of the welfare measures.

### **Conclusion**

The results suggest that interventions to support the most vulnerable in the study communities should be multifaceted and applied at the household rather than community level. Appropriate support will be defined by the aspect of welfare that is to be enhanced and by the specific context of the individual child. In planning the content of support structures results also suggest that more detailed observational data is needed to determine the mechanisms by which the significant predictor variables convey resilience.

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