Investigating under-five mortality in non-orphaned kinship care in South Africa: Does type of kin caregiver matter?

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Extended Abstract

Introduction

In South Africa, family structures and responsibilities have changed over time (Mokone, 2014). The extended family institution in South Africa has transformed over time, due to the process of urbanisation and modernisation (Sooryamoorthy & Makhoba, 2016). The traditional family which conventionally constituted of a nuclear family and other extended kin, has been replaced with new forms of living arrangements due to family instability, death, desertion and marital dissolution (Mokone, 2014). These changes have resulted in changing family roles.

Traditionally, most children who were orphaned would be placed under the care of relatives who assumed full care and responsibility of the children (Hill, 2010). However, the last few decades have seen progressive increases in family arrangements whereby relatives provide primary care (kin-caregivers) to children who are non-orphaned (Broad, 2007). Non-orphaned kinship care refers to a family arrangement in which children are in the primary care of relatives despite having at least one biological parent still alive (Broad, 2007). In South Africa, a large number of non-orphaned children live in households where aunts, uncles or grandparents play the primary caregiver role. For instance, statistical findings have shown that over 80% of children aged 0-4 did not receive primary care from neither of their living biological parents between the periods of 2002-2012. These children received primary care from their grandparents (Statistics South Africa, 2013).

Living arrangements have been found to play a pivotal role in children's' health outcomes (Akwara et al., 2010). Some research conducted in South Africa has provided empirical evidence of the benefits of kinship care. For instance, kinship care reduces the possibility of the child being subjected to multiple placements and keeps children within their biological families (Ngwabi, 2015). Despite these benefits, other research has established that the spatial diffusion of children to grandparents and other extended kin is reported to be linked with negative health consequences (Boning & Ferreira, 2014; Breman, MacRae, & Vicary, 2018; Szilagyi, Rosen, Rubin, & Zlotnik, 2015). One study found that the placement of children with extended kin increases child mortality significantly (Putnam-Hornstein, 2011). For instance, a study that examined the influence of relatives on children's survival in rural Ethiopia found that 15% of children placed under the care of relatives died before age five, while 14% died before the age of three (Sear, Steele, McGregor, & Mace, 2002).

While some literature has examined under-five mortality in kinship care contexts in numerous sub-Saharan African countries, what remains largely neglected in literature are the effects of various kin on the mortality risks of children placed under their care i.e. whether being raised by a specific caregiver (e.g. aunt, uncle, grandmother, grandfather, cousin, older sibling or other relative) has a detrimental or positive effect on child survival. Additionally, although non-orphaned kinship care is practiced in South Africa, the mortality

risks of children of non-orphaned under-five children who are raised by various extended kin remain largely unknown. Thus, identification of these effects will contribute significantly to the global debate on the role of family structure on under-five mortality. Moreover, this study will be relevant to contemporary public and population health issues in sub-Saharan Africa. The identification of factors that affect mortality risks of children raised in non-orphaned kinship care is needed to meet the Post-2015 Sustainable Development Goal of reducing under-five mortality by 2030. Moreover, the results obtained in this study will be central to social policies and programs that target vulnerable children and their caregivers.

In this paper, we investigate the level of under-five mortality in non-orphaned kinship care by examining the effect of each individual type of kin caregiver, on child survival.

Methods

Data source

This study utilised secondary data obtained from the 2014/15 South African National Income Dynamics Survey (NIDS). The National Income Dynamics Survey is the first national panel household survey that was conducted in South Africa using a series of Waves. Each wave followed the same individuals over time, using repeated quantitative surveys among the same sample of people (Southern Africa Labour and Development Research Unit, 2016). The survey provides insight into the lives of South Africans by providing sufficient information on internal migration, fertility, mortality, savings, health, education and household spending patterns (Southern Africa Labour and Development Research Unit, 2016). Moreover, the first Wave was conducted in 2008 followed by the second Wave in 2010-2011, the third Wave in 2012 and the fourth Wave in 2014-2015 (Southern Africa Labour and Development Research Unit, 2016). This study is descriptive and only Wave 4 of the survey was analysed.

Study population

The population of interest were children under the age of five who died between birth and fifth birthday, while living in the household of a relative kin-caregiver in South Africa. The sample of children was only restricted to children who have both biological parents alive. Children who have lost both parents to death have been excluded from the study.

Definition of variables

Dependent variable

The dependent variable in this study is "Under-five mortality" and it was defined as a death that occurred between birth and the fifth birthday. In the National Income Dynamics Survey, head of households were asked: "Has the household experienced a death in the past 24 months"? The responses were captured as either "yes" or "no". The age at the time of death of the child was used to indicate under-five mortality. In order to determine whether the death occurred within a kinship care context, the question "Relationship of the deceased to the head of the household" has been included in the survey. Deceased children who are reported to be nephews, nieces, grandchildren, sisters or brothers or other relatives by the head of household were treated as children who were raised by kin-caregivers. An additional question in the survey asks if the mother or father of the child is alive. Thus to ascertain if these children are non-orphans, children who were reported to have lost both parents to death were dropped and the analysis was only restricted to children who have both parents still alive.

Independent variable

The independent variable in this study is "type of kin caregiver". Type of kin caregiver was treated as a time-constant predictor variable. This was done in order to examine the effect of each individual type of kin caregiver on the mortality levels and survival of children placed under their care, over time.

Statistical analysis

Under-five mortality was directly estimated using household death information provided by a kin caregiver. Firstly, a bar graph was used to show the levels of under-five mortality in non-orphaned kinship care in South Africa. Secondly, mortality levels were examined by solely using "type of kin caregiver" as a time-constant predictor variable against under-five mortality. In order to examine the effect of various kin on child survival, Kaplan Meier graphs were employed in the study. These assisted in predicting the length of time it took for a child death to occur while the child was raised in the specific caregiver's household (i.e. age at death). Participants who did not experience the event of interest were censored. The equation of the Kaplan-Meier product limit estimator is as follows:

$$S(t_j) = \prod_{t_j \le t} \left(1 - \frac{d_i}{n_i}\right)$$

Where:

S (^{t}i) – estimated survival probability at time t

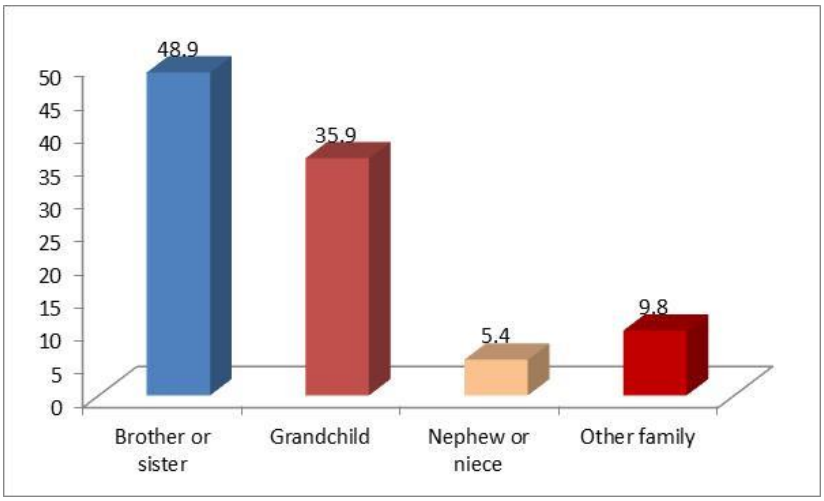
^{n}i – number of people at risk of the event of interest at the beginning of time period ^{t}i

^{d}i – number of deaths that occurred at time ^{t}i

Source: (Kaplan & Meier, 1958)

Results

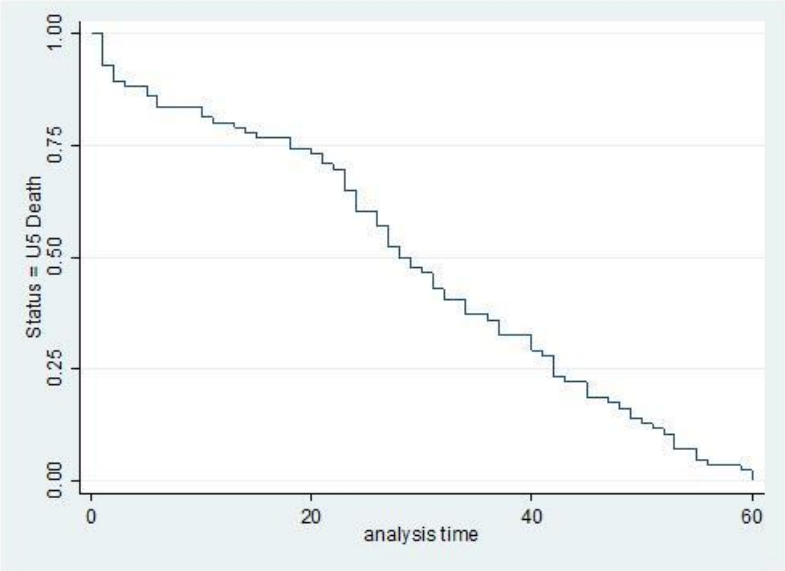
Fig 1: **Estimated levels of under-five mortality in non-orphaned kinship care in South Africa**



Majority (49%) of under-five children who died before their fifth birthday were under the care of their brother or sister, followed by 36% of under-five children who were under the care of their grandparents. The lowest percentage of under-five mortality was observed among children who were under the care of uncles or aunts as they constituted only 5% of

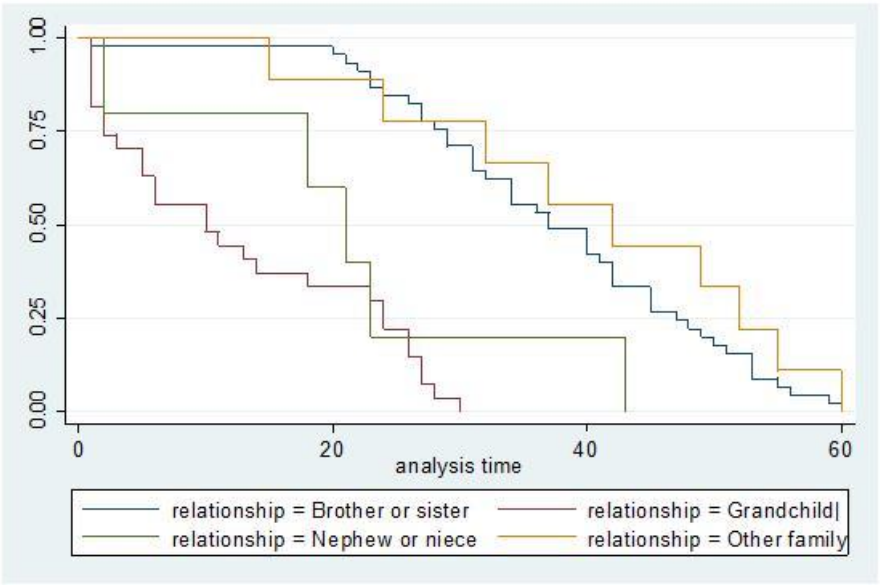
the population of under-five children who died in non-orphaned kinship care in South Africa.

***Fig 2*: Kaplan Meier estimates of under-five mortality among children raised in non-orphaned kinship care in South Africa**



The mortality risks of under-five children raised in non-orphaned kinship care were particularly highest among over 75% of children aged 0 -11 months. Thereafter, the risk of under-five death is observed to decrease with an increase in the child's age, with the lowest mortality risk of less than 25% being observed among children who have advanced to their 4th year of life.

***Fig 3*: Kaplan Meier survival estimates of under-five mortality by type of kin caregiver**



The results revealed marked differences in the risk of dying before the fifth birthday, by type of kin caregiver in South Africa. The survival curves indicate that under-five mortality is highest among over 75% of children who are raised by grandmothers (highest mortality risks observed in infancy), followed by children who are raised by uncles or aunts (over 50%). It can further be observed that the mortality risks of children who are older than 12 months are lower among children raised by uncles or aunts. While the mortality risk of children raised by other relatives was slightly lower compared to other kin caregivers, it was moderate for children who were raised by their siblings.

Conclusion

Non-orphaned children remain largely marginalised in literature as it is commonly believed that the care they receive from extended kin is beneficial for them. Given this gap, there is a need to examine the effect of extended kin on child survival especially with family structures changing so rapidly. Furthermore, it is vital to focus on children who are raised in kinship care contexts as the identification of kin effects that affect mortality risks of children raised in non-orphaned kinship care is needed to meet the Post-2015 SDG of reducing under-five mortality by 2030.

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