



Published in final edited form as:

J Marriage Fam. 2017 August ; 79(4): 1186–1204. doi:10.1111/jomf.12404.

Who Helps Single Mothers in Nairobi? The Role of Kin Support

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Abstract

Single mothers often turn to their extended kin for financial assistance and to help with child care. Such support may be especially important in areas of high poverty and poor environmental conditions. Using novel kinship data, this paper assesses the extent of support given by over 3,000 relatives to 462 single mothers living in a slum area of Nairobi, Kenya. Contrary to stereotypes about families in sub-Saharan Africa, the active kin network of single mothers is relatively small and nearly a fifth of mothers do not receive any financial or child care assistance. Different types of kin offer different kinds of support according to culturally proscribed roles. However, support also depends heavily on kin's employment status, geographic proximity, and age. These findings offer a nuanced picture of how single women living in slum areas draw upon their kin network to cope with their daily demands as mothers.

Keywords

Child Care; Family support; Intergenerational relationships; Kinship

An extensive anthropological, ethnographic, and demographic literature documents the critical role extended kin play in assisting mothers with raising children in sub-Saharan Africa (Blanc & Lloyd, 1994; Caldwell & Caldwell, 1987; Sear & Mace, 2008; Sear, Steele, McGregor, & Mace, 2002; Verhoef, 2005). Grandmothers are often singled out as being particularly instrumental in protecting the well-being of their grandchildren (Adams, Madhavan, & Simon, 2001; Cunningham, Elo, Herbst, & Hosegood, 2010; Gibson & Mace 2005; Karimli, Ssewamala, & Ismayilova, 2012; Madhavan, 2010; Parker & Short, 2009; Sear et al., 2002; Strassmann & Garrard, 2011). Other kin including the child's aunts, uncles, and older siblings are also known to regularly lend a helping hand (Blanc & Lloyd, 1994; Sear & Mace, 2008; Weinreb, 2002).

This support from kin may be particularly important for single mothers, i.e. unmarried women with at least one dependent child. Research from the U.S. and other contexts has shown that single mothers relied more heavily than married mothers on the extended kin for

financial, emotional, and practical support in raising their children (Brewster & Padavic, 2002; Hogan, Hao, & Parish, 1990; Jayakody, Chatters, & Taylor, 1993; Stack, 1974). Yet, aside from a handful of recent studies on never-married mothers in South Africa (Clark, Cotton, & Marteleto, 2015; Madhavan, 2010; Madhavan, Harrison, & Sennott, 2013; Richter & Morrell, 2006), research on kin support for single mothers and their children in sub-Saharan Africa is sparse. This dearth of research in Africa is surprising given that single motherhood is common in many countries across the sub-continent as a result of high levels of premarital birth, divorce, and widowhood. Over half of the women in Tanzania (52%), Kenya (60%), Malawi (61%), and Zimbabwe (69%) have experienced at least one episode of single motherhood before the age of 45 (Clark & Hamplová, 2013).

The challenges facing single mothers living in urban slum areas may be especially daunting. High levels of unemployment and extreme poverty place many mothers in precarious positions struggling to pay for food, shelter, and other basic necessities critical for the health and well-being of their children. Children living in such contexts require high levels of supervision as the environment is fraught with extraordinary dangers stemming from poor sanitation, accidents, and violence (Ernst, Phillips, & Duncan, 2013). Children living in slums also suffer from poor nutrition (Mutisya, Kandala, Ngware, & Kabiru et al., 2015), low rates of immunization (Mutua, Kimani-Murage, & Ettarh, 2011), and high mortality (Kimani-Murage et al., 2014) linked to these hazardous conditions. Unfortunately, these urban informal settlement areas may also restrict kin support, as high rates of mobility (Beguy, Bocquier, & Zulu 2010) place mothers far from their extended kin networks and crushing levels of poverty limit the ability of kin to transfer financial resources. Thus, although poor urban single mothers may be in great need of kin support, they may be least likely to receive it.

To better understand kinship support for single mothers living in these challenging environments, we developed and tested a new survey instrument, which we call the Kinship Support Tree (KST), by interviewing 462 single mothers living in a poor, informal settlement of Nairobi, Kenya. The KST offers several advantages compared to typical household surveys, which often use data from household rosters to approximate family support (Gage, 1997; Nyambedha, Wandibba, & Aagaard-Hansen, 2003; Omariba & Boyle, 2007; Parker & Short, 2009; Townsend, Madhavan, Tollman, Gareene, & Kahn, 2002). Because this instrument was specifically designed to capture the full range of close kin (including the child's maternal and paternal grandparents, aunts, uncles, and older siblings) living both inside and outside the household, we neither have to assume that all co-residential family members provide support nor ignore support received from non-residential family members. We use these innovative data to investigate two main questions: 1) How large and strong are the kinship networks of single mothers?; and 2) What predicts transfers of financial resources and child care from extended kin to single mothers?.

THEORETICAL FRAMEWORK

Our analyses are designed to contribute to two theoretical debates that have defined much of the research on kin support to low-income families in the U.S. and elsewhere. The first debate concerns the size and strength of kinship support networks among disadvantaged

groups, including single-mother households. Early ethnographic work described the resilience of extended family systems among low-income, urban Blacks in the U.S. (Stack, 1974) and subsequent studies highlighted the essential role of kin during times of economic hardship and personal crisis (Uttal, 1999). Other studies, however, argued that lower-income and disadvantaged groups, such as single mothers, received relatively little support from their extended kin (Jayakody et al., 1993; McDonald & Armstrong, 2001; Sarkisian & Gerstel, 2004) and that support from kin to single African-American mothers had declined over time (Brewster & Padavic, 2002). Although this debate originated in research on low-income or African-American populations in the U.S., similar questions about the size and strength of kin networks of single mothers in other contexts, such as sub-Saharan Africa, have not been explored.

In the second theoretical debate, researchers tend to fall into two camps: those who seek to understand transfers and support among kin as a function of structural factors and those who rely on cultural practices to explain variation in kin support. The structural approach emphasizes the socio-economic conditions which drive both mothers' level of need and the ability of the kin to offer assistance (Brewster & Padavic, 2002; Nettle, 2010; Snopkowski & Sear, 2015). In comparison, proponents of a cultural explanation draw on historical practices and contemporary cultural norms governing gender roles and obligations from specific family members to understand who gives help to whom (Sarkisian & Gerstel, 2004). Like with the debate about network size and strength, most of this research was conducted in the U.S. and other high-income countries. The relative importance of structural or cultural factors has received much less attention in an African context.

The Size and Strength of Kinship Networks in Sub-Saharan Africa

Although few previous studies have focused explicitly on kin support for single mothers in sub-Saharan Africa, in the broad literature on kin networks in sub-Saharan Africa, there are parallel debates about its size and strength. Anthropologists have long depicted the African family as maintaining large kinship networks consisting of close bonds of reciprocity among its extended members (Aldous, 1962; Caldwell & Caldwell, 1987; Madhavan, 2010). It is often argued that these strong kinship ties have endured in sub-Saharan Africa because of high levels of poverty and the absence of a public safety net to protect vulnerable individuals.

However, some work suggested that these bonds have weakened in response to growing urbanization, increased mobility, and resource scarcity (Kasper & Borgerhoff Mulder, 2015). Others have pointed to the declining importance of parents and kin in selecting a spouse for their sons and daughters (Hakansson, 1994; Smith, 2011). Perhaps the most compelling evidence that kinship ties have weakened comes from research on the caregivers of AIDS orphans. Although some researchers have challenged whether these findings apply in all contexts (Lund & Agyei-Mensah, 2008), numerous studies have shown a shift in the composition of orphans' caregivers. Specifically, they noted that in patrilineal societies, where children's membership is traced primarily through their fathers' lineage, care by paternal kin is culturally preferred over maternal kin. Similarly, the cultural expectations of strong ties among adult siblings render child care given by aunts and uncles preferable to

that given by grandparents (Weinreb 2002). Because less preferred kin typically assume child care responsibilities when more preferred kin are unwilling or unavailable, the increasing number of orphans residing with their maternal grandmothers has been interpreted as evidence of weakening kinship ties (Foster, 2000; Nyambedha et al., 2003; Oleke, Blystad, & Rekda, 2005; Weisner, 1997).

In contrast to the extensive literature on care provided by extended kin for orphans, little is known about the size and composition of kin support networks for single mothers in Africa. How many, if any, kin are actively engaged in helping single mothers? Are single mothers truly “lone parents” with no kin support or do most single mothers have at least one other family member with whom they share parenting responsibilities? Is this support distributed across multiple family members or limited to only one other family member? In addition, how strong are these networks? To address this last question, we measure the percentage of kin who provided recent assistance as an indicator of the strength of the overall kinship network. We also measure whether support is more likely from some types of kin than others. If single mothers, like orphans, rely heavily on culturally less preferred kin to meet their daily financial and child care needs, then this may signal relatively weak kin networks.

Structural and Cultural Determinants of Kin Support in Sub-Saharan Africa

Turning to the second debate, the structural approach implies that transfers of both time and money will be directed to mothers with greater needs and from kin with more resources.

Socio-economic factors influencing kin support

Several characteristics of single mothers are likely to influence their need for financial support and supplemental child care. Mothers with little education, low household income, and few household assets are presumably in greatest need of financial assistance and, hence, more likely to receive support from kin (Kasper & Borgerhoff Mulder, 2015). The relationship between socioeconomic status and the need for child care may be more complex. On the one hand, poorer mothers may be less likely to work and have less need for child care. On the other hand, more educated and better off mothers may work more, but may also be able to afford daycare services. Hence, women’s employment status, rather than household wealth, is likely to drive the need for kin-based child care. The presence of other young children in the household may also increase a mother’s need for both financial help and child care. In addition, younger mothers may be in particular need of support from kin as they have less child-rearing experience and lower earning potential.

In addition, a mother’s previous and current relationship with the child’s father may impact her social standing and ability to access assistance from specific kin (Madhavan 2010). To our knowledge, there are no previous studies comparing kin support to never-married, divorced, and widowed single mothers. Hence, which type of single mother receives the most kin support is unknown. On the one hand, mothers who had a previous established relationship with the child’s father (i.e. divorced or widowed mothers) may have stronger bonds with the child’s father and paternal kin and, thus, be more likely than never-married mothers to receive support. Indeed, some never-married mothers may have never met the child’s paternal relatives. On the other hand, never-married mothers may be more likely to

receive support from maternal kin as many of these young mothers still live with their parents. Whether maternal kin provide preferential support to never-married rather than formerly married mothers may be related to whether premarital childbearing is highly stigmatized, which varies across ethnicities (Hakansson, 1994).

From the perspective of the kin, whether or not they provide support is likely to reflect their ability to do so. Limited resources may inspire competition rather than cooperation among kin (Borgerhoff Mulder 2007; Kasper & Borgerhoff Mulder, 2015; Strassmann 2011). One study among the Kipsigis of Kenya found that wealthier kin were better able to ensure the survival of children than poorer kin (Borgerhoff Mulder, 2007), but another study in rural Tanzania showed that transfers among kin were lowest among the wealthiest individuals (Kasper & Borgerhoff Mulder, 2015). Whether kin are working is presumably one of the strongest predictors of providing financial transfers, although it may not be related to the provision of child care. Instead, child care may depend on the kin member's age because older relatives may find physical child care too taxing (Nyambedha et al., 2003). Geographic proximity is also likely to influence transfers among kin. Although urban migrants typically maintain strong ties to their rural kin (Beguy, Bocquier, & Zulu, 2010), only those living close to the child can offer regular child care. In contrast, geographic distance may pose less of a barrier to providing financial assistance thanks to the widespread availability of mobile money transfer services, such as M-Pesa.

Cultural norms influencing kin support

Proponents of a cultural perspective argue the culturally specific norms and practices shape kinship ties and transfers above and beyond the simple needs of some individuals and the abilities of others. In African societies (as elsewhere), different types of kin are expected to fulfill culturally proscribed roles. Previous research on kin support for orphans, fostered children, and married mothers indicates that there are specific cultural expectations depending on the type of kin (i.e. fathers, aunts, uncles, or grandparents), the kin's gender, and the lineage system of particular ethnic groups. Thus, some kin will be more likely than others to make financial transfers or provide child care even after controlling for variation in their ability to offer such support (i.e. their employment status, education, and residential location).

In married couples, for example, fathers' primary obligations usually involve economic support and protection for children (Richter & Morrell, 2006). When unions have either never been formalized or have dissolved, the role of fathers becomes more ambiguous. Although fathers are often portrayed as being entirely absent in such scenarios, the limited research from South Africa suggests that some (typically about a third) of non-residential fathers provide financial support or help with child care (Clark, Cotton, & Marteleto, 2015; Madhavan, 2010; Richter & Morrell, 2006).

Grandparents are expected to offer both practical and economic assistance to care for both orphans (Karimli et al., 2012; Nyambedha et al., 2003) and non-orphaned children (Adams, Madhavan, & Simon, 2001; Cunningham et al., 2010; Gibson & Mace 2005; Madhavan, 2010; Parker & Short, 2009; Sear et al., 2002; Sear & Mace 2008; Strassmann & Garrard, 2011). Less demographic and health research has focused on support given by aunts and

uncles even though in most African societies these relatives hold key responsibilities in their nieces' and nephews' development. In many ethnic groups, uncles, both paternal and maternal, act as quasi-social fathers to young children and provide moral guidance and financial assistance. Among matrilineal ethnic groups in West Africa, for example, maternal uncles often foster their sisters' children and assume primary responsibility for childrearing expenses (Isiugo-Abanihe, 1985). Work in Malawi shows that material transfers amongst adult siblings (i.e., from all aunts and uncles) are larger than vertical intergenerational transfers (i.e., from grandparents) (Weinreb, 2002). Lastly, the child's older siblings are frequently expected to act as "helpers in the nest" (Sear & Mace 2008) serving as regular child minders and assisting with other child care tasks.

Cultural norms about appropriate gender roles also shape which kin offer particular types of support to mothers and children. In African societies, women are typically expected to perform the majority of child care, including feeding, bathing, clothing, and watching young children, and men are usually expected to be the primary breadwinners (Blanc & Lloyd, 1994; Richter & Morrell, 2006). Consequently, grandmothers are more likely than grandfathers to assume the role of caregiver and older sisters are similarly more engaged in child care than older brothers (Blanc & Lloyd, 1994). In contrast, male relatives are expected to provide more economic transfers (Weinreb, 2002). These cultural expectations are not always borne out in practice, as a study of orphan care in Uganda found that female relatives were significantly more likely than male relatives to be both the primary caregivers and source of financial support (Karimli et al., 2012).

Lineage systems, whether matrilineal or patrilineal, establish strong normative expectations about roles and obligations kin have towards each other in sub-Saharan Africa. In patrilineal systems women join their husbands' families through marriage and children "belong" to paternal kin. The reverse is true in matrilineal ethnic groups. Even among patrilineal societies, however, there is variation across ethnic groups in whether women maintain strong ties to their natal kin after marriage (Caldwell & Caldwell, 1987; Gage, 1997). In Kenya, for example, in the patrilineal Luo and Kisii ethnic groups, when a woman marries she assumes the identity of her husband's family and becomes almost exclusively dependent on them for her economic security and social standing. In contrast, women belonging to other patrilineal ethnic groups, including the Luhya, Mijikenda, Kikuyu, and Kamba, are known to maintain strong ties with the natal kin even after marriage (Hakansson, 1994). Thus, although in patrilineal societies paternal relatives might be expected to invest more in children, some studies have shown that maternal kin play a more important role in ensuring children's welfare (Gibson & Mace, 2005; Karimli et al., 2012; Sear & Mace, 2008; Strassmann & Garrard, 2011). Among unmarried mothers, one might expect these ties to paternal relative to maternal kin to be even weaker as in many instances an unmarried mother may not even know her child's paternal kin. In addition, unmarried mothers belonging to ethnic groups with stronger maternal ties may be more likely to receive support compared to those belonging to ethnic groups where women are more dependent on their child's paternal kin.

Data and Sample

Study Site

Our study was conducted in Korogocho, an informal settlement area located on the outskirts of Nairobi, which has been covered by the Nairobi Urban Health and Demographic Surveillance System (NUHDSS) since 2002. As of December 2014, the NUHDSS included 31,136 individuals living in 10,781 households. These individuals encompass diverse ethnic groups including Kikuyu (30%), Luhya (18%), Luo (29%), and Kamba (7%). Like many slum areas, Korogocho is characterized by high mobility with 22% of its population out-migrating each year and a roughly equal number in-migrating. Much of this migration is circular reflecting the strong ties with extended kin in ethnic homelands (Beguy et al., 2010).

Korogocho is adjacent to one of Nairobi's largest dumpsites, and residents experience high levels of unemployment, poor sanitation, limited access to schools and health facilities, low-quality housing, and high levels of violence and crime. About half of the women living in this area are unemployed (APHRC 2014). To address these harsh conditions, the government has implemented slum improvement programs starting in 2004 to upgrade the infrastructure and has more recently employed residents as part of the National Youth Service program, which is designed to improve sanitation and enhance security (Muraguri, 2011). Several NGOs also operate within Korogocho and implement a variety of programs aimed at reducing poverty and improving the health, nutrition, and educational outcomes of children. Although all women may benefit from these programs, none specifically target single mothers, despite the fact that over a fifth (22%) of women with children under the age of seven are currently unmarried (author's calculation). The prevalence of single motherhood varies by ethnicity with relatively high rates among the Kikuyu (37%) and Kamba (30%), moderate rates in the Luhya (21%) and Luo (22%) groups, and low rates among the Somali population (11%).

Sample

For our sample, we identified all single mothers, defined as women who are not currently married or cohabiting with a man and who have at least one child under age seven, living in Korogocho slum at the time of the last NUHDSS census. 657 women aged 15 to 49 met these criteria of whom 126 had left the area by the time of our interviews, which were conducted between May and July in 2015. In addition, 37 refused to be interviewed and 32 were not able to be located, yielding a final sample of 462 single mothers (or 70% of eligible women). If the mother had more than one child under the age of seven, one child was randomly selected and all questions were asked in reference to that focal child. These mothers were asked to provide a full enumeration of the child's biological father, all four of the child's biological grandparents, all of the child's maternal and paternal aunts and uncles, and all of the child's siblings (including full, half, and step-siblings), regardless of where they lived or whether they were alive. Women were instructed to exclude individuals related to the child through marriage as most of these transfers were likely to be done jointly with biological kin. Thus, spouses of the child's aunts and uncles were excluded. In total, the 462 single mothers enumerated 5,344 kin members. Mothers were also asked about more distantly related kin, neighbors, or friends if they provided either financial support or child

care, but this yielded only 27 additional individuals. Because these individuals represent less than 3% of all individuals who provided assistance and because the focus of this work is on support from kin, we excluded these individuals from these analyses. For a full description of the study design and sample, see Madhavan and colleagues (Forthcoming). Most women were interviewed in their homes without other adults present. Approval for our study was granted by three ethics review boards of institutions involved in the project.

In this paper, we restrict these 5,344 kin members to *potential kin*. We define potential kin as those who can feasibly offer support to the mother and her child. Thus, this group excludes kin who 1) are aged seven or below (n=221), 2) are deceased (n=595), or 3) whose survival status is unknown (n=1,075). The total number of potential kin is 3,453. Because it is unlikely that a mother would not know the survival status of a family member who recently gave her support, potential kin select for more supportive family members. Furthermore, paternal kin are underrepresented among potential kin because mothers are less likely to know their survival status.

Measures and Methods

Dependent Variables

The KST gathers data on financial transfers and child care assistance from all potential kin. Kin are classified as “giving financial support” if the mother provides an affirmative response to the question, “In the last month, has [kin member’s name] provided any financial or in-kind support for you?”. Among kin who offered any financial support in the last month, two thirds (64.7%) contributed to general household expenses such as food, rent, or electricity. For about a third of these kin (35.3%), their contributions covered more than half of the total household expenses. In addition, nearly 90% of kin who provided any financial assistance gave either monetary or in-kind support specifically for the focal child (i.e. to cover the child’s clothing, food, or health care needs). About half of these contributions were estimated to be worth more than 2,000 KSH (\$22 USD) per month. Combining categorical data on financial support for general household expenses, monetary transfers, and in-kind contributions into a single is challenging and riddled with imprecision. Thus, in the analyses below we focus on whether any financial transfers were given rather than the amount of the transfers.

A kin member is classified as providing child care assistance if the mother says “yes” in response to the question “In the last month, has [kin member’s name] assisted you with child care in any way?”. Child care activities include child supervision, feeding, bathing, playing with or reading to the child, providing instruction or discipline, or other activities such as games or sports outside the household. Due to a programming error, follow-up questions about the length of time and exact activities performed are missing for the majority of our sample. However, for the sub-sample of kin on which the mother reported specific types of activities, we find that most of this support was instrumental rather than entertaining or educational. Nearly all kin (96%) were described as engaging in supervision, feeding, or bathing. The amount of time spent caring for the child varied by the type of kin. About two-thirds of both sisters and brothers engaged in child care devoted between one and two hours per day to caring for their younger siblings. In comparison, the majority of maternal uncles

(52.9%) who provided child care spent less than one hour and the majority of engaged maternal grandmothers (59.0%) cared for the child for three to five hours per day. Because information on the length of time and specific types of care was not collected on the full sample, we do not further analyze these data below.

Kin who provide either financial assistance or child care are referred to as *active kin* with respect to these types of support. To measure the size of a mother's network we count the number of active kin members who offer either financial transfers or child care. To assess the strength of the kin networks, we rely on two indicators. First, we estimate the proportion of active kin among potential kin. Second, we calculate the probability of providing support by type of kin and assess whether single mothers rely primarily on culturally preferred kin. Lastly, we examine which mother and kin characteristics are associated with active kin support and whether these characteristics reflect structural or cultural influences. Like most studies of kin support and intergenerational transfers, we are relying on mothers' reports. A small reliability study, in which 100 of the kin were interviewed, showed broad agreement between mothers' and kin's reports (see Madhavan, Clark, Beguy, Kabiru, & Gross, Forthcoming).

Mother Characteristics

Table 1 provides characteristics of the mother related to her need for assistance. Single mothers in our sample are relatively young with a mean age of 28. For our analyses, we recoded mothers' age into four categories (15–24, 25–29, 30–34, and 35 or more years) as support may vary between younger and older mothers. We also measure mothers' current relationship status with the child's father and find considerable variation. Almost a third of the mothers in our sample (29.2%) have never been in any type of a partnership with the child's father and another 28.6% of mothers had previously lived with or been married to the child's father. Beyond these traditional categories of union status, we determine whether single mothers were currently in a non-cohabiting relationship (8%) or had a previous non-cohabiting/non-marital union with the child's father (34.2%). Such distinctions are useful in these contexts where many relationships are not formalized through marriage or cohabitation. We include a measure of women's ethnic affiliation to assess whether differences in cultural practices across ethnic groups corresponds to levels of kin support.

To capture mothers' socio-economic status we use several measures. First, we include a measure of whether the mother had no schooling or only some primary (24.0%), completed primary school (61.0%), or completed secondary school (14.9%). In addition, we assess her relative wealth and whether she is currently working. The large majority of these single mothers (85%) are engaged in some form of income generating activity, primarily cleaning, washing clothes, selling goods or food, or participating in the government-sponsored National Youth Service program. Our wealth measure is based on ownership of 20 key assets including bicycles, refrigerators, televisions, radios, mobile phones, sofa sets, and tables. We use principal component analyses to construct a wealth index, which is subsequently categorized into wealth quintiles (Filmer & Pritchett, 2001). About a quarter of the mothers in our sample had two or more children under the age of 7. Some child characteristics such as the focal child's sex or age could also affect mothers' needs. However, because neither of

these measures was significantly associated with our outcomes, we removed them from our final models.

Kin Characteristics

The second column of Table 1 provides kin characteristics, such as age, geographic proximity, employment status, and educational attainment, which may influence their ability to provide support. Slightly less than 20% of kin were below age 20 and just over 11% above the age of 40. About 42% of potential kin were working and only 14.3% had completed secondary school. Approximately one third of kin lived in the household, 28% lived nearby and only 10.4% lived far away. For a sizeable fraction of kin, however, detailed information about age (37.0%), employment status (23.3%), education (17.8%), or location (30.6%) was not known to the respondent. This is indicative of the absence of a close or ongoing relationship; hence, it is likely to be closely correlated with failure to offer recent support. Rather than excluding these kin, we create an “unknown” category for each variable. Analyses where kin with unknown characteristics are removed yield similar substantive conclusions.

Kin Relationships and Network Size

To assess support by kinship type, we capture the kin member’s relationship to the focal child. Table 1 shows that living biological fathers comprised 7.7% of children’s potential kin and older siblings represented about 9% of kin members (5.0% for sisters and 4.4% for brothers). Nearly half of all potential kin were either maternal aunts (26.0%) or maternal uncles (23.2%). Maternal grandmothers comprised only 10.2% and grandfathers a mere 6.3%. In contrast, all paternal relatives combined constituted only 17.2% of the potential kin network of children with unmarried mothers, primarily because mothers are less likely to be aware of their survival status. Lastly, we include an indicator for the size of the potential kinship network to assess how size is related to the probability that a kin member provides support. On average, women had 7.5 potential kin members (range 0 to 24).

Models

To take into account the hierarchical nature of our data, where each child has multiple kin members, our multivariate analyses use logistic random-effects models whereby mother characteristics are measured at Level 2 and kin characteristics at Level 1. Separate models are run to assess whether kin member (i) of respondent (j) provided either financial assistance or child care. Models of child care exclude all paternal kin because their levels of support are too low to generate reliable estimates. Both models include all measures of mother (MC) and kin (KC) characteristics, which capture women’s needs and kin’s abilities, respectively. In addition, models include indicators for kin’s relationship to the child (Kin). The ability of kin to provide support is likely to vary by type of kin. For example, adult men are more likely to be employed, and, hence, uncles may be more likely to provide financial support. Similarly, mothers may be more likely to live with the child’s maternal grandmothers, which may explain why maternal grandmothers most often act as caregivers. However, if cultural norms (and not only kin’s ability) influence kin support, then these differences across kin should persist even after controlling for kin’s work status and

residential location. Lastly, we include a measure of the total size of the child's potential kinship network (Size).

$$\log \left(\frac{P_{ij}}{1-P_{ij}} \right) = MC_j \beta'_1 + KC_{ij} \beta'_2 + Kin_{ij} \beta'_3 + Size_j \beta'_4 + \alpha_j + u_{ij}$$

Results

How Large and Strong are the Kinship Networks of Single Mothers?

On average, single mothers received financial support from 1.2 kin members and child care assistance from 1.4 members. These averages, however, mask a rather skewed distribution. Figure 1 shows that over a third (36.2%) of mothers did not receive financial support from any kin and that slightly less than a third (31.6%) received no assistance with caring for their young children. In total, about 18% of mothers received neither financial assistance nor child care from any kin. In contrast, half of women (53.1%) received both financial and child care support from at least one person. Nonetheless, single mothers' active support networks were not large (defined as having three or more active kin). Most women received help from just one or two kin. Only a small percentage of women were given financial or child care support from three or more people (11.9% and 16.5%, respectively).

A relatively small proportion of all potential kin provided recent support suggesting rather weak ties to the overall network. Overall, only 16% of all potential kin gave economic assistance to single mothers and 18% offered help with caring for their young children (Table 1). In addition, Figure 2 examines the likelihood that particular types of potential kin provided child care, financial assistance, or both. The likelihood of support varied markedly by type of kin and different types of kin were likely to provide different types of support (child care vs. financial support). With respect to economic support, the child's maternal grandparents were the largest contributors. About a quarter of fathers provided economic support their children, compared to roughly 10% of the child's maternal aunts and uncles. Only about 5% of the child's paternal relatives assisted single mothers through financial transfers.

For help with child care, mothers tended to rely most heavily on the child's older sisters (63%) and maternal grandmother (45%). Older brothers (36%) and maternal aunts (21%) were also often called upon to help with child care. Only 5% of fathers helped with child supervision, bathing, feeding, or other caregiving activities and paternal kin offered virtually no child care assistance. Overall, these findings highlight the central role maternal grandmothers played in the lives of their grandchildren with over a third offering both financial and child care assistance. In contrast, 95% of the child's paternal relatives provided neither form of support. The greater likelihood of support from maternal rather than paternal relatives and from grandparents rather than aunts and uncles, suggests that single mothers, like orphans, depended heavily on culturally less preferred kin to meet their and their children's daily needs.

What Predicts Transfers of Financial Resources and Child Care from Extended Kin to Single Mothers?

Turning to the multivariate analyses in Table 2, we assessed how socio-economic conditions pertaining to mothers' needs and kin's ability and cultural factors relating to mothers' ethnicity and kin's gender and lineage were related to the odds that kin members made financial transfers (Model 1) or provided child care (Model 2).

Mother characteristics—Model 1 shows that younger mothers, those who were not working, and those who lived in poorer households were most likely to have received economic support. The odds that a mother over the age of 35 received financial support were 65% lower compared to mothers under 25. Employed women were half as likely as those who were not working to be given financial transfers. Similarly, those living in households with lower incomes (less than 5,000 KSH or \$55 USD per month) were more likely to have received economic support from relatives. A mother's current relationship with the child's father was also strongly associated with financial support. There was no difference in the likelihood of receiving financial support between women who have never been in a relationship with the child's father and those who were currently in a relationship with him. But women whose relationship with the father had ended were far less likely to receive support, regardless of whether or not they had been married to the child's father. Other markers of socio-economic status such as mothers' educational attainment and the household's wealth were not significantly associated with financial transfers. Moreover, the number of young children did not predict economic support.

In Model 2, we find younger mothers were also more likely to be given help with child care, although this age effect was only significant when comparing our youngest and oldest age category. A mother's current relationship with the child's father was not associated with whether kin helped out with child care. Contrary to our expectation, mothers who were working were also less likely to have help with child care than mothers who were unemployed. This finding held even after taking into account whether or not mothers used paid daycare services (results not shown). Further investigation showed that lower levels of kin-based child care were found mainly among mothers working part-time. For many of these part-time positions, such as doing laundry or selling food, mothers typically watched their children while working. Moreover, among the 15% of single mothers who were not working, two-thirds reported that they were actively looking for work. As mothers searched for work, they may have found that they had a significant need for child care. Thus, even unemployed mothers may have required kin-based child care, and some working mothers may have been able to integrate child care with their work. No other characteristics of mothers including education, household wealth and income, or number of young children were significant predictors of whether kin assisted with child care.

Kin characteristics—When we assessed the relationship between kin characteristics and provision of support, we found that kin's age, geographic proximity, and economic abilities were strongly related to whether they provided support and the type of support they provided. Model 1 shows that the odds that kin in their thirties, who were likely in their prime working years, provided financial support was more than six times higher than kin

younger than 20 years old. Kin who lived in the household were significantly more likely than those living outside the household to have provided financial support; however, distance also mattered. The odds of providing financial support among kin living nearby were three times as high as among kin living far away. As anticipated, employment status was one of the strongest predictors of providing financial support. Kin who were employed part-time were 40% less likely to offer economic support compared to kin who were employed full-time. Virtually no kin who were unemployed and those whose employment status was unknown gave economic assistance, suggesting that kin's provision of economic support was closely tied to their own financial resources. Similarly, kin who had completed secondary school were more than four times as likely as those with only some primary education to have given financial support in the last month.

Turning to Model 2, we found that kin characteristics associated with higher levels of financial support were not the same as those associated with greater child care. Notably, although older kin were more likely to provide financial support, there was no effect of kin's age on provision of child care. Education also appeared to have an opposite effect as higher levels of education corresponded to a lower likelihood of helping with child care. Being out of work reduced odds of child care assistance by half. Overall, the effect of employment status was much stronger for financial support. In contrast, geographic proximity had a noticeably larger influence on child care than financial provision. Not surprisingly, kin living far from mothers virtually never provided child care; most child care support came from family living in the child's household.

Type of Kin, Gender, and Lineage—Accounting for kin's age, proximity, and socio-economic status helped explain some, but not all, of the differences observed amongst different kin members found in Figure 2. These differences suggest that cultural factors beyond kin's access and resources governed kin's engagement. We found that although maternal grandmothers continued to be significantly more likely than fathers to provide financial support, financial contributions from maternal grandfathers became insignificant (Model 1). Consistent with Figure 2, fathers provided significantly more financial support than either maternal or paternal aunts and uncles. With respect to child care, older sisters and maternal grandmothers were roughly four times as likely as fathers (or any other type of kin) to provide assistance (Model 2). Nonetheless, fathers were significantly more likely than maternal uncles and grandfathers to have engaged with child care after adjusting for known characteristics.

There were also notable differences by gender. Maternal grandmothers were more than twice as likely as maternal grandfathers to provide financial support (Model 1). No other significant gender differences were found between brothers and sisters, aunts and uncles, and paternal grandmothers and grandfathers with respect to economic transfers. In contrast, gender differences in child care became more pronounced than in Figure 2 and were highly significant across all comparison groups (sisters vs. brothers, maternal aunts vs. uncles, and maternal grandmothers vs. grandfathers). In Figure 2, for example, the odds that older sisters assisted with child care were three times higher than the odds for older brothers. In Model 2, this odds ratio increased to roughly four. Older brothers were also no longer more likely than fathers or maternal uncles to provide child care.

Support by lineage also changed in the multivariate framework. Interestingly, although Figure 2 shows that maternal kin were much more likely than paternal kin to provide economic support, after adjusting for proximity and other kin characteristics, differences between maternal relatives and their paternal counterparts became insignificant. For example, maternal uncles were no more likely to make economic transfers than paternal uncles. Even maternal grandmothers were not significantly more likely than paternal ones to financially assist single mothers. However, one should keep in mind that these control variables included whether or not certain kin characteristics were known to the mother. Selection of which paternal kin were best known to the mother was likely to be endogenous. Hence, the best interpretation of these findings is that accounting for a mother's familiarity with a kin member and his or her characteristics, maternal and paternal aunts and uncles provided the same level of support. We also failed to find any significant differences in the propensity of kin to support single mothers across the five main ethnic groups in Korogocho. Despite potentially weaker ties to natal kin among the Luo and low levels of single motherhood among the Somali population, we did not find that either of these groups was less likely provide financial or child care support compared to Kikuyus who exhibited the highest levels of single motherhood and are known to maintain strong ties to the child's maternal kin.

Lastly, we show that having more potential kin did not significantly increase the likelihood that a single mother received financial assistance. Single mothers with fewer than five potential kin members were less likely to have help in caring for their children, but there were no additional benefits of having ten or more potential kin members compared to having a network size between five and nine.

Discussion and Conclusions

Many single mothers face the difficult dilemma of working (or seeking work) while simultaneously caring for their young children. Poor urban settings pose particularly challenging environments given high rates of extreme poverty and environmental risks for children (Ernst et al., 2013). In the absence of reliable public safety nets in most African countries, support given by extended kin may be essential for the well-being of single mothers and their children living in slum areas. Yet, it may be precisely in these environments that kinship support is most limited.

In our study we addressed two questions which contribute to two on-going debates about the relationships among kin support, poverty, and single motherhood. The first question seeks to understand whether single mothers living in an extremely poor urban environment are able to rely on a large and robust or fragmented and weak kinship support network. We found that although half of single mothers received support from one or two family members, a sizeable proportion did not receive financial help (36.2%) or assistance for child care (31.6%). A fifth of women did not get assistance with either material or practical support and few women could rely on support from more than two family members.

Networks also did not appear to be particularly strong with less than one in five potential kin members providing support. In addition, single mothers depended most heavily on less

culturally preferred kin. Consistent with the literature on orphans (Foster, 2000; Nyambedha et al., 2003; Oleke et al., 2005; Weisner, 1997), we found that maternal grandmothers carried a disproportionate share of the responsibility of helping to raise their grandchildren if their daughters were single. Because this is the first study to examine kin support in this context, it is unclear whether there has been a shift in the composition of kin support reflecting an overall weakening of kinship ties. However, even amongst patrilineal groups where over 60% of mothers had a previous partnership or marriage with the child's father, only about 5% of potential paternal kin offered support. These findings suggest that although only a minority of single mothers were "lone parents" (i.e., mothers who are cut off from family support), the limited engagement of the full kinship network draws into question the widely-held belief that African women are able to depend on a large and strong network of kin to assist them with childrearing (Caldwell & Caldwell, 1987; Verhoef, 2005).

Our second question asks what predicts transfers of financial resources and child care from extended kin to single mothers. We frame this question within the larger debate about whether structural factors or cultural practices are the most important drivers of intra-family exchanges of support. We found that younger mothers who have never married or lived with the child's father, who lived in lower-income households, and who were not working were most likely to receive financial assistance. We also showed that extended kin were more likely to help younger mothers with child care. These results are consistent with arguments that women with greater needs receive more support. Surprisingly, however, working mothers, who presumably had greater need for child care, were significantly less likely to receive help. One plausible explanation is that unemployed women required kin-based care as they look for work and some employed women were able to supervise their children while they work.

Kin support was also heavily dependent on both the economic and physical ability of kin to offer assistance. Consistent with a structural approach, kin who were working full-time were almost twice as likely as those working part-time to make financial transfers. Unemployed kin provided essentially no support and were less likely to assist with child care. On the one hand, kin who were not working may have more time available to offer child care. On the other hand, such kin may themselves have been struggling to make ends meet or have been actively seeking work and therefore have little room for helping others. They may also have been more likely to face health limitations that restricted their ability to provide hands-on care for young children. Though kin member's age was not significantly correlated with his or her propensity to provide child care, age was strongly associated with kin's ability to make financial transfers. Distance was a critical impediment to providing support of either kind, although as expected it had a stronger effect on child care than financial transfers. Although kin members who lived in the household were much more likely than those living outside the household to assist single mothers, 73.0% of co-residential kin provided no financial assistance and 50.8% provided no help with child care. Moreover, of those who lived nearby, 17.8% provided money or in-kind support and 8.0% helped care for the child in the last month. Such findings draw into question the common practice of using family structure (typically measured as co-residential family members) as a valid proxy for family support (Gage, 1997; Nyambedha et al., 2003; Omariba & Boyle, 2007; Parker & Short, 2009; Townsend et al., 2002).

Lastly, we found that cultural factors, particularly gender norms, influence the amount and type of support provided. Female kin members were not only more likely than males to assist with child care, but these gender differences also became more pronounced after controlling for kin characteristics. The exceptionally high levels of child care provided by older sisters, rivaled only by that of maternal grandmothers, is worthy of particular attention. The involvement of more than two-thirds of girls in child care may have a deleterious impact on their ability to attend school, complete schoolwork, or engage in leisure activities. In addition, maternal grandmothers were more likely than maternal grandfathers to offer financial assistance with no other differences among other gender-wise pairs. It suggests that despite membership in a patrilineal ethnic group, intergenerational resources to single mothers flow along matrilineal lines. The lack of differences across ethnic groups suggests that although married women in some of these ethnic groups may have stronger ties to their child's paternal kin, these differences do not pertain to unmarried women.

Our study, being amongst the first of its kind, suffers from important limitations, but also opens up new opportunities for future research. One of the key deficits of this study is that it is limited to single mothers in the particular context of an urban slum area and it lacks a comparison group. Our findings may not be applicable in other areas in sub-Saharan Africa. Kin support for unmarried mothers may be higher in rural areas, for example, because more kin may live nearby. Indeed, it may be that unmarried mothers who lack support from kin are more likely to move to urban areas in search of employment to support themselves and their children. Future research should gather kinship data on different groups (married vs. unmarried, urban poor vs. rural poor, urban poor vs. urban non-poor, etc.) to better assess the size and strength of different women's kinship networks. A second concern is that our study focuses on actual assistance given in the last 30 days thereby capturing recent support. Although one may argue that single mothers living in poor urban areas require general support to meet their basic daily necessities, we are not measuring support that she might receive in times of crisis (i.e. if she or her child fell ill or if she lost her job). Mothers in our sample reported that they believed they could count on nearly 60% of potential kin members to help during a crisis. Although perceived support is typically much larger than actual support, this suggests that mothers can draw on a significantly larger network of kin during moments of particular hardship. Third, we note that our measure of kinship strength reflects the proportion of different types of kin who offer support, but it does not address the amount or exact type of support. More detailed studies which measure the total amount of funds provided, total number of hours devoted to child care, or the specific kinds of child care given could lend further insights into the strength of the bonds between single mothers and their kin. Although we are unable to rigorously assess these measures with our data, descriptive associations suggest that in general kin who are more likely to provide support also provide a greater quantity of support.

If kin support is indeed limited then governmental agencies and NGOs should consider developing new policies or interventions that specifically address the needs of single mothers. Although there are on-going programs that seek to alleviate poverty, improve health, expand educational opportunities, and promote better nutrition and sanitation in the slum areas of Nairobi, only one organization specifically targets the needs to single mothers. Furthermore, single mothers will only be able to take advantage of employment

opportunities such as those offered through the National Youth Service if local day care options are affordable and safe. Focusing on job creation programs and subsidized day care services could offer single mothers the essential support they and their children need in challenging contexts where kin are unable or unwilling to offer assistance.

Acknowledgments

This project was funded by a grant from the Eunice Shriver National Institutes of Child Health (1R21-HD078763-01A1). The Nairobi Urban Health and Demographic Surveillance System (NUHDSS) has received support from a number of donors including the Rockefeller Foundation (USA), the Wellcome Trust (UK), the William and Flora Hewlett Foundation (USA), Comic Relief (UK), the Swedish International Development Cooperation (SIDA) and the Bill and Melinda Gates Foundation (USA). Writing time for APHRC co-authors was partially covered by the Swedish International Development Cooperation Agency (Grant Number 2011-001578) and the William and Flora Hewlett Foundation (Grant Number 2012-7612).

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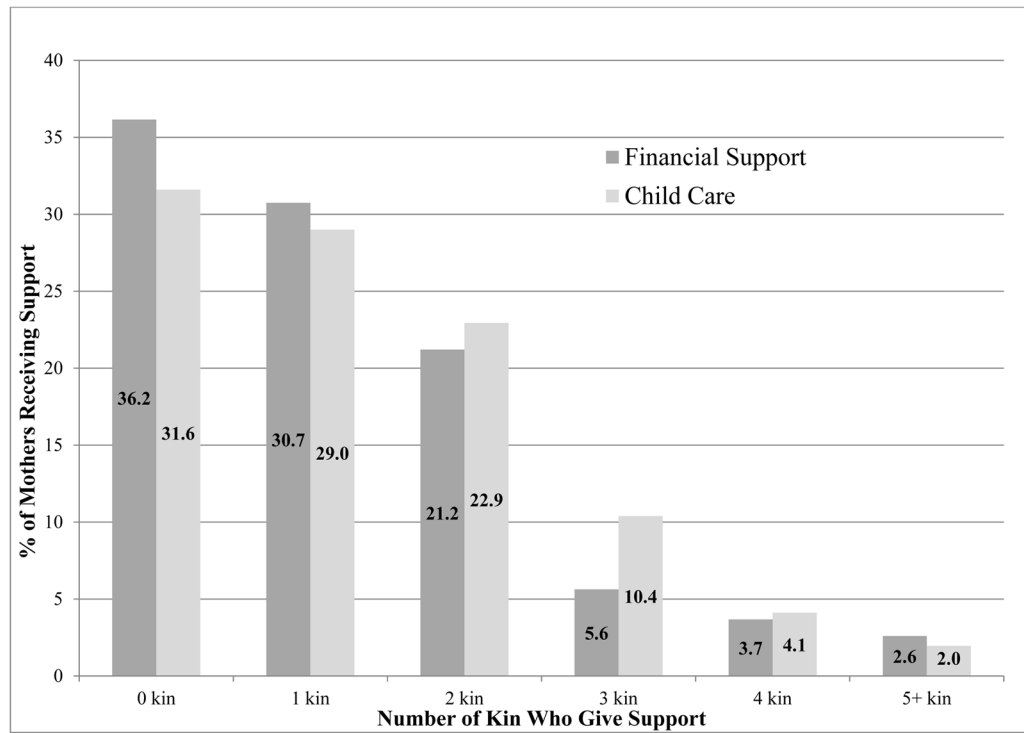


Figure 1.
Number of Kin Who Give Support to Each Mother

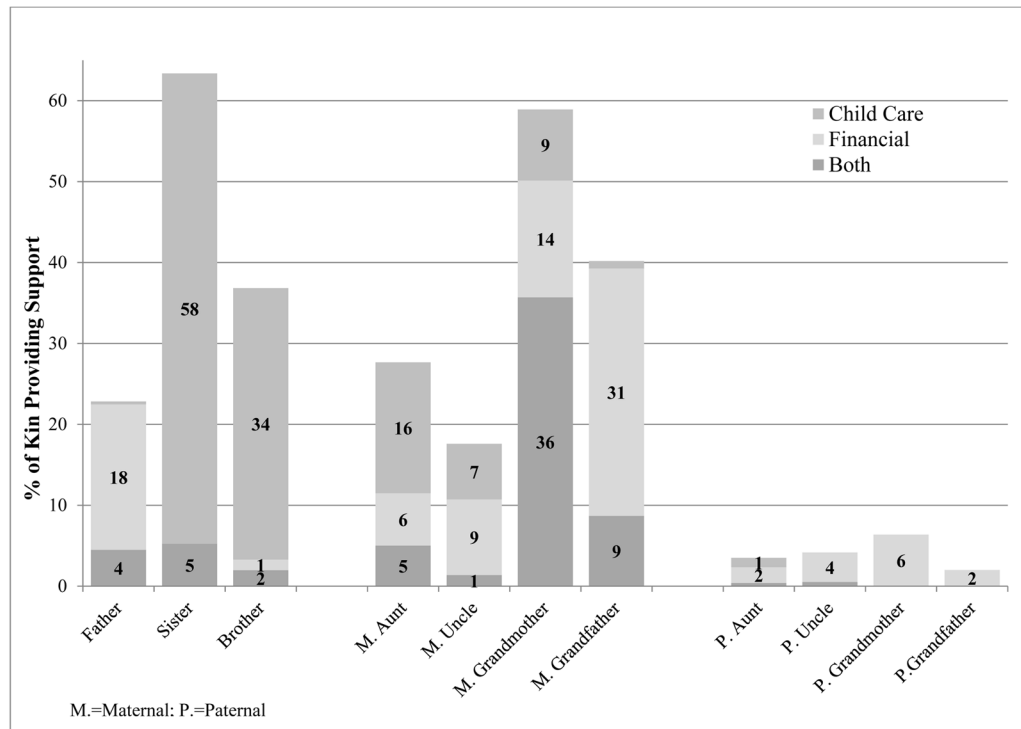


Figure 2.
Percentage of Kin Providing Support among Potential Kin by Kin Type

Table 1

Descriptive Statistics of Mothers and Potential Kin

	Mother-Level (<i>n</i> =462)		Kin-Level (<i>n</i> =3,453)
Independent Variables		Dependent Variables	
<i>Mothers' Characteristics</i>		Financial Support	15.8
Age		Child Care Assistance	17.8
15–24 Years	37.2	Independent Variables	
25–29 Years	25.3	<i>Kin Characteristics</i>	
30–34 Years	18.0	Age	
35 Years or More	19.5	8 to 19 Years	19.7
Relationship with Child's Father		20 to 29 Years	21.1
Still in Partnership	8.0	30 to 39 Years	11.0
Never in Partnership	29.2	40 Years or More	11.4
Partnership Ended	34.2	Unknown Age	37.0
Marriage Ended	28.6	Proximity to Child	
Ethnicity		Lives in Household	31.1
Kikuyu	41.8	Close	28.0
Luo	24.2	Far	10.4
Luhya	16.7	Unknown Location	30.6
Kamba	7.6	Employment Status	
Somali	6.1	Employed, Full-time	20.2
Other	3.7	Employed, Part-time	21.9
Education		Not Working	34.6
Some Primary	24.0	Unknown	23.3
Completed Primary	61.0	Education	
Completed Secondary	14.9	Some Primary	26.7
Employment Status		Completed Primary	41.2
Not Working	14.9	Completed Secondary	14.3
Working	85.1	Unknown	17.8
HH income (in KSH)		<i>Relationship to Child</i>	
< 5,000	26.0	Biological Father	7.7
5,000 – 7,499	54.4	Sister	5.0
>= 7,500	19.6	Brother	4.4
Wealth Quintile		Maternal Aunt	26.0
1st quintile	20.1	Maternal Uncle	23.2
2nd quintile	19.9	Maternal Grandmother	10.2
3rd quintile	20.1	Maternal Grandfather	6.3
4th quintile	20.1	Paternal Aunt	7.4
5th quintile	19.7	Paternal Uncle	5.6
Number of young children		Paternal Grandmother	2.7
One	75.8	Paternal Grandfather	1.5
Two or more	24.2		

	Mother-Level (<i>n</i> =462)	Kin-Level (<i>n</i> =3,453)
<i>Size of Potential Kin Network</i>		
<5	18.6	
5-9	56.7	
10-15	21.0	
>=15	3.7	

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Table 2 Mother and Kin Characteristics Associated with Giving Financial Support and Child Care (Random effects logistic regression)

	Financial Support						Child Care					
	Model 1			Model 2			Model 1			Model 2		
	B	SE	OR	B	SE	OR	B	SE	OR	B	SE	OR
<i>Mother Characteristics</i>												
Age												
15–24 Years (ref)	0.00	--	1.00	0.00	--	1.00	0.00	--	1.00	0.00	--	1.00
25–29 Years	-0.68	**	0.51	-0.39		0.26	0.68		0.26	0.68		0.68
30–34 Years	-0.76	**	0.29	0.47		-0.16	0.85		0.30	0.85		0.85
35 Years or More	-1.09	**	0.33	0.34		-0.81	0.44		0.33	0.44	*	0.44
Relationship with Child's Father												
Still in Partnership (ref)	0.00	--	1.00	0.00	--	1.00	0.00	--	1.00	0.00	--	1.00
Never in Partnership	-0.35		0.70	0.16		0.39	1.18		0.39	1.18		1.18
Partnership Ended	-1.24	**	0.37	0.29		0.44	1.56		0.39	1.56		1.56
Marriage Ended	-0.85	*	0.38	0.43		0.69	1.99		0.41	1.99		1.99
Ethnicity												
Kikuyu (ref)	0.00	--	1.00	0.00	--	1.00	0.00	--	1.00	0.00	--	1.00
Luo	0.25		1.28	-0.09		0.25	0.91		0.25	0.91		0.91
Luhya	0.33		1.39	-0.09		0.29	0.92		0.29	0.92		0.92
Kamba	-0.04		0.37	0.96		-0.22	0.81		0.37	0.81		0.81
Somali	0.87		0.46	2.38		-0.25	0.78		0.43	0.78		0.78
Other	-0.58		0.59	0.56		-0.38	0.68		0.53	0.68		0.68
Education												
Some Primary (ref)	0.00	--	1.00	0.00	--	1.00	0.00	--	1.00	0.00	--	1.00
Completed Primary	0.18		0.25	1.20		-0.05	0.95		0.23	0.95		0.95
Completed Secondary	0.44		0.33	1.55		0.42	1.52		0.33	1.52		1.52
Employment Status												
Not Working (ref)	0.00	--	1.00	0.00	--	1.00	0.00	--	1.00	0.00	--	1.00
Working	-0.69	*	0.31	0.50		-0.93	0.39		0.30	0.39	**	0.39
Wealth Quintile												

	Financial Support						Child Care							
	Model 1			Model 2			Model 1			Model 2				
	B	Sig.	SE	OR	B	OR	B	Sig.	SE	OR	B	Sig.	SE	OR
1st quintile (ref)	0.00		--	1.00	0.00	1.00	0.00		--	1.00	0.00		--	1.00
2nd quintile	0.11		0.32	1.12	-0.02	1.12	-0.02		0.32	0.98	0.32		0.32	0.98
3rd quintile	0.04		0.33	1.04	-0.04	1.04	-0.04		0.32	0.96	0.32		0.32	0.96
4th quintile	0.36		0.32	1.44	-0.18	1.44	-0.18		0.32	0.83	0.32		0.32	0.83
5th quintile	0.54		0.33	1.72	-0.09	1.72	-0.09		0.32	0.91	0.32		0.32	0.91
HH income (in KSH)														
< 5,000 (ref)	0.00		--	1.00	0.00	1.00	0.00		--	1.00	0.00		--	1.00
5,000 – 7,499	-0.77	**	0.24	0.46	-0.15	0.46	-0.15		0.24	0.86	0.24		0.24	0.86
>= 7,500	-1.09	***	0.31	0.33	-0.25	0.33	-0.25		0.30	0.78	0.30		0.30	0.78
Number of young children														
One (ref)	0.00		--	1.00	0.00	1.00	0.00		--	1.00	0.00		--	1.00
Two or more	-0.14		0.24	0.87	-0.26	0.87	-0.26		0.23	0.77	0.23		0.23	0.77
Kin Characteristics														
Age														
8 to 19 Years (ref)	0.00		--	1.00	0.00	1.00	0.00		--	1.00	0.00		--	1.00
20 to 29 Years	1.21	**	0.40	3.35	-0.37	3.35	-0.37		0.26	0.69	0.26		0.26	0.69
30 to 39 Years	1.76	***	0.45	5.82	-0.46	5.82	-0.46		0.36	0.63	0.36		0.36	0.63
40 Years or More	1.56	**	0.49	4.75	-0.46	4.75	-0.46		0.44	0.63	0.44		0.44	0.63
Unknown Age	1.05	*	0.47	2.84	-1.11	2.84	-1.11		**	0.38	**		0.38	0.33
Proximity to Child														
Lives in Household (ref)	0.00		--	1.00	0.00	1.00	0.00		--	1.00	0.00		--	1.00
Close	-1.73	***	0.22	0.18	-3.05	0.18	-3.05		***	0.25	***		0.25	0.05
Far	-2.94	***	0.36	0.05	-5.54	0.05	-5.54		***	0.66	***		0.66	0.00
Unknown Location	-2.77	***	0.31	0.06	-4.71	0.06	-4.71		***	0.46	***		0.46	0.01
Employment Status														
Employed, Full-time (ref)	0.00		--	1.00	0.00	1.00	0.00		--	1.00	0.00		--	1.00
Employed, Part-time	-0.48	*	0.19	0.62	-0.31	0.62	-0.31		0.24	0.73	0.24		0.24	0.73
Not Working	-4.04	***	0.31	0.02	-0.66	0.02	-0.66		**	0.24	**		0.24	0.52
Don't Know	-3.75	***	0.43	0.02	-1.11	0.02	-1.11		**	0.34	**		0.34	0.33

	Financial Support						Child Care							
	Model 1			Model 2			Model 1			Model 2				
	B	Sig.	SE	OR	B	OR	B	Sig.	SE	OR	B	Sig.	SE	OR
<i>Education</i>														
Some Primary (ref)	0.00		--	1.00	0.00		0.00		--	1.00	0.00		--	1.00
Completed Primary	0.50	*	0.24	1.65	-0.51		0.50	*	0.24	1.65	-0.51	**	0.19	0.60
Completed Secondary	1.46	***	0.29	4.32	-0.23		1.46	***	0.29	4.32	-0.23	*	0.29	0.79
Unknown	0.42		0.33	1.52	-0.38		0.42		0.33	1.52	-0.38		0.38	0.68
<i>Kin's Relationship to Child</i>														
Biological Father (ref)	0.00		--	1.00	0.00		0.00		--	1.00	0.00		--	1.00
Sister	-0.27		0.63	0.76	1.37	*	-0.27		0.63	0.76	1.37	*	0.55	3.94
Brother	-1.16		0.71	0.31	-0.35		-1.16		0.71	0.31	-0.35		0.55	0.71
Maternal Aunt	-1.38	***	0.31	0.25	0.12		-1.38	***	0.31	0.25	0.12		0.42	1.12
Maternal Uncle	-1.74	***	0.30	0.18	-1.69	***	-1.74	***	0.30	0.18	-1.69	***	0.45	0.18
Maternal Grandmother	0.89	*	0.38	2.44	1.48	**	0.89	*	0.38	2.44	1.48	**	0.52	4.39
Maternal Grandfather	0.13		0.42	1.14	-1.88	**	0.13		0.42	1.14	-1.88	**	0.61	0.15
Paternal Aunt	-1.42	*	0.59	0.24			-1.42	*	0.59	0.24				
Paternal Uncle	-1.35	*	0.55	0.26			-1.35	*	0.55	0.26				
Paternal Grandmother	0.38		0.65	1.46			0.38		0.65	1.46				
Paternal Grandfather	-1.55		1.23	0.21			-1.55		1.23	0.21				
<i>Size of Potential Kin Network</i>														
<5 (ref)	0.00		--	1.00	0.00		0.00		--	1.00	0.00		--	1.00
5-9	-0.12		0.31	0.88	0.93	**	-0.12		0.31	0.88	0.93	**	0.33	2.55
10-15	-0.19		0.36	0.83	0.81	*	-0.19		0.36	0.83	0.81	*	0.38	2.25
>=15	-0.87		0.59	0.42	0.42		-0.87		0.59	0.42	0.42		0.58	1.52
Constant	1.95	*	0.79	7.06	1.56	*	1.95	*	0.79	7.06	1.56	*	0.79	4.76
Observations (n)	3,282			2702			3,282			2702				
Groups (n)	433			433			433			433				
Wald chi	379.3			***			371.1			***				
rho	.28			.29			.28			.29				

Note:

* p<.05,

.100> p

'1<.01 p
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