

SOCIO-DEMOGRAPHIC AND SERVICE PROVISION CHARACTERISTICS ASSOCIATED
WITH PRIMARY SCHOOL ATTENDANCE AMONG THE MOST VULNERABLE
CHILDREN IN TANZANIA

BY

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DISSERTATION

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ABSTRACT

The current study examined the associations between service provision and the socio-demographic characteristics of the Most Vulnerable Children (MVC) in Tanzania (N = 234) and of their guardians and MVC's primary school attendance. An ecological perspective and feminist and stress theories were employed to explain the enhancing and impeding factors for MVC's primary school outcomes. This study has contributed more than previous research in identifying the services provided by a faith-based community agency in Tanzania--the Pastoral Activities and Services for People with AIDS Dar-es-salaam Archdiocese (PASADA)--and the socio-demographic characteristics of the MVC and their guardians that predict the MVC's days of primary school attendance. For lack of randomized treatment and control groups, the study made a primary contribution by employing a residualized change model or a lagged dependent variable to adjust for selection bias. This involved using pre- and post-test measures (referred to as Time 1 and Time 2, respectively) of MVC's primary school attendance during 40 days before and after receiving services from PASADA for a 2-month period. To adjust for selection bias, the Time 1 measure of school attendance was placed into an Ordinary Least Squares (OLS) regression model predicting Time 2 school attendance.

Data on the MVC's and the guardians' socio-demographic characteristics and the types of services provided were obtained from PASADA, while data on the MVC's school attendance came from the schools that the MVC attended. This study provided descriptive statistics on Time 1 and Time 2 measures of school attendance, the services provided, and MVC's and their guardians' socio-demographic characteristics. The OLS residualized change model determined whether the services provided and the social-demographic characteristics predicted MVC's Time 2 school attendance.

The findings indicate that the MVC experienced an average increase of 7.02 days of primary school attendance after receiving services from PASADA for a 2-month period. Among the ten types of services the MVC received, the most common were school uniforms (94%) and school supplies (93%), while the least common included support meetings (6%) and food assistance (3%). Results from the OLS residualized change model determined that providing school fees, food assistance, and support meetings were all positively and statistically significantly related to MVC's school attendance at Time 2. For the MVC's socio-demographic characteristics, only MVC's gender was statistically significant, and it was negative. That is, male MVC compared with female MVC, attended fewer days of school at Time 2. None of the socio-demographic characteristics of the MVC's guardians reached statistical significance. The results of the OLS multivariate residualized model (controlling for Time 1 school attendance) were contrasted with those from the traditional OLS model. The adjusted R^2 of the residualized change model, which accounted for about 28% of additional variation in Time 2 school attendance, revealed that the Time 1 school attendance measure is a strong predictor of future attendance.

The current study has several limitations. These include exclusion of vulnerable children who lived either in the streets or in institutional foster centers and those hidden in domestic work settings. Despite the limitations, the findings of this research have important social work practice and social policy implications for improving the MVC's primary educational outcomes.

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CHAPTER 1

INTRODUCTION

The poor countries in sub-Saharan Africa are prone to the adverse effects of HIV/AIDS in many development sectors, including the exponential increase of orphaned children, thus putting their educational outcomes at risk. The region is resident to more than 80% of all children orphaned by HIV/AIDS in the world (UNAIDS, UNICEF & USAID, 2004). The epidemic is reported to create severe economic and psychological vulnerability to a group of children commonly referred to as Orphans and other Vulnerable Children (OVC). Orphans are reported to bear the burden of caring for their parents when they fall sick, and many are forced to drop out of school and assume family care responsibilities (Case, Paxson, & Ableidinger, 2004). Parental illness and death caused by AIDS often deplete families' resources due to increased treatment expenses for the sick and loss of income. Death of one or both parents is likely to disorganize living conditions for the children and create a scarcity of resources for schooling.

In sub-Saharan Africa, death of a mother is linked to changes in the living arrangements for children, while death of a father is more associated with the family's loss or reduction of resources (UNICEF, 2006). These changes in living arrangement and reduction of the family's resources in turn threaten the OVC's chances of attaining a primary school education. The AIDS epidemic creates many orphans without the adults who can assist them in attaining a proper education. The World Bank (2003) estimated that the average gross primary enrollment ratio (GPER), which refers to the number of children enrolled as a percentage of the total number of children of school age, in Sub-Saharan Africa was 86% in 2000.

In poor countries like Tanzania, the GPER in 2000 was even lower at only 63% (Ainsworth, Beegle, & Koda, 2005). According to these authors, the AIDS epidemic threatens to

worsen the educational outcomes for OVC for a number of reasons. These reasons include low ability to pay school fees coupled with higher costs for medical services for the sick adults and funeral costs following their deaths. The researchers also mentioned that an increase in the demand for a child's labor and time to care for or substitute for the work of critically ill adults make it difficult for children to continue in school. Finally, they argued that there is decreased adult motivation to send their children to school because education is perceived to be no longer a reliable future welfare investment for either the children or parents themselves in their old age.

Because OVC are at high risk of poor educational outcomes, an important avenue of research is to determine the socio-demographic characteristics of the OVC and their guardians and the services they receive that predict better educational outcomes. The current research addressed these relationships in the context of primary school attendance, and drew implications for improving the school attendance of OVC in Tanzania. The study therefore informs OVC service providers regarding which particular services and interventions work well for the unique needs of these vulnerable children's primary education. The findings of the study also contribute to policy makers' efforts to put in place guidelines that not only address universal primary school problems, but also specific school support programs for OVC.

Defining Orphans and Other Vulnerable Children

OVC are generally described as children who are at higher risk of missing schooling, living in households with less food security, suffering anxiety and depression, and being exposed to HIV (UNICEF, 2006). In 2003, it was estimated that by 2010, about 20 million children globally would have lost one or both parents primarily due to AIDS (UNICEF, 2003). Three years later, 53 million children in sub-Saharan Africa was estimated to be orphaned from all causes, and 30% of them (15.7 million) will have lost one or both parents due to AIDS by 2010

(UNICEF, 2006). Most recent data (UNAIDS, 2010) indicate that the number of children orphaned by AIDS is still on the increase. The UNAIDS (2010) report on the Global AIDS Epidemic estimates that there were 18.8 million children orphaned by AIDS in 2009 globally with sub-Saharan Africa counting for almost 90% of the orphans due to AIDS. An earlier report (UNAIDS, 2009) further informs that there were more than 9 million AIDS orphans in the six countries of Kenya, Nigeria, South Africa, Uganda, United Republic of Tanzania, and Zimbabwe with Nigeria having the largest proportion (2.5 million AIDS orphans) of all six countries. Priority services for OVC including AIDS orphans care have generally focused on improving school enrolment and attendance, health and nutrition, safe water and sanitation, and legal protection and placement (UNAIDS et al., 2004).

In Tanzania, the term “Most Vulnerable Children” (MVC) was recently coined to capture the variations of vulnerable children that include both those who have lost parents due to AIDS or other causes and those from chronically poor families. The term MVC is also considered to reduce stigma associated with the term “AIDS orphans.” From this point onwards, the current study refers to these vulnerable children as MVC, although most of the literature refers to them as OVC. According to the Tanzania Ministry of Social Welfare (United Republic of Tanzania, 2008), MVC are defined as children who experience any of the following conditions:

- Live in extreme poverty
- Are affected by a chronic illness and lack adequate care and support
- Live without adequate adult supervision
- Live outside of family care
- Are marginalized, stigmatized, or discriminated against
- Have disabilities and lack adequate support

The number of MVC in Tanzania is estimated at 930,000, equivalent to 5% of the child population (United Republic of Tanzania, 2008). This large number is attributed to the impact of HIV/AIDS, high levels of poverty, and disintegration of the traditional family care system (Tanzania Commission for AIDS [TACAIDS] et al., 2008). For instance, the latter report indicates that 2.2 million people have HIV, which is equivalent to 5.8% of the country's population. About 10% of children less than 18 years have lost a mother, father, or both parents due to AIDS (Research and Analysis Working Group, 2005). In addition, 40% of the child population is estimated to live below the national poverty line (United Republic of Tanzania, 2008). MVC in Tanzania face similar schooling problems and challenges as those previously described in other sub-Saharan African countries.

Importance of MVC Primary School Attendance

The current research investigated whether and how the MVC's and their guardians' socio-demographic characteristics and the services they received relate to the MVC's primary school attendance in Tanzania. Various studies (e.g., De Walgue, 2004; Hargreaves et al., 2008; Henley, McAlpine, Muller & Vetter, 2010) have demonstrated the benefits of enabling the MVC to attend school. A recent summary indicates that MVC who attend school regularly are less likely to experience a host of social ills including alcohol and substance abuse, early marriage and sexual activity, unwanted or unintended pregnancy, unsafe abortions, sexually transmitted infections (including HIV/AIDS), exploitation, violence, and limited employment prospects (Bastien, 2008). Based on the larger literature, the current study adopts the supposition that the overall development of MVC's well-being is among other things linked to their primary school attendance.

Various interventions and programs have been implemented in Tanzania to enhance MVC's educational outcomes. The government through its comprehensive community-based program helps MVC's schooling through provision of basic needs and educational support such as providing school uniforms. Non-governmental organizations both local and international ones also offer different support packages (Mamdani, Rajani, Leach, Tumbo-Masabo & Omondi, 2009). MVC's educational assistance programs are designed to reduce the burden of economic and psychological hardship to the MVC's families. Cash transfers and elimination of school fees provide the MVC's families with an instant relief from inadequate or lack of school materials and other basic life necessities. It is hypothesized in the current study that gains in MVC's school attendance are made following the support programs offered by a faith-based community agency in Tanzania—the Pastoral Activities and Services for People with AIDS Dar-es-salaam Archdiocese (PASADA).

Theoretical Framework of the Study

This study mainly employed the ecological perspective that assigns the MVC's educational outcomes to the changing and reinforcing interaction factors between the MVC, other individuals, and their environment. The feminist perspective links poor educational outcomes particularly to female MVC or MVC from male-headed households to society structural inequalities oppressive to women in general. The current study also uses stress theory to hypothesize that even in the midst of adversity, MVC's families have potentials to continue or improve the MVC's schooling when provided with necessary support.

The current research investigated the relationship between the support services they received from PASADA and the MVC's and their guardians' socio-demographic characteristics and the MVC's primary school attendance in Tanzania. The research provides a contribution to

the larger literature regarding understanding the enhancing and impeding factors for MVC's primary education outcomes. Specifically, the current research provides an added value in terms of the research design that produced more credible findings than past research regarding which support services and the MVC's and their guardians' socio-demographic factors significantly predict the MVC's days of primary school attendance. The findings of this research have important social work practice and social policy implications for improving the MVC's primary educational outcomes.

The next chapter discusses the theories that informed the research. Before reviewing the literature on the enhancing and impeding factors that are related to MVC's educational outcomes, educational outcomes are defined, and the discussion of these factors are linked with ecological, radical feminist, and stress theories. An account of the rationale and significance of the current study is also presented in the second chapter. Chapter 3 describes the study design and the study population and sample, including sampling procedures, data sources, and recruitment procedures. An account of the study measures and techniques for data analysis are also presented in the third chapter. Chapter 4 presents the results of the data analyses including both descriptive and OLS multivariate model results that controlled for Time 1 school attendance and those from the OLS model that did not control for Time 1 school attendance. The final Chapter 5 presents a discussion of the findings and explains ways in which the theories used in this study can be applied to understand the results. This chapter also examines limitations of the current study and discusses important social work practice and policy implications. Finally, it identifies possible areas for future research.

CHAPTER 2

THEORY AND LITERATURE REVIEW

This chapter first discusses the ecological, radical feminist, and stress theories that informed the current research. It then defines concepts regarding educational outcomes that the previous literature addressed. The empirical evidence regarding the enhancing and impeding factors for MVC's educational outcomes is then presented and linked with the relevant theoretical perspectives. Conclusions are then drawn from the current literature, and the chapter ends with a brief summary of the literature and the contributions of the current study.

The Study Theories

The Ecological Theory

Bronfenbrenner's (1999) ecological theory assumes that child development involves a dynamic and reciprocal process of interactions between the developing child, other individuals, and the child and his or her environmental factors, such as the immediate family, community, and larger societal conditions. This perspective views children's development as a product of the balanced and successful interactions between the developing child and the various systems in the environment, which include the microsystem, mesosystem, exosystem, macrosystem, and chronosystem (Bronfenbrenner, 1977, 1994, 1999). Bronfenbrenner (1977) emphasizes the concept of ecological transition whereby participants in various settings may change over time in role, activity, and place. These dynamic characteristics tend to shape the course and content of child development.

The ecological transitions in the context of this study may include the death or illness of a parent, a change of living arrangement, illness of MVC themselves, reduction of the income earning capacity of the parents, and parental loss of a job. The concept of reciprocal processes is

also a key feature in this perspective that underlines the belief that while child development is influenced by various settings, the child also influences the settings. The reciprocal processes are considered to occur both within and across boundaries of the settings in which the child interacts. For instance, death or illness of a parent may not only affect childcare within the family, but also the child's participation in school activities.

The microsystem level involves immediate environments/settings in which the child interacts with others such as family members, teachers, and peers. A setting (Bronfenbrenner, 1977) is a place that involves particular physical and social features in which the child engages in particular activities and in particular roles. The role of family members, teachers, and peers is critically important in supporting the MVC's access to better education. A mesosystem refers to connections/interrelationships between two or more immediate environments both of which contain the developing child. Here the interactions between a child's home and school experiences are the focus of attention. An exosystem comprises interactions between two or more external environmental settings in which, at least one does not contain the child. The events that occur indirectly affect child development; for example, experiences in the parents' workplace (e.g., loss of a job) can affect children's attendance or performance in school. The macrosystem level involves the larger cultural context such as the country's economy (overall development of a country or poverty rates), technological changes, and cultural values and beliefs. The current study considers national poverty rates that trickle down to individual households' inability to provide for their basic needs as impeding factors for MVC's primary education outcomes. The chronosystem structure presents an extension of the environment from more immediate environments to a third dimension of time and space. This level offers an analysis of time as an attribute of child development over the life course and across socio-

historical circumstances (Bronfenbrenner, 1977). The chronosystem analysis describes the dynamic and transitional effects of MVC guardians' illness or death on the MVC's schooling.

Feminist Theory

Feminist theory is comprised of multiple perspectives, which Osmond and Thorne (1993) classified into liberal, socialist, and radical perspectives. The liberal feminist perspective demands for both men and women equal political, social, and economic opportunities through social and legal reforms. Socialist feminists emphasize “material” dispossession as the source of women's subordination and exploitation in the world of work. The socialist feminists also argue that women are oppressed by both capitalism and patriarchy – “the sex-gender system in producing women's subordination” (Osmond & Thorne, 1993, pp. 595). Radical feminism centers women's oppression on patriarchy and posits that the patriarchal system cannot be reformed; therefore, it must be eliminated. Citing Gordon's study (1979, pp. 107) Osmond and Thorne (1993) writes that feminism is “an analysis of women's subordination for the purpose of figuring out how to change it.” The authors consider this definition as essentially focusing on women and their experiences with the understanding that women are subordinated and oppressed by the existing social arrangements. Central to feminist theory is the concept of “gender” that feminists view as underlying the social construction and legitimating differences between women and men and justifying their unequal power relationships. For feminists, gender is therefore the foundation for unequal power relations that assign secondary value and subordinate status of women socially, economically, politically, and legally (Osmond & Thorne, 1993).

Radical feminists perceive women to be part of the historical and cultural processes of gender construction. However, they refuse to agree with the assumption that gender differences are inherently based on sex differences, but are routinely created through the social construction

processes that assign differences between women and men and girls and boys. This theory thus views gender as a routine, methodical, and recurring accomplishment that both men and women are involved in constructing (West & Zimmerman, 1987). West and Zimmerman (1987) further argue that viewing gender as an accomplishment shifts our understanding of women oppression from internal individual characteristics to external social and cultural institutions.

Thus, the radical feminists maintain that social arrangements for women versus men or gender roles are not natural or given (West & Zimmerman, 1987). West and Zimmerman also argue that social arrangements are socially created to justify depriving females from accessing certain privileges. All feminist perspectives (socialist, liberal, and radical) underscore the need to change gender relations as a way to end devaluing women in societies. The current study adopts the radical feminist view that considers poor educational outcomes for female MVC and maternal orphans fundamentally as a product of societal oppression of women.

Family Stress and Resilience Theory

Family stress and resilience theory offers a more strengths focused perspective, thus helps to explain how the MVC despite their vulnerable situations attain good schooling. The family resilience theory is based on the underlying assumptions of family stress and coping theory (Patterson, 2002). Stress theory defines family coping as the process of managing a stressful event by the family as a unit with no detrimental effects on any individual or the family as a whole. Family problems such as parental divorce, death, and prolonged illness (as in the case of HIV/AIDS) substantially expose family members to stress. Stress and coping assumptions recognize that all families can be stressed and exposed to a significant risk of crisis that can interfere with desirable family functioning, in this case the MVC's educational outcomes. The theory suggests that there can be detrimental effects, but they can be only

temporary, because the family is able to use available resources to eventually cope successfully with the stressor event.

From family stress theory (Boss, 2002), MVC's poor educational outcomes are conceptualized as a consequence of unresolved family vulnerability, which interrupts the MVC's educational attainment. From this view, stressor events in MVC's lives such as poverty, chronic illness, or death of a parent, are likely to occur, and they can demand significant changes in their family systems. In the absence of adequate coping resources or protective factors (economic, psychological, or physical), strong stressors like these can push the families into a crisis that debilitates family functioning, such as failure to keep the children in school (Bastien, 2008; Mmbando et al., 2009).

Defining Educational Outcomes

The educational outcomes examined in this literature review include school enrollment, attendance, and drop out. Little school investment for orphans related to AIDS or other causes may result in a declining standard of living for a large number of children in Africa and be counterproductive to development goals. School enrollment is an important individual-level indicator of a young person's and particularly the MVC's well-being and future life opportunities. At the population level, educational attainment among young people is considered one of the markers of a country's social and economic development potentials (Case et al., 2004). In Tanzania, the primary education system consists of 7-year duration. It is universally free and compulsory to all children from the age of 7 years; however, occasionally students are required to pay other school development contributions. The following is a list of definitions of educational outcomes examined in this literature review.

- School enrollment refers to the number of pupils who are currently reported to be “in school.” The Ministry of Education and Vocational Training (2009) classifies enrollment as either Gross Enrollment Ratio (GER) or Net Enrollment Ratio (NER). GER is defined as the number of pupils enrolled in a given level/grade of education, regardless of age, expressed as a percentage of the population in the relevant official age group. NER is defined as the number of pupils in the official age group for a given level/grade of education enrolled in that level expressed as a percentage of the total population in that age group.
- School attendance refers to the amount of time pupils actually spend in a school program, for instance, days attended school.
- Appropriate school level/grade refers to pupils being enrolled at a level/grade appropriate for their age.
- School dropout refers to enrolled pupils leaving the school without completing the grade they were in during a school year or students not enrolling for the next grade after completing their current grade.

Support for Improving MVC Educational Outcomes

This subsection first describes the extended childcare arrangements that support MVC’s schooling. It then discusses formal programs and interventions, including government and NGO support services, local community support, and state policies, that also enhance the educational outcomes of MVC.

Extended Family Child Care Arrangements

Studies (Ainsworth et al., 2005; Oleke, Blystad, Moland, Rekdal, & Heggenhougen, 2006) suggest that primary schooling outcomes are affected by the opportunity costs of

children's time. These include caring for sick parents prior to their death or assuming their sick or deceased mothers' housework or childcare responsibilities immediately after their death. Simply providing school subsidies may not be sufficient to keep these children in school. African families have a reputation for organizing child foster services (Foster, 2002) for the MVC's families that lack an adult home caretaker so that MVC can attend school.

Findings from a Zimbabwean study (Nyamukapa & Gregson, 2005), a country with very similar family cultural values as in Tanzania, emphasize the role of extended family networks in caring for vulnerable children. According to Nyambedha et al. (2003), an extended family is comprised of natural parents, children, paternal and maternal grandparents, uncles, aunts, nephews, nieces, cousins, and sons- and daughters-in-laws. As far as orphans and other vulnerable children are concerned, the extended family network shoulders the responsibility to meet their emotional and material needs.

Traditional African cultures believe that it takes a community to raise a child. Children are considered as members of the extended family where both biological parents and extended relatives in the community have a responsibility for the upbringing of the children. However, the feminist perspective considers such childcare arrangements as a source of women oppression (Osmond & Thorne, 1993). As most of these arrangements follow patrilineal kinship, feminists view them as basically justifying the dominance of men over women. However, Bicego et al. (2003) suggested that extended family or foster guardians perceive that investment in education for children who are not their own may not be beneficial for themselves. Such perceptions have a potential to negatively affect MVC's schooling contrary to popular belief that extended family networks offer first line support to needy family members.

Qualitative research also suggests that childcare arrangements organized by MVC's families and extended family members have not been sufficient to keep the maternal orphans in school. Feminists consider these arrangements patriarchal because the patrilineal relatives usually make child care arrangement decisions. Nyamukapa and Gregson (2005) narrates that in the case of the wife's death, the paternal relatives in Zimbabwe make child care arrangements through assistance from the maternal side relatives, particularly when there are very young children (under 5 years). The deceased's children (at least 5 years old) usually stay with the father if he has another wife or remarries. In the absence of another wife, a mother figure from among the maternal relatives is selected to visit the household regularly. During these home visits, the "foster" mother sees to it that the orphaned children are well fed and socialized, healthy, have good clothing, and attend school regularly.

The above arrangement looks like an ideal substitute foster care system in the absence of the mother at home. Assuming that the system works well, it may imply that death of a mother alone has few negative consequences for the orphan's educational outcomes. In reality, however, the mother figures are not obliged to properly execute these roles, and there is no sense of accountability in case of failure to do that (Nyamukapa & Gregson, 2005).

Despite the presence of extended family childcare arrangements, Nyamukapa and Gregson's (2005) study indicates that losing a mother does have detrimental effects on the MVC's schooling. Maternal orphans (not paternal or double orphans) were found to have lower primary school completion rates than non-orphans in rural Zimbabwe. However, with incentives and formal regulations, these traditional arrangements have a potential to help with the domestic chores and child caring tasks, thus giving the maternal orphans (mostly females) a chance to attend school.

On the other hand, Nyamukapa and Gregson (2005) found that extended family relatives did not mobilize material resources to support the welfare of a surviving husband, as it is assumed that the death of a mother does not have serious economic repercussions for the family. Husbands usually retain the family property and have income generating activities such as farming to properly care for the children. This cultural expectation, however, is not relevant in the context of poverty. Poor widowers are less likely to seek external support for their children's educational needs, because in patriarchal societies men are expected to be economically stronger and independent.

Although there are arguments (e.g., Foster, 2002) that the extended family system is weakening in Africa, it still remains the dominant welfare last resort for MVC. It therefore makes sense to suggest identification and strengthening of such community structures that also have a psychological potential of not disrupting familial bonds for the children.

Local Community Support Programs for MVC

In Tanzania, there are local community organized foster arrangements for the care and support of the MVC called "Mama Mkubwa" in the Swahili language (Mwaipopo, 2005). The "Mama Mkubwa" initiative consists of volunteer women in local communities who foster the MVC, particularly in the younger child-headed families. The "Mama Mkubwa" usually do not live in the MVC's households. Instead, the "Mama Mkubwa" program is built on the idea that children remain in their familiar environments, and the "Mama Mkubwa," relatives, neighbors, and the entire community visit the MVC in their homes by offering care. This model is particularly relevant for preventing movement of children into other guardians' households who are less interested in their proper care and also for providing educational support.

According to Foster (2002), a community program in Zimbabwe, which started in 1995 with 15 volunteers who provided support to 815 orphans, had a total of 385 volunteers serving 6,000 children in 2002. The volunteers provided regular home visits, school fees, food, clothing, and psychosocial support. Often times, however, community-based programs heavily depend on support from external agencies that threatens the sustainability of such programs at the time external support ends. Tentative evidence on the value of these community arrangements exists. Littrell, Thurman, Chatterji, and Brown, (2007) conducted a case study of a “Mama Mkubwa” community-based program for MVC in Tanzania. This study reports that the “Mama Mkubwa” volunteers were able to identify vulnerable children and families in the project area (Mbeya region). After identification of these MVC, the volunteers regularly visited them in their homes to provide counseling and material assistance such as school uniforms.

However, Littrell et al. (2007) also found challenges to this program, including inadequate material resources to support the overwhelming needs of MVC. In spite of this limitation, the community support networks provide great potential for organizing community-based social work interventions. For instance, social welfare agencies may scale up “Mama Mkubwa” initiatives and informal extended family structures into a formally organized MVC foster care pool of resources particularly for maternal orphaned families. Such coping mechanisms could relieve the maternal orphans of the caring and nursing responsibilities and assist them in attending school regularly.

Government and NGO Support Services

In Tanzania, the MVC program coordinated by the Social Welfare Department is the most recently introduced comprehensive community-based support program providing for the MVC’s basic welfare needs, including access to full primary education. The Civil Society

Organizations (CSO), including international and national non-governmental and faith-based organizations (FBO), are involved in providing educational support such as school uniforms, textbooks, and school transport allowance when appropriate. The Most Vulnerable Children's Committees (MVCC) at ward and village levels are responsible for identifying and linking the MVC to external resource support provided by the CSO (Mamdani et al., 2009).

Typical educational support programs for MVC in Tanzania such as the PASADA program have focused on providing material support, including school fees, uniforms, bus transport allowance, and other school developmental contributions (PASADA, 2006; Nyangara & Lema, 2009). PASADA stands out as an example of a faith-based NGO involved in supporting the MVC's educational needs in the country. Although the agency conducts assessments of the MVC's schooling needs prior to service provision, thorough baseline and post-service evaluation data do not exist.

Ainsworth et al. (2005) suggest that assistance programs and private transfers for orphans have not been addressing the special constraints of orphan children. This is because CSO's responses have focused exclusively on school subsidies. While this remedial service provision approach may provide an instant relief to families that lack school materials for their children, it basically suffers from not being sustainable and unique to the needs of the children. The model also tends to take an isolated intervention approach in addressing the educational needs that essentially require a holistic approach to improve MVC's access to sufficient resources to meet basic needs.

Government and NGO support programs are common in Eastern Central Africa. A Zimbabwean study (Nyamukapa & Gregson, 2005) reported that widows received assistance from the government and NGO programs to support the basic needs of their children. The

Zimbabwe Department of Social Welfare also runs support programs for children living in difficult circumstances. An example is the Basic Education Assistance Module (BEAM) that assists the orphans with school fees, food, counseling, fostering, and relocation to identified surviving relatives or communities. NGOs such as Plan International are also involved in assisting MVC with school fees, uniforms, and other costs. Locals have reported that not all those in need take advantage of such resources. For example, some poor husbands who lost their wives do not seek out public welfare assistance due to social stigma that regards welfare support as meant only for culturally considered disadvantaged members in the community such as widows and orphans.

A recent and the seemingly only outcome assessment study (Nyangara, Thurman, Hutchinson, & Obiero, 2009) evaluated four programs supporting orphans and other vulnerable children in Kenya and Tanzania. This study employed a post-test design and compared children served in the programs with similar children slated to receive the services in the future. The evaluation focused on all five core strategic objectives, including the one that seeks to ensure that MVC have access to essential services such as education. The educational outcomes measured whether the child was in school ever at the time of the survey and the number of days of school missed in the week preceding the survey. This evaluation found that provision of educational support, such as uniforms and textbooks, did not have significant positive relationships with the educational outcomes.

Because it used a post-test design, the above study lacked baseline data, which could have helped to estimate the dynamic changes of the programs' effects. The study also used self-reported responses to the survey questions. This raises questions regarding the validity of the

findings due to the possibility of the respondents' recall bias, exaggerations, or underreporting. Due to these limitations, the findings of this study are inconclusive.

It is important to note that effective administration of these MVC support programs (providing both therapeutic and concrete services) is often a challenge. As a result, there are observations that both internal and external resources for care of the MVC need to be administered by the available community-based structures, such as NGOs and faith-based organizations that know the living experiences of the MVC. While they may lack necessary administration skills (Foster, 2002), these organizations are believed to be less expensive and have results that are more pragmatic oriented compared to international organizations, thus having the potential to be more sustainable in the long run.

Social Policy Interventions

Social policy interventions represent broader efforts from the ecological macrosystem perspective that seeks to address poverty rates. Many studies (Ainsworth et al., 2005; Case et al., 2004; Cluver et al., 2008) have identified poverty as a major factor that prevents children from entirely or consistently attending school. In addressing poverty that prevents children from attending school, Tanzania like some other African countries such as Zambia, has implemented the Universal Primary Education policy since the 1970s (United Republic of Tanzania, 1995). The policy states that primary school education for school age children is compulsory and free. As a result, substantial gains such as a 67.6% increase in NER in primary schools in 1985 were noted. However, these gains were short lived following the economic difficulties that faced the country due to increased oil prices, debt servicing, hunger, draught, and overall poor economic performance (Sitta, 2007).

As part of the Structural Adjustment Program (SAP) to reform the country's economy, in 1995 the government introduced the Cost Sharing Policy in the Social Sector, including primary education, where parents were again required to pay school fees and other mandatory school contributions. Poor and orphaned families could not afford to pay for the new schooling costs; and by 2000, NER decreased to 57%. In 1995, the Education and Training policy was developed to improve access to education with particular emphasis on primary education. In 2002, the Primary Education Development Program (PEDP) was introduced to, among other ends, expand primary school enrollment. To achieve this goal, the government once again abolished school fees and other mandatory school contributions tied to enrollment and attendance (Sitta, 2007).

Although the broad national policy is modeled to address universal school needs, it does not uniquely provide guidelines on how to deal with the specific school needs of MVC. For instance, although primary school is now free, there are still other educational expenses for MVC to meet, such as school uniforms and learning materials. Many MVC have in the past dropped out of school as their parents became ill, and they needed medical care either during or after death of their parents. In other cases, the MVC dropped out simply due to the inability of the guardians to afford other school development contributions (Ainsworth et al., 2005). Despite the fact that there are national programs and guidelines for MVC care, there is absolutely a need to specifically incorporate MVC's special primary education needs in the national education policy.

Socio-Demographic Factors

This subsection discusses how the MVC's and their guardians' socio-demographic characteristics relate to the MVC's schooling. The discussion is linked with the relevant theoretical perspectives employed in the current study.

MVC Gender

From the radical feminist perspective, MVC's gender is considered as one of the determining factors for poor educational outcomes for female MVC. The perspective generally argues that socially tolerated male dominance underrates the importance of education for women. For instance, Case et al. (2004) quoted the World Bank statement asserting that "girls are more likely than boys to be retained at home for domestic work when household income drops due to AIDS deaths or to care for sick relatives" (p. 485). Similarly, Evans and Miguel's study (2007) reveals that there are widely reported claims by a number of international organizations suggesting pronounced gender differences in MVC's schooling following death of a parent with more detrimental effects to girls than boys.

Consistent with some of the previous literature, gender has negatively affected female MVC's ability to participate in school. For instance, Case et al.'s study (2004) demonstrates that girls had withdrawn from school or spent less time on homework as they took on the responsibility of caring for sick family members. Reviewing empirical evidence on children's schooling in sub-Saharan Africa, Lloyd and Blank (1996) raise a cultural perspective with regard to values attached to male versus female children's education. The perspective holds that where family support networks still exist, they have a greater tendency to favor education for male children than females because of the males' higher educational benefits to the family of origin.

However, contrary to the above cultural expectation, Lloyd and Blank's (1996) study found no evidence that extended family support networks functioned to benefit boys relative to girls. Other evidence also exists where in some circumstances female MVC have better educational outcomes compared with male MVC. A study in Zimbabwe (Nyamukapa & Gregson, 2005) reports more girls than boys are enrolled in primary schools in Zimbabwe, although at the secondary level, the pattern is reversed. Similarly, estimating the impact of parent

death on primary schooling, Evans and Miguel (2007) found overall a substantial decrease in school attendance following death of a parent. However, with regard to gender, the study found that girls were no more likely than boys to experience decreased school participation.

MVC Type and Living Arrangement

Starting with findings and claims that suggest better educational outcomes for non-orphan MVC, Case et al.'s study (2004) that examined the impact of orphan hood on school enrollment found that orphans in sub-Saharan Africa are significantly less likely than non-orphans to be enrolled in school. Bicego et al.'s (2003) analysis of DHS data from Ghana, Kenya, Niger, Tanzania, and Zimbabwe, which are some of the countries with the highest HIV prevalence, indicates that losing one or both parents is related to not being at the appropriate grade level compared to non-orphan children of the same age. The risk appears to be higher among the double orphans.

Anecdotal experts' opinions hold that being at an inappropriate grade level is fueled by the HIV/AIDS epidemic (UNICEF, 2006). These findings resonate with the family stress and resilience theory; that is, stress associated with orphan hood and illness destabilizes the MVC's family's capacity to educate their children at least temporarily. Eventually as suggested by stress theory, some families are able to cope successfully with the stressor event through mobilization of family and external resources.

In another study based on a relatively large purposive sample in Tanzania, Baaroy and Webb (2008) observed school attendance disparity by MVC type. In this sample, a relatively large percentage of maternal orphans (15%) were not attending school, compared to only 4% of paternal orphans in the 7- to 9-year age group. From a feminist perspective, the findings suggest that educational interests of MVC are best served in the absence of male favoritism. Overall most

double orphans, compared to either maternal or paternal orphans (15 – 17 years), appeared to be particularly at risk for non-enrollment in school.

Nyamukapa and Gregson's (2005) research also suggests an MVC type related vulnerability to schooling among the MVC in Zimbabwe. For instance, they found that maternal orphans (which could be both boys and girls) had the lowest completion rates of all groups, while female paternal orphans had higher completion rates than non-orphaned girls. Controlling for household covariates, death of a mother retained a statistically significant negative effect, while a father's death had a positive effect on children's chances of completing primary school.

As previously discussed, from an ecological perspective, living arrangements and interactions at the microsystem level have often been cited as one of the determining factors for either poor or good educational outcomes for these children. Lloyd and Blanc's (1996) study examined the association between living arrangements and school enrollment of 10-to 14-year-old children in Cameroon, Kenya, Malawi, Namibia, Niger, Tanzania, and Zambia. In Tanzania, the study found no significant difference in school enrollment between single parent orphans living with either a mother or father. In Kenya, the study found a small but significant difference in enrollment between paternal orphans (89%) and children living with fathers (93%).

However, Nyamukapa and Gregson (2005) found that more girls were likely to have completed school if they lived in a female-headed household. Paternal orphans were twice as likely to live with their mothers, as maternal orphans were to live with their fathers. These findings suggest that high primary school completion rates among paternal and double orphans might be explained by their greater likelihood of living in female-headed households, and in the case of paternal orphans, with the surviving mother. According to feminist theory, these results are made possible due to the absence of male domination, and perhaps because women are more

likely to encourage and support pursuit of education for female children. The study also revealed that residing in estates and roadside settlements, instead of in small towns and subsistence farming areas, negatively affects primary school completion. This might be due to poor people being more likely to live and work in estates and roadside settlements.

In the country of Malawi, Lloyd and Blanc's study (1996) also found a large and significant difference in school enrollment between maternal orphans and children with living mothers (47% versus 67%, respectively). In addition, Lloyd and Blank found that family support systems in female-headed households slightly favored girls while boys experienced better schooling when they stayed in high-income households. This study also found that girls who had younger siblings experienced significantly higher rates of school dropout than boys who had younger siblings. The educational protective role of the mother for MVC may suggest that the children have more chances of schooling because their mothers usually put to good use the family's meager resources for their children if they stayed in the same residence.

Another study (Oleke et al., 2006) conducted with the Langi people in Uganda found that compared to paternal orphans, maternal orphans were more likely to change homes that might interfere with schooling. Maternal orphans' surviving fathers are reported to remarry other wives and live in separate houses without paying attention to the maternal orphans' needs. Robson and Kanyanta study (2007b) in Zambia also revealed that living in poor child-headed households is a reason behind poor school attendance, because children are obliged to work for a living during school hours.

Findings from Kurzinger et al.'s (2008) study indicate that children living in families not of their origin and in female-headed households also increased the risk of delaying or not being in a proper school grade or level in Burkina Faso. These latter findings regarding female-headed

households are inconsistent with Nyamukapa and Gregson's (2005) study that found that girls living in female-headed households had more chances of completing primary school. However, when socio-demographic factors were controlled, there was no significant difference between orphans and non-orphans in school grade delay (Kurzinger et al., 2008).

Poverty and Unemployment

Although the current study did not examine poverty, it did examine the effects of the guardians' employment. No studies that examined the relationship between guardians' employment and MVC's school outcomes could be located. From an ecological perspective, poverty is one of the primary factors that is experienced within the microsystem of the home. Poverty is also a function of the broader environment (at the exosystem, macrosystem, and chronosystem levels) that deprives the MVC of the opportunity to fully access primary education (Bastien, 2008; UNICEF, 2006).

Ainsworth and Filmer's (2002) study on the relationship between poverty, orphanhood, and school enrollment of 7- to 14-year-old children in 28 countries (including Tanzania) on four continents, found that poverty was a primary reason that prevented children from being in school. Although the respondents (13- to 18-year-old youth) in Bastien's (2008) qualitative study mentioned a combination of economic, individual, and school related factors were responsible for school non-attendance, the study emphasized that poverty was the primary reason that made it difficult for many students to afford school materials. Lack of school materials was in turn responsible for school non-attendance. Likewise, in Zambia, school staff and students perceived children living in poverty to be at high risk of failing to attain education.

Case et al. (2004) found a similar trend where the children's lower school enrollment was primarily a function of poverty. In Tanzania, 40% of the child population lives at or below the

national poverty line and an estimated 5% of the child population is considered to be MVC (United Republic of Tanzania, 2008). Despite the existence of the Universal Primary Education Policy in Tanzania, parents are still obliged to incur the cost of other school contributions and uniforms (Ainsworth et al., 2005). With poverty at such a high level, many MVC families are likely to fail to enroll their children in school.

HIV/AIDS Epidemic

Among MVC, the HIV/AIDS epidemic is currently associated with guardians' illness or death. A Kenyan study (Mishra, Arnold, Cross, & Hong, 2005) appears to be the only study in sub-Saharan Africa that explicitly examined how parents' HIV infection affects school attendance of orphaned and fostered children. The study involved a large sample including 6- to 14-year-old children from the 2003 Kenya DHS national data, and compared school attendance between children of HIV-infected parents and non-HIV-infected parents. The researchers found that orphaned and fostered children of HIV positive parents were less likely to attend school than non-orphaned and non-fostered children of HIV negative parents. In addition, children of HIV positive parents were less likely to attend school than children of HIV negative parents. Family stress theory would consider the parents' HIV positive status as a stressor, which would deplete the families' resources and parents' time and ability to devote to their children. These problems in turn would result in children being less likely to attend school.

Makame et al.'s (2002) study in Tanzania that examined the impact of AIDS related adults' mortality on orphans' schooling found that orphans were significantly less likely to be currently enrolled in school. The study, however, found that those currently enrolled in school were able to attend regularly with no significant difference in their educational achievement as measured by arithmetic scores. On the other hand, children not currently attending school

(combined orphans and non-orphans) had very poor arithmetic scores (15.5) compared to 57.3 for children who were attending school.

Finally, in their qualitative study in Zambia, Robson and Kanyanta (2007) found that the respondents particularly perceived orphanhood, which is associated with AIDS, as a major factor that affects schooling. Factors responsible for these perceptions include reports that orphans frequently experienced stigma, discrimination, and bullying. Moreover, for the orphans whose parents were known or suspected to have died of AIDS, they experienced accusations of having HIV/AIDS.

MVC's Age and Timing of Parental Event

MVC's age and timing of parental illness or death also can play a determining role for MVC's schooling. Available studies demonstrate an association between younger MVC and their failure to access primary education (Beegle, de Weerdet, & Dercon, 2006). The chronosystem from the ecological perspective offers a dynamic description of how time and events influence MVC's educational outcomes. Ainsworth et al.'s (2005) study is the only research that could be located that captured the dynamic transitional effects of adult illness and mortality on MVC's schooling. The study analyzed time as an attribute of school attendance over the life course and across socio-historical circumstances, such as during the parents' illness and before and after the death of MVC's parents.

Specifically, Ainsworth et al. (2005) reported that children attending school spent substantially fewer hours in school in the 3 to 6 months prior to an adult's death in the household (with most adult mortality found in areas severely affected by the AIDS epidemic). The study further showed that after the adult's death, school attendance resumed to previous levels. This suggests that parents' illness has a higher educational risk to children than death of a parent. The

study also found a large decrease in school attendance among girls within six months following their mothers' or both parents' deaths. This may be attributed to the belief that female orphans are inclined to substitute for their deceased mothers' domestic and sibling care duties. This belief finds support from Baaroy and Webb (2008) who concluded that female orphans were retained at home to take care of their siblings. In this study, orphan status or a recent adult death in the household did not affect the older children's school attendance, contrary to the belief that older children drop out of school due to death of adults (UNAIDS, 2004).

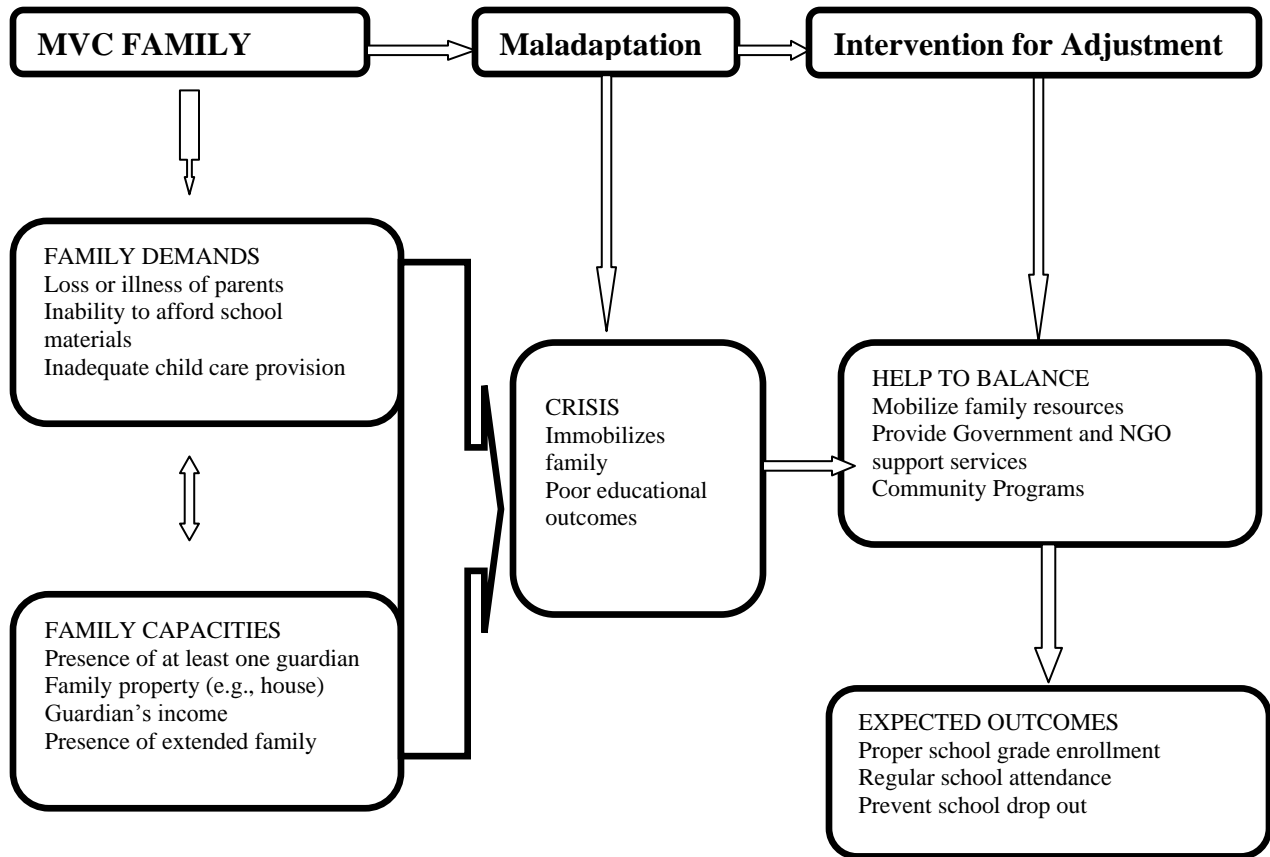
The above Ainsworth et al.'s (2005) study findings that maternal orphans and children in poor households with a recent adult death had delayed school attendance are consistent with family stress theory. In this regard, stress theory views a recent MVC's guardian's death as a new family burden potentially immobilizing the family's capacity to deal with the loss and plunging the MVC into crisis as exemplified by poor schooling. However, they found no evidence that children 7 to 14 years old dropped out of primary school due to orphan status or adult deaths. Among children already attending school, hours of attendance were lower in the months prior to the adult death in the household and the hours seemed to recover following the death. Girls sharply reduced their hours in school immediately after losing a parent. Most (77%) older children (11 – 14 years) were attending school compared to younger children (7 – 10 years) (38%). This suggests that younger children are more vulnerable to adult mortality than the older children are.

Conclusion

Based on the previous literature, this research applies the Family Adjustment and Adaptation Response (FAAR) model (McCubbin and Patterson, 1983) to summarize the services

and socio-demographic factors that determine MVC's primary educational outcomes. See Figure 1.

Figure 1
Logic Model Based on FAAR Version



The FAAR model is useful to understand how poor and AIDS affected families employ existing protective factors to cope with and alleviate the risk of their children not attending school. The model focuses on the mechanisms the MVC families use to maintain or restore

proper functioning (expected schooling outcomes) through balancing MVC's schooling demands with family capabilities.

The family FAAR model posits that MVC families are exposed to daily hassles and strains in meeting their basic welfare needs, such as housing, food, health, schooling, and psychological needs. In these circumstances, families may effectively mobilize their resources to cope with the demands (effective adaptation). However, too much stress can immobilize the family's ability to accommodate the stress and plunge the family into crisis. Extended family and community and external support represent a safety network that provides both therapeutic and concrete services to support the family's own capacities. As illustrated in the logic model diagram, the expected ultimate outcomes include proper school grade enrollment, regular attendance, and prevention of school dropout.

Summary and Purpose of the Study

Summary of the Reviewed Literature Findings

The previously reviewed research identified several forms of support that assist the MVC in improving their primary schooling. Such forms of support include Extended Family Child Care Arrangements. Nyamukapa and Gregson (2005) study emphasizes the role of extended family networks in caring for vulnerable children. Studies found that maternal orphans (not paternal or double orphans) had lower primary school completion rates than non-orphans in rural Zimbabwe. However, with incentives and formal regulations, these traditional arrangements have a potential to help with the domestic chores and child caring tasks, thus giving the maternal orphans (mostly females) a chance to attend school.

In Tanzania, Local Community Support Programs called "Mama Mkubwa" for fostering MVC in their own homes exist (Mwaipopo, 2005), and there is tentative evidence on the value of

these community arrangements (Littrell et al., 2007). Government and NGO (e.g., PASADA) Support Services for MVC schooling also exist. The educational support programs for MVC in Tanzania have included provision of material support such as school fees, uniforms, bus transport allowance, and other school developmental contributions (PASADA, 2006; Nyangara & Lema, 2009). The reviewed literature demonstrates only one outcome assessment study (Nyangara et al., 2009) that evaluated MVC support programs in Kenya and Tanzania. The evaluation did not find a significant relationship between the provided educational support and the MVC's educational outcomes.

Social policy interventions have included a provision for compulsory primary school attendance and free education. However, the policies do not uniquely provide guidelines on how to deal with the specific school needs of MVC. Research on the relationship between MVC's and their guardians' socio-demographic factors and educational outcomes suggest that MVC's gender is one of the factors that negatively affects educational outcomes for female MVC or MVC living with their fathers. Type of MVC (Lloyd & Blanc, 1996), especially maternal orphans and children with living fathers, negatively relates to the MVC being at the appropriate grade level. The MVC's living arrangements (Lloyd & Blanc, 1996) were found to have a small but significant influence on enrollment among paternal orphans and children living with fathers. In Zambia, the literature reveals that living in poor, child-headed households results in MVC's poor school attendance (Robson & Kanyanta, 2007b)

The reviewed studies have established that poverty is a primary reason that prevents children from being in school despite the existence of the Universal Primary Education Policy in Tanzania. The literature also underscores that the HIV/AIDS epidemic that created the MVC's guardians' illness or death (Mishra, et al., 2005) results in the orphaned MVC being less likely to

attend school than non-orphaned and non-fostered children of HIV negative parents. Finally, the research indicates associational evidence between younger MVC and their failure to access primary education (Beegle et al., 2006).

Gaps in Knowledge

The 2008 National Costed Plan of Action (NCPA) provides the most updated guidelines for serving the MVC (Department of Social Welfare, Ministry of Health and Social Welfare, 2008). National guidelines for evaluation of MVC support programs also exist in Tanzania. However, there is only one study (Nyangara et al., 2009) that has specifically examined the relationship between services provision and the MVC's educational outcomes in Tanzania.

Other studies in Tanzania and other sub-Saharan African countries that were previously reviewed in this chapter (e.g., Ainsworth, et al., 2005; Ainsworth & Filmer, 2002; Bicego et al., 2003; Case et al., 2004; Kurzinger et al., 2008; Lloyd & Blanc, 1996; Makame et al., 2002; Mishra et al., 2005; Nyamukapa & Gregson, 2005) also examined factors that enhance and impede primary education outcomes for MVC. However, the limitations of these studies create a necessity to consider the results inconclusive.

In line with the observation by Ainsworth et al. (2005), a number of these studies (Ainsworth & Filmer, 2004; Bicego et al., 2003; Case et al., 2004) made efforts to address the problem of a lack of a control group. Basically, findings from studies with control group designs are a key to gathering empirical evidence that policy makers and practitioners need in order to understand which interventions and what conditions can improve the educational outcomes of MVC. In addition, the above studies used cross-sectional surveys that captured data at a given time, but did not examine the dynamic patterns of schooling outcomes and their interactions with the determining factors.

Ainsworth et al.'s (2005) study appears to provide a solution to the limitations imposed by cross-sectional studies by employing a longitudinal design. While this design is capable of understanding the dynamic impact of MVC's vulnerability to poor school outcomes, it is still (similar to Bicego et al., 2003; Case et al., 2004; Ainsworth & Filmer, 2004) based on self-reported responses. Self-reported data are criticized for having interviewee biases during reporting and recalling. For instance, it is not certain how accurately the respondents can remember information on educational outcomes such as the exact number of hours the child attended school in the last seven days.

The qualitative data used in some studies (e.g., Nyamukapa & Gregson, 2005; Robson & Kanyanta, 2007a; Whitehouse, 2002) provide us with nuanced descriptions on what people perceive to be the determinants for MVC's schooling outcomes. Although these studies triangulated multiple sources of data from participants and from various collection methods, there is no information on whether "member checking" was conducted. Member checking involves the process of sharing raw data with the study participants to ascertain its accuracy before final report writing. In Robson and Kanyanta's study (2007a), the students' views regarding the impact of AIDS on MVC's schooling only came from children who were attending school. Views from school-age children who were not attending school could have added credibility to the data.

Policy makers and practitioners may not fully depend on these qualitative data for their decisions. However, the data have enhanced our understanding on how various concerned people and the children themselves perceive the MVC's schooling problems. In addition, this information is useful for developing assumptions and hypotheses for further quantitative research.

Purpose and Significance of the Study

As previously documented, MVC are at high risk of poor educational outcomes. This study assessed the contribution of MVC support services from PASADA and the MVC's and their guardians' socio-demographic characteristics to improving primary school attendance in Tanzania. These vulnerable children and their parents/guardians were chosen because the main purpose of this research was to determine whether services PASADA provides and socio-demographic characteristics of the MVC and their parents/guardians increase school attendance for these children.

In addition, primary school children were chosen because school attendance at this time is critical to the MVC's education. The choice of primary school attendance in this study as a measure for assessing MVC support services is consistent with Tanzania's national guidelines for monitoring and evaluating MVC support services (Department of Social Welfare, Ministry of Health and Social Welfare, 2008). A measure of primary school attendance also functioned as one marker of the MVC's overall socio-economic and psychological well-being. For instance, MVC's low primary school attendance may suggest inadequate food or lack of school materials that prohibit the MVC from attending school.

The current study makes a significant contribution in this area by further examining the relationships between the MVC's and their guardians' socio-demographic factors and the services they receive from PASADA and the MVC's primary school attendance in Tanzania. The study used reliable sources of primary school attendance in Tanzania, and used reliable PASADA data to examine a range of provided services and socio-demographic characteristics of the MVC and their guardians. Finally, by controlling for school attendance before services were provided, this study made a methodological contribution.

Therefore, this study contributes more than previous research to identifying the services provided by the PASADA program and the socio-demographic characteristics of the MVC and their guardians that are related to the MVC's days of primary school attendance. The knowledge generated by this study is crucial for improving the MVC's primary educational outcomes and will also inform social policy and interventions to assist MVC in pursuing their primary education.

CHAPTER 3

METHODS

This chapter first describes the research questions and provides the rationale for the study. It then provides details regarding the study design and techniques of data collection and analyses employed in the research.

Research Questions

This study is an extension of previous research that has focused on understanding the enhancing and impeding factors for MVC's primary education outcomes. Using a longitudinal research design, the study identified the factors that predict MVC's primary school attendance in Tanzania, many of which were not previously investigated in the reviewed literature. Specifically this study addressed the following research questions:

1. Which services received by MVC predict the number of days they attend primary school while controlling for a previous measure of school attendance?
2. How do the MVC's and their guardians' socio-demographic characteristics relate to the number of days MVC attend primary school while controlling for a previous measure of school attendance?

Rationale of the Study

Generally, education is one of the critical factors for normal child development. For the MVC, particularly those related to HIV/AIDS, education is a tool to empower them to understand and to address negative feelings associated with stigma and discrimination. However, MVC experience difficulties in regularly attending primary school and performing well academically. MVC who also come from poor families cannot afford to pay for schooling costs. Both girls and boys may drop out of school to become domestic workers or street vendors

as a way to contribute to their families' income. As a result, these children are also at a higher risk of their own HIV or sexually transmitted infections. Both teachers and students at school also stigmatize children whose parents cannot provide them with school uniforms (Ministry of Education and Culture, Kuleana Centre for Children's Rights & UNICEF, 2001). Even though these children are encouraged by their guardians to attend school, they often drop out to avoid stigma at school. MVC who have lost parents experience emotional distress and inadequate access to ways to provide for their health, education, food, legal, financial, and psychosocial needs (United Republic of Tanzania, 2008). Therefore, enabling the MVC to fully attain education and employable skills is part of preventing HIV/AIDS infection and breaking the cycle of poverty.

This study focused on understanding how service characteristics and the MVC's and their guardians' socio-demographic characteristics predict the number of days MVC attend primary school in Tanzania. To address the special needs of MVC, the Tanzania government has developed and implemented various care and support programs mainly through the Social Welfare Department, and civil society organizations with technical and financial support from international organizations. One of the main goals of these programs is to improve the MVC's primary school outcomes. These programs have been run by various community-based organizations including PASADA.

Since 1992, PASADA has been involved in providing services to multiple populations of people infected or affected by HIV/AIDS and the MVC (PASADA, 2006). With regard to MVC support services, the agency currently provides support and supervision to over 6,000 MVC in Dar-es-salaam (http://www.pasada.or.tz/BW_SupporttoOrphansandVulnerableChildren.htm). Through its material and psychosocial support unit, the agency provides the MVC with material

and psychological assistance to address the MVC's emotional, physical, spiritual, social, and basic needs. The material support includes school assistance to MVC who cannot afford to pay school fees and to buy school uniforms and school materials such as textbooks. The agency also provides financial assistance to MVC's extended family guardians (mainly to grandmothers and child headed households) to purchase basic livelihood items such as kerosene, charcoal, and mattresses. The psychosocial support involves activities such as office interviews and home visits to evaluate and provide for MVC's needs, residential grieving groups, life skills training groups, and support groups.

The Study Design

This study used a longitudinal design that employed pre- and post-test measures (referred to as Time 1 and Time 2, respectively) of MVC's primary school attendance to examine the relationship between the services received in the PASADA support program and MVC's days of primary school attendance. Because this study was unable to randomly assign MVC to a group receiving services and to a control group, the study used what is referred to as a residualized change model or a lagged dependent variable (Berger, Bruch, James, Johnson, & Rubin, 2009). Using this method, the analysis was able to control for a measure of the MVC's days of school attendance at Time 1 and a range of socio-demographic variables that are expected to correlate with the services provided and the outcome variable measured at Time 2. Examining the relationships between these socio-demographic variables and MVC's days of school attendance at Time 2 also was a main objective of this study.

The main purpose of using the residualized change model and controlling for the covariates is to adjust for selection bias. Although not as rigorous as a randomized control design, these two methods helped to adjust for unmeasured characteristics (such as the children's

motivation and parents' support) that are related to both MVC receiving specific types of services from PASADA and their days of school attendance, which could result in bias estimates of the effects of these services. In the residualized change model, these unmeasured characteristics may be partially reflected in the baseline or Time 1 measure of the MVC's days of school attendance. The study also conducted an OLS analysis of MVC school attendance without controlling for the Time 1 measure. Although not the main focus of this research, the results for the residualized change model was compared with the results of the traditional OLS regression. This comparison provided some indication of the selection bias inherent in using such traditional methods to assess the effects of services on school attendance. The results of this study are useful in drawing important implications for social work practice regarding which services assist MVC in increasing their days of school attendance, as well as the socio-demographic variables that are associated with the outcome.

Study Population and Sample

The Study Population

The current study focused on MVC served by PASADA, a community faith-based organization in Dar-es-salaam, Tanzania. Studying children served specifically by PASADA is made easier because the agency has a high standard system of recording and keeping data on services provided and the MVC themselves. PASADA follows the national guidelines for monitoring and evaluation developed by the Ministry of Health and Social Welfare in Tanzania. The agency also has a national reputation for being one of the community organizations in Tanzania with a long history of serving the MVC with a variety of services such as education and psychological support.

According to PASADA (2006), the agency serves very poor MVC with various specific emotional, physical, and spiritual needs. The agency generally describes MVC as children below 18 years of age currently experiencing or likely to experience a lack of adequate care and protection. Some of these are full orphans (have lost both parents) and partial orphans who have lost one parent and the remaining parent is sick. The majority of MVC in the program live in extended families, while some of them live in child-headed households and families with elderly guardians particularly grandmothers. Many MVC in the program are at risk of failing to access primary and secondary education because they come from families with financial difficulties. MVC who live in child-headed households and families with elderly guardians are particularly in need of food support and housing. Because some of these children lost their parents due to HIV/AIDS and a few of them are HIV positive, they are prone to stigma and discrimination.

Comparison with Other MVC in Tanzania

The characteristics of MCV served by PASADA are similar to other MVC in Tanzania. MVC live in conditions of extreme poverty in this country. It is estimated that 5.3% to 12% of the child population in Tanzania lacks or has minimal access to protection, education, health care, nutrition, shelter, and property and legal rights (Mamdani, Rajani, Leach, Tumbo-Masabo, & Omondi, 2009). Not all MVC are orphans, and not all orphans are vulnerable. However, orphaned children tend to be poorer than non-orphaned children (Kilama, Leach, Lindeboom, & Mamdani, 2006). According to Chitiyo et al.'s study (2008) orphans typically face challenges like anxiety, grief, trauma, depression, stigma, and discrimination that put their educational needs at risk. Maternal orphans, particularly maternal orphans who are orphaned at a younger age and those who have not yet started school, are particularly vulnerable to not accessing education (Beegle et al., 2006). MVC who are orphaned due to HIV/AIDS are at a high risk of

experiencing physical needs and psychological distress even before loss of their parents, and the situation gets worse following the illness and death of their parents (Ainsworth et al., 2005).

Comparison with Other MVC in Sub-Saharan Africa

In Sub-Saharan African countries, vulnerable children like the PASADA MVC similarly experience socio-economic and psychological deprivations long before the death of their parents (Case et al., 2004). In Zimbabwe, maternal orphans are reported to experience poorer school completion rates than all other groups of MVC (Nyamukapa & Gregson, 2005). A Kenyan study also reported higher vulnerability to education access for orphans and fostered children compared to non-orphaned and non-fostered children whose parents were not infected by HIV. Robson and Kanyanta's study (2007b) also found that orphans experienced stigma and discrimination and bullying when community members suspected that their parents had HIV/AIDS during their illness and after death.

Sampling and Recruitment Procedures

Before the sample procedures began, the researcher obtained written permission from PASADA to access the relevant agency information about the MVC of interest in this study. This official written permission was then used to request and receive approval from the Institutional Review Board at the University of Illinois at Urbana-Champaign as well as the Tanzania Review Board of the Commission for Science and Technology.

To ensure a large enough sample to attain sufficient statistical power to detect a statistically significant effect, a sample size was estimated for the proposed study. An approximate .1 (actual size .1114) effect size based on an R^2 of .10 ($r = .32$) is considered a medium effect size (Rubin & Babbie, 1997). This study adopted this modest effect size because currently there is no literature in Tanzania from which to base the expected effect size in this

study. There are 27 independent variables in this study. Using an online calculator (<http://www.danielsoper.com/statcalc/calc01.aspx>) the study estimated a minimum sample of 234, which resulted in 82% power to determine whether the correlation is significantly different from zero at the $p < .05$ level.

This study used a sampling frame from the list of MVC receiving services at PASADA (at least 7 years old, which is the youngest age to begin primary school in Tanzania) between 2009 and 2010. The frame was narrowed down to include only MVC who were eligible to attend primary school 40 days in which school was in session before they began receiving services at PASADA (Time 1) and were eligible to attend primary school 40 days in which school was in session after receiving services for a 2-month period (Time 2). The 40 days school attendance prior to and after a 2-month time period for service provision was chosen after consultation with PASADA staff, who stated from their experiences that two months is sufficient to detect the program's effectiveness for assisting MVC to attend school more regularly.

The Investigator trained 3 selected PASADA staff to help in the sample drawing and recruitment of the participants. However, the Investigator did not have access to the MVC's names until permission was received from the MVC and their parents/guardians. The training involved ensuring that the PASADA workers understood and would use non-coercive techniques when asking whether the MVC and their parents/guardians would like to meet with the Investigator. After training, PASADA staff drew a sampling frame of 858 coded participants who met the study criteria, and only one MVC was selected from families with more than one MVC receiving services from PASADA. Then they used simple random procedures to draw a sample of approximately 300 eligible MVC assuming that some MVC and/or their parents/guardians were not available or refused to participate.

The staff asked the MVC/guardians who came to their appointment at PASADA if they wanted to meet with the Investigator to talk to them about the research. For the MVC who were no longer receiving services, the staff member asked them to meet the Investigator during after services follow-ups in their homes. In addition, some MVCs and their parents/guardians received current services in their homes. In these two situations, the Investigator remained outside and met with the MVC and their parents/guardians in their homes only when the PASADA worker received the MVC's and guardians' permission to meet with them. For those who agreed to meet with the Investigator either during office or home visits, the Investigator read the consent letters to them and explained the purpose of accessing the PASADA and school records and issues related to confidentiality. He also assured them that giving their consent was voluntary and would not affect their services at PASADA or their education at their schools. Only when both MVC and their parents/guardians signed the consent forms were PASADA and school records obtained.

The PASADA social workers asked 260 potential participants to meet with the Investigator, and 4 declined. Of the 256 who agreed to discuss the research with the Investigator, 234 MVC and their guardians agreed to participate in the research and signed the consent forms. This resulted in a participation rate of 90%. Appendix A contains copies of the consent letters for both MVC and their guardians.

Data Sources and Collection

Data Sources

Information on the MVC's school attendance came from the school attendance registers in schools where the MVC attended or were attending. Information on MVC's and the guardians' socio-demographic characteristics and the types of services provided were collected

from PASADA records. As previously discussed, PASADA applies the recently developed effective system by the Social Welfare Department for identifying and serving the MVC in Tanzania. Thus, PASADA data appear to be a reliable source of data for measuring the variables in this study. Because of the high quality (careful data recording and storage) of the PASADA database, the current study had no missing data. The investigation also managed to obtain all of the necessary school attendance data.

Data Collection

After obtaining IRB approvals from the University of Illinois at Urbana Champaign and COSTECH in Tanzania, the Investigator first contacted PASADA to obtain data on the MVC and their guardians' socio-demographic characteristics. The Investigator then contacted the Head-teachers of the schools the MVC had attended, and presented the relevant school official with the Tanzania COSTECH approval of the research, as well as the guardian's consent, if necessary. The school attendance data were entered into the dataset corresponding to the relevant MVC's assigned identification number.

The Study Measures

Dependent Variable

The Time 2 dependent variable for this study--primary school attendance among the selected MVC served at PASADA--was measured as the number of school days that MVC attended during the 40 days in which school was in session after receiving PASADA services for a 2-month period. School attendance refers to a situation whereby the child is expected to spend a full school day in required school activities, and was collected from the daily school attendance registers from schools attended by the selected MVC. MVC were counted as attending school using the specific criteria that primary school authorities used to determine if the student had

officially attended a school day. In cases where the student did not attend a full day, but had a valid reason for an exemption (e.g., permission to leave before the end of the school day due to sickness), this student was counted as attending the full day. If the MVC missed a full or partial day and did not have an official excuse, they were counted as not attending school for that day.

Independent Variables

This study included 27 independent variables that fall into three groups: a Time 1 measure of MVC's primary school attendance, services provided, and socio-demographic characteristics.

Baseline (Time 1) measure of primary school attendance. In accordance with the residualized change model used in this study, a Time 1 or baseline variable measuring primary school attendance before services were provided to the MVC was placed into the model. This variable was measured identically to the Time 2 variable, except the total number of days the MVC attended school was measured over a period of 40 days prior to receiving PASADA support services.

MVC services variables. The effects of ten specific services that were received some time during a 2-month period after seeking services at PASADA on MVC's days of school attendance were estimated in this study. These services fall into three main categories: school services, basic needs, and psychosocial support related services. The study measured all ten services as dichotomous variables. The school related services included *school supplies, uniforms, and fees*. Basic needs services included *food assistance, housing/shelter, and medical assistance*. Psychosocial support services included *counseling, home visits, grieving groups, and support group meetings*. The choice of these services was based on the assumption that for MVC to

properly attend primary school, they not only need school-related material support, but also must be able to meet their basic needs and have a sufficient level of psychological well-being.

Socio-demographic variables. The study also measured the MVC's socio-demographic characteristics including their gender, age, type of MVC, number of reasons for being an MVC, and MVC's relationship to their guardians. MVC's gender was coded 1 for males, and coded 0 otherwise (reference group). As previously indicated in Chapter 2, compared to boys, girls have a higher risk of failure to attend school (Case et al., 2004).

This study measured MVC's age as a continuous variable. Research demonstrates that failure to access primary education is higher among younger vulnerable children (Beegle et al., 2006). The four of types of MVC were measured as categorical variables, which were coded 1 if the MVC was a maternal orphan, paternal orphan, or other MVC. Both parent orphans was treated as the reference group. These variables are important to investigate in this study because failure to access education varies among the different categories of MVC. For instance, maternal orphans appear to have a higher risk of poor access to education compared to paternal orphans (Beegle et al., 2006; Kilama et al., 2006). This study assumes that MVC who have lost both parents would be even more vulnerable than MVC who lost their mothers and other types of MVC.

A cumulative (continuous) score of the reasons contributing to children's status as a MVC was measured by adding the number of eight factors that applied to each child. These reasons include lack of school support, food, medical services, poor housing, guardians' chronic illness, old age, low income, and death of a parent/guardian. Having more reasons for being a MVC is indicative of increased vulnerability of the child to not pursuing an education. The MVC's relationship to their guardians consists of five categories, and the variables were coded 1

if the guardian was their father/mother, sibling, extended relative, or unrelated foster parent, with grandfather/grandmother being the reference category. This study assumed that because of age, a grandparent guardian would find it more difficult to ensure that the MVC attended school on a regular basis.

The MVC's guardians' socio-demographic variables include their gender, age, level of education, employment status, and number of dependents in the MVC's families. The MVC's guardians' gender was coded 1 if female, and coded 0 otherwise. According to Nyamukapa and Gregson (2005), orphans living in female-headed households were more likely to complete primary school than double orphans and maternal orphans who lived with surviving fathers. The current study assumed that MVC who live with their male guardians would be more vulnerable to poor educational outcomes than those living with a female guardian.

The MVC's guardians' age was measured as a continuous variable. The study assumed that older guardians would have less ability to enroll and keep the MVC attending school because income-earning ability decreases for this older age group.

From PASADA records, the MVC's guardians' education is classified into various categories including "never schooled," primary education, secondary education, and college or university education level. Results from a previous study (Ng'ondi & Eamon, under review) suggest that the majority of the MVC's guardians either have a primary education or never attended any school. Thus, this study collapsed the guardians' level of education into three categories: attained formal primary education, post-primary education, or never had formal education (the reference group). This study assumes that formal education among the MVC's guardians is associated with their better school attendance, because more educated guardians would be more likely to understand the value of education in enhancing future employable skills

of the children. Thus, better educated guardians would be expected to have more motivation than uneducated guardians to send children to school.

The employment status of the MVC's guardian was coded as 1 if the guardian was employed, and 0 if the guardian was unemployed. Employment status is indicative of the guardian's economic well-being, and lack of it usually results in family poverty. According to Ainsworth and Filmer (2002), poverty is a primary factor that prevents children from attending school. The study expected to observe that MVC whose guardians are unemployed would have fewer days attending school due their inability to sufficiently support the costs of MVC's schooling.

The number of dependents in the MVC's families was coded as a continuous variable. The dependents consist of all children below 18 years of age who depend on the MVC's family for their livelihood. Ng'ondi and Eamon's (under review) study revealed that the number of the guardians' dependents was statistically significantly positively related to MVC receiving school related services at PASADA. Thus, the study assumed that MVC from families whose guardians had more dependents would have poorer school attendance.

Before conducting the data analyses, tests for normal distributions of the continuous variables, multicollinearity, and outliers were conducted. All of these variables were normally distributed, except the Time 2 primary school attendance, which was negatively skewed. After transforming the variable did not improve the distribution, several outliers at each end of the distribution were collapsed, resulting in satisfactory measures of kurtosis (.718) and skewness (-1.061). Finally, all tests for normal distribution, multicollinearity, and outliers of the remaining variables indicated no other problems.

Data Analysis

The Statistical Package for Social Sciences (SPSS) software version 17 was used to analyze all data. This study first calculated descriptive statistics (the mean and standard deviation) for the dependent variable of the MVC's primary school attendance, as well as descriptive statistics (means and standard deviations or percentages) for the independent variables. These include the Time 1 measure of school attendance, services that the MVC received, and the MVC's and their guardians' socio-demographic characteristics.

To determine whether the services that the MVC received and the MVC's and their guardians' socio-demographic characteristics predict their school attendance at Time 2, this study estimated an Ordinary Least Squares (OLS) multivariate regression model. This method tests the statistical significance of each regression coefficient (Rubin & Babbie, 1997), and identifies which particular independent variables significantly relate to MVC's primary school attendance while controlling for all other independent variables. When estimating the effects of services on school attendance, this OLS multivariate regression model controlled for the measurable differences in the socio-demographic characteristics of the MVC and their guardians and variations in services received.

The OLS analysis, however, cannot adjust for any biases caused by differences in unmeasured characteristics, such as the MVC's guardians' motivation and values, economic ability to send the MVC to school, and the MVC's own motivation and academic ability, between MVC who receive particular services and those who do not. To address these possible biases, this study estimated an OLS residualized change regression model (Berger et al., 2009). The residualized change regression accounts for unmeasured factors likely reflected in the

MVC's baseline measure of the Time 2 school attendance. The residualized change regression model takes the following form:

$$PSA-P_i = \alpha + \beta_1 PSA-B_i + \beta_2 SS_{i.....} + \beta_3 BN_{i.....} + \beta_4 PS_{i.....} + \beta_{12} X_i + \beta_{13} X_i + \beta_i X_i + \varepsilon_i$$

On the left side of the formula, $PSA-P_i$ is the predicted average value of MVC's primary school attendance at Time 2. $PSA-B_i$ is the baseline measure of MVC's primary school attendance. $SS_{i.....}$, $BN_{i.....}$, and $PS_{i.....}$ represent the ten individual specific services falling in the three categories of the school services, basic needs, and psychosocial services, respectively. These services were received some time during the 2-month service period before the Time 2 measure of school attendance. $X_1 + X_2 + X_i$ refer to the MVC's and their guardians' socio-demographic characteristics, while ε_i represents an error term. The regression coefficients for the predictors $X_1 + X_2 + X_i$ take the form of $\beta_1, \beta_2, \beta_i$.

The above equation modeled the MVC's primary school attendance at the follow-up data point as a function of the services that MVC received, the baseline school attendance measure, and the socio-demographic characteristics. The inclusion of the baseline ($PSA-B_i$) measure in the regression model functions as a substitute (proxy) for unobserved differences between the MVC who received specific PASADA services and those who did not (Berger et al., 2009). This approach thus helped adjust for selection factors when estimating the effects of PASADA services on primary school attendance.

In order to compare the results between the OLS multivariate model that controlled for primary school attendance at Time 1 with the model without the Time 1 measure, an OLS regression model without the Time 1 variable also was estimated. In the next chapter, these results will be discussed after the descriptive and OLS residualized change regression model results.

CHAPTER 4

THE STUDY FINDINGS

This chapter presents the results of the data analyses, and is divided into two main sections. First, the descriptive sample data are presented. Second, the results of the OLS multivariate model controlling for Time 1 school attendance are presented. The results of this model are then briefly contrasted with those from the OLS model that did not control for Time 1 school attendance.

Descriptive Results

The descriptive results for the dependent variable, Time 2 school attendance, as well as the independent variables included in this study are presented in Table 1 at the end of this main section.

Time 2 School Attendance

For the dependent variable at Time 2, Table 1 indicates that these MVC had a mean of 35.78 days of primary school attendance, which is 7.02 percentage points higher than the mean of 28.76 days of primary school attendance at Time 1. Bearing in mind that the MVC were officially supposed to be in school every day in both 40-day periods, these results indicate that the MVC had generally poorer school attendance at Time 1 compared to Time 2. These results are indicative of the likelihood that at least some of the support services that MVC received may have contributed to their ability to attend school regularly.

Services Provided

There is a pronounced variation in the proportions of MVC who received the various types of services at some point while served by PASADA for the 2-month period. We can easily observe that most of the MVC received school uniforms and school supplies (about 94% and

93% of MVC, respectively). Approximately 53% of the MVC received counseling services and medical assistance. About one-third of the respondents received home visits and school fees (35.9% and 32.9%, respectively). A comparatively far smaller proportion of MVC received housing/shelter (8.5%), support meetings (6.0%), and food assistance (3.4%). The proportion of MVC who received grieving group support, which can play a crucial therapeutic role for MVC who are still grieving for the loss of their parents, was larger (approximately 18%).

MVC's Socio-Demographic Characteristics

Among the MVC's socio-demographic characteristics, the study results reveal that female respondents are over represented in the sample (58%). The MVC also have an average age of approximately 14 years, an indication that children in the primary school age bracket tend to be older. The distribution of MVC types indicates that the majority were paternal orphans (approximately 37%), while maternal orphans represented the minority group of respondents (approximately 14%). The proportion of orphans who had lost both parents was close to one-third (approximately 30%) of the respondents. For the number of reasons that contributed to MVC vulnerability, the data indicate an average of approximately 2. The study also reveals that most MVC (46%) lived with their father/mother as guardians, while very few of them (3%) lived with their siblings. The percentage of MVC who stayed with their grandparents was approximately 14%.

MVC's Guardians' Socio-Demographic Characteristics

For the MVC's guardians' socio-demographic characteristics, we first observe that the percentage of female guardians was more than double (66%) the percentage of male guardians. This distribution points to the meaningful gender issue that often times it is women who shoulder the responsibility of caring for vulnerable children. On average, the guardians' age of

approximately 43 years is considered the middle age at which parents are expected to be physically productive. Percentages for the guardians' level of education indicate that almost two thirds (62%) of them had attained primary school education, while slightly more than a quarter of them (26%) had gone past primary education. When it comes to guardians' employment status, the majority of them (79%) appear to be employed. In the MVC's families, there was an average of approximately 4 people (dependents) who could not provide for themselves.

Table 1. Percentages, Means and Standard Deviations for the Study Sample (N = 234)

Variable	Percent	Mean	SD
<u>Dependent Variable</u>			
Primary School Attendance Time 2 (range 27 to 40)		35.78	3.13
<u>Independent Variables</u>			
Primary School Attendance Time 1(range 0 to 38)		28.76	6.82
<i>Services Received</i>			
School uniforms	94.40		
School supplies	92.70		
Counseling	53.40		
Medical assistance	52.60		
Home visits	35.90		
School fees	32.90		
Grieving group support	17.90		
Housing/shelter	8.50		
Support meetings	6.00		
Food assistance	3.40		
<i>MVC Socio-Demographic Characteristics</i>			
Gender			
Female	57.70		
Male	42.30		
Age (range 7 to 20)		13.79	2.50
MVC Type			
Full orphan	29.90		
Maternal orphan	13.70		
Paternal orphan	36.80		
Other MVC	19.70		
Reasons for being MVC (range 1 to 5)		2.32	.89
Relationship to guardian			
Father/mother	46.20		
Sibling	3.40		
Extended relative	23.90		
Unrelated foster guardian	12.40		
Grandfather/mother	14.10		
<i>Guardian Socio-Demographic Characteristics</i>			
Gender			
Female	66.20		
Male	33.80		
Age (range 25 to 72)		42.68	9.77
Guardian education level			
Never attended school	12.40		
Primary education	62.00		
Post primary education	25.60		
Employment status			
Employed	79.10		
Unemployed	20.90		
Number of dependents (range 0 to 13)		3.88	2.33

Multivariate Results

This section presents the results from the OLS residualized change model. These results are followed by a brief comparison of the results of this model with those of the model without controlling for Time 1 school attendance.

Both unstandardized and standardized coefficients were calculated. The unstandardized coefficients for each of the variables indicate the amount of change in the days of primary school attendance at Time 2, given a one-unit change in the value of a particular variable, holding all other independent variables in the model constant. On the other hand, the beta coefficients of the independent variables are measured in standard deviations instead of the units of the variables. Basically, the beta coefficients are the coefficients that could have been obtained in this study if the outcome and predictor variables were all transformed to standard scores (z-scores), before running the regressions (Howell, 2010). The beta coefficients allow for comparing the relative strength of the predictors within the model. Technically, the higher the beta value the greater the impact of the predictor variable on the criterion variable. Finally, statistical significance for the coefficients was set at $p < .05$.

OLS Residualized Change Model Results

Results in Table 2 at the end of this subsection indicate that the residualized change model produced 5 predictor variables that were statistically significantly related to the number of days the MVC attended primary school at Time 2. As would be expected, primary school attendance at Time 1 is related to primary school attendance at Time 2 ($B = .300$, $\beta = .655$, $p = .000$).

The first research question addressed whether the types of services that PASADA provided the MVC increased their school attendance at Time 2. Among the services provided,

coefficients for school fees ($B = .782, \beta = .118, p = .049$), food assistance ($B = 2.623, \beta = .153, p = .027$), and support meetings ($B = 1.637, \beta = .124, p = .017$) are all positively and statistically significantly related to the number of days the MVC attended school at Time 2. The standardized coefficients indicate that food assistance compared with support meetings and school fees contribute to the highest amount of variation in the number of days the MVC attended school at Time 2. The unstandardized coefficient for food assistance support indicates that MVC who received food services, compared to those who did not, had an average increase of 2.623 days of school attendance, holding all other variables in the model constant. Of the three services provided, school fees contribute to the lowest amount of variation in the number of days the MVC attended school at Time 2.

The second research question addressed whether the socio-demographic characteristics of the MVC and their guardians predicted MVC's Time 2 school attendance. For the MVC's socio-demographic characteristics, only MVC's gender is statistically significant, and it is negatively related to Time 2 school attendance ($B = -.082, \beta = -.127, p = .011$). This finding suggests that compared with female MVC, male MVC attend fewer school days at Time 2. The unstandardized coefficient indicates that, compared to female MVC, male MVC have a .802 decrease in the number of days of school attendance, holding all other variables in the model constant. Surprisingly, none of the socio-demographic characteristics of the MVC's guardians reached statistical significance.

The adjusted R^2 of the residualized change model is .517, indicating that the independent variables in the model account for approximately 52% of the variance in the number of days of school attendance at Time 2.

Table 2. Multiple OLS Regression of Primary School Attendance Controlling for Time 1

	Unstandardized		Standardized	
	<i>B</i>	<i>SE B</i>	β	Sig.
(Constant)	28.458	2.075		.000
Primary School Attendance 1	.300	.027	.655	.000
<i>Service Variables</i>				
School supplies	.251	.772	.021	.746
School uniforms	-.801	.961	-.059	.405
School fees	.782	.395	.118	.049
Food assistance	2.623	1.177	.153	.027
Housing/ shelter	-.470	.742	-.042	.527
Medical services	-.229	.316	-.037	.470
Counseling	-.125	.353	-.020	.723
Home visits	-.586	.415	-.090	.159
Grieving groups	-.938	.535	-.115	.081
Support meetings	1.637	.683	.124	.017
<i>Child characteristics</i>				
MVC Gender (Females)				
Males	-.802	.312	-.127	.011
MVC Age	.028	.065	.022	.671
MVC Type (Full Orphan)				
Maternal Orphan	-.736	.687	-.081	.286
Paternal Orphan	-.643	.626	-.099	.306
Other MVC	-1.171	.692	-.149	.092
Reasons for being an MVC	.145	.208	.041	.485
Guardian relationship to MVC (Grandfather/mother)				
Father to MVC	.211	.563	.034	.708
Sibling to MVC	.791	.964	.046	.413
Extended relative to MVC	.966	.565	.132	.089
Unrelated foster guardian	-.127	.689	-.013	.854
<i>Guardian characteristics</i>				
Guardian gender (Males)				
Female	-.205	.382	-.031	.592
Guardian age	.001	.021	.003	.960
Guardian education level (Never schooled)				
Primary education	-.126	.486	-.020	.796
Post- Primary education	-.256	.561	-.036	.649
Guardian employment status (Unemployed)				
Employed	-.256	.419	-.033	.542
Number of dependents in a family	-.088	.066	-.066	.186

Adjusted $R^2 = .517$. Reference variables are in parenthesis

Variations between Residualized Change and Traditional OLS Analyses

As demonstrated in Table 1, Appendix B, the traditional OLS regression analysis (without the Time 1 measure of school attendance) produced 7 statistically significant coefficients, compared with 4 such coefficients in the residualized change model (excluding the Time 1 variable). In the traditional OLS regression, for the services provided, the coefficients for school fees, grieving groups, and support meetings are significantly related to the number of days the MVC attended school at Time 2. The findings for school fees and attending support meetings are similar between the two models. However, providing food assistance reached statistical significance only in the residualized change model, and attending grieving groups reached statistical significance only in the traditional OLS model, and the coefficient is surprisingly negative.

Compared with the services provided by PASADA, results for the socio-demographics demonstrate more variation between the two models. The residualized change model indicates that only one MVC socio-demographic variable--being male--is related to Time 2 school attendance. On the other hand, results for the traditional OLS regression demonstrate no differences between males and females; however, four other MVC and parent/guardian socio-demographics are related to Time 2 school attendance. That is, maternal and other MVC orphans, compared with full orphans, attended fewer days of school at Time 2; and MVC with an extended relative guardian, compared with a grandfather/grandmother guardian, and a guardian with a primary education, compared with never being schooled, attended more school days at Time 2.

Finally, the amount of the adjusted variation in Time 2 school attendance accounted for by the independent variables is substantially different in the two models. Controlling for Time 1

school attendance, the residualized change model accounts for approximately 52% of the variation in MVC school attendance at Time 2. This amount is more than two fold of the variation in the traditional OLS analysis (adjusted $R^2 = .235$). This indicates that the Time 1 measure, which is assumed to control for unmeasured factors in the model, accounts for an additional 28% of the variation in Time 2 school attendance, compared with the traditional OLS regression.

Summary

The descriptive results indicate that primary school attendance at Time 2 was substantially higher than at Time 1. More than 90% of the MVC received school uniforms and school supplies, while a comparatively far smaller proportion received food assistance (3.4%). Female MVC are over represented in the sample (58%), and paternal orphans (approximately 37%), constitute the majority of the MVC types. Most MVC (46%) lived with their father/mother as guardians, and female guardians constitute two thirds of the guardians. Almost two thirds of the guardians had attained primary school education, and the majority (79%) indicated that they were employed. On average, the MVC's families had approximately 4 people (dependents) who could not provide for themselves.

The multivariate results from the residualized change model indicate primary school attendance at Time 1, school fees, food assistance, and support meetings were statistically significantly related to the number of days the MVC attended primary school at Time 2. Unexpectedly, for the MVC socio-demographic characteristics, only MVC gender is significantly and negatively related to Time 2 school attendance; that is, male MVC attended fewer school days at Time 2 than did female MVC. The adjusted R^2 of the residualized change model was approximately .52.

The traditional OLS regression analysis produced more (7) statistically significant coefficients, compared with 4 such coefficients in the residualized change model. The residualized change model accounted for a much higher variation in MVC school attendance at Time 2 (adjusted $R^2 = .517$) compared to the traditional OLS analysis (adjusted $R^2 = .235$).

CHAPTER 5

DISCUSSION

This chapter first summarizes the descriptive and multivariate study findings. It then discusses the results of the current study with past research and the consistency of the findings with several theoretical perspectives. Next, the limitations and contributions of the study are discussed, followed by several implications for social policy and social work practice. Finally, areas for future research based on the study's findings are suggested.

Summary of the Findings

Descriptive Findings

The results indicate that the average number of days the MVC attended school after receiving services from PASADA for a 2-month period is higher ($M = 35.78$) compared with the school attendance baseline measure ($M = 28.76$). More than 90% of the study respondents received school services, including school supplies and uniforms, and approximately 32% received school fees. On the other hand, receipt of the other two types of services--basic needs and psychosocial support--were generally lower. Although more than half (52.6%) of the MVC received medical assistance, relatively low percentages received housing/shelter (8.5%) and food assistance (3.4%). Receipt of psychosocial support services ranged from a high of 53.4% of MVC receiving counseling to a low of 6% attending support meetings.

Regarding the MVC's socio-demographic characteristics, the study demonstrates that female MVC formed the majority (approximately 58%) of the respondents. The findings further indicate that a substantial proportion (30%) of the MVC had lost both parents (full orphans). Another important finding is that 14% of the MVC stayed with their grandparents, a socio-demographic factor considered to exacerbate the MVC's vulnerability. With regard to the

MVC's guardians' socio-demographic variables, two key findings are that approximately two-thirds of the guardians were females, and almost 80% of the guardians were employed.

Multivariate Findings

Estimates of the effects of the predictors indicate that there are crucial services and one MVC's socio-demographic factor that are significantly associated with the MVC's primary school attendance 2 months after receiving services from PASADA. For instance, food assistance ($B = 2.62, \beta = .153, p = .027$) compared with other significant factors contributed to the highest amount of variation in school attendance at Time 2. Primary school attendance at Time 1, school fees, support meetings, and male gender also significantly predicted the outcome variable. The next sections discuss, interpret, and compare these important findings with other research and consider how they relate to the theoretical perspectives guiding this study.

Discussion of Findings

Descriptive Results

Improved primary school attendance. MVC's primary school attendance after receipt of services from PASADA increased 18%, from a mean of 28.76 to a mean of 35.78, which is equivalent to 89% of expected attendance during this period. Huber and Gould's (2003) definitions of levels or quality of attendance (regular attendees, missed $\leq 15\%$ of school days; irregular attendees, missed $>15\%$ of school days; dropouts at least two months in a row; and never attended) provide a useful benchmark to understand the changes between the baseline and after services measures. Using this scale, the MVC in the current study would be considered "regular attendees" after receiving services from PASADA, as they missed less than 11% of the school days (compared with 28% before receiving services). In addition, if on average, MVC can regularly attend school for approximately 90% of the required school days, it potentially

creates an opportunity for them learn some of the life saving lessons regarding their overall social well-being.

Although merely attending school regularly is insufficient for positive behavior change in the lives of MVC, school attendance is likely a necessary condition. In previous chapters, it was argued that education is critically important for child development. For the MVC, particularly those affected by HIV/AIDS, education is also a tool to empower them to cope with adverse effects of HIV/AIDS in their families, including stigma and discrimination, and to avoid behaviors that increase the risk of HIV infection. According to Bastien (2008), keeping MVC in school regularly helps to keep them away from a host of social ills. These problems include alcohol and substance abuse, early marriage and sexual debut, unwanted or unintended pregnancy, unsafe abortions, sexually transmitted infections (including HIV/AIDS), exploitation, violence, and limited employment prospects.

In addition to school attendance being a significant protective factor preventing MVC from experiencing the previously described risks, it also plays an important role in protecting or reducing the risk of MVC migrating and settling into living in the streets temporarily or permanently in order to survive (Henley et al., 2010). Henley et al.'s (2010) study conducted in Tanzania revealed that compared to "street" children who attended school daily, those who dropped out of school had nearly 8 times higher odds of finding themselves living in the streets permanently. Other studies also demonstrate the importance of school attendance to the previously identified outcomes. Research conducted in Uganda (De Walgue, 2004) indicates a significant association between education and a decreased risk of HIV infection. Other studies in Kenya (Duflo et al., 2006) and in Swaziland (Whiteside et al., 2003) demonstrate the importance of school attendance to delayed sexual activity. Hargreaves et al (2008) also found an

association between school attendance and HIV infection and sexual behavior among young people in rural South Africa. For instance, compared to non-students, students had a lower lifetime number of sexual partners, and among female respondents, fewer students reported having unprotected intercourse during the past year. Male students also were less likely to be HIV positive than their peers not attending school.

Multivariate Results

This subsection first discusses the relationships between the services received by the MVC and their parents/guardians and Time 2 school attendance. This is followed by a discussion of the findings for the relationships between the MVC's and their guardians' socio-demographic characteristics and the outcome variable. Finally, results for the residualized change model are compared with the model results that did not control for Time 1 school attendance.

Services estimates. For the ten services provided by PASADA, the current study found that one of the school related services (school fees), basic needs services (food assistance), and psychosocial support services (support meetings) were positively and significantly related to the number of days the MVC attended school 2 months after receiving services. The study did not find significant relationships between providing MVC with school uniforms and supplies and the number of days of school attendance. These findings are inconsistent with a study using a randomized evaluation in western Kenya (Duflo et al., 2008), which demonstrated that students (including MVC) in school who were provided free uniforms were less likely to drop out. However, it could be argued that even providing support to meet basic needs reduces the overall costs of MVC's education. That is, money that otherwise would be used to provide for basic needs could be used instead to pay for school related expenses such as uniforms and supplies. Taken together, the findings suggest that lowering the cost of education helps to increase the

school attendance of MVC. On the other hand, another research indicates no significant relationships between providing MVC with support, such as school fees, uniforms, and textbooks, and their school attendance (defined as the number of days of school missed in the week preceding the survey) (Nyangara et al., 2009). However, it is possible that methodological differences between the current and this study account for these discrepancies. For example, the Nyangara et al. study was cross sectional and used self-reported data, which cast reasonable doubts about the reliability of the design and validity of the findings.

The previously discussed findings that providing school fees and food assistance increases the school attendance of MVC are supported by family stress and resilience theory (Patterson, 2002). This theory places emphasis on the family's ability to withstand and rebound from disruptive life challenges (Walsh, 2003) that involve dynamic processes to nurture functional adaptation or adjustment against stressor events, thus avoiding crises and other negative outcomes such as MVC's failure to attend school. However, when a family's resources and strengths are overstretched, community support may provide alternative resources for the family to successfully send their children to school. The positive influences of school fees support and providing food assistance are also consistent with the ecological theory, which in this context implies that MVC's successful school attendance involves a dynamic and reciprocal process of interactions between the MVC, other individuals, and the MVC and her or his environmental factors.

The current study's finding on the relationship between MVC attending a support meetings and an increase in their days of school attendance was not supported by a previous study (Nyangara et al., 2009). As discussed above, Nyangara et al.'s study has several methodological problems. However, these current results might be due to the ability of support

groups to assist orphans to cope with the ongoing loss of the deceased parents' support and/or the heavy stigma and discrimination when HIV/AIDS infection is involved. This support in turn assists MVC to attend school more regularly (UNICEF et al., 2004).

The positive influence of support meetings also is consistent with the current study's assumption that the MVC would need not only school materials support and basic needs such as food and housing, but also adequate psychosocial support to enable them to attend primary school. The family stress perspective (Patterson, 2002) best elaborates the role of psychosocial support meetings from a strengths perspective. This perspective explains how the MVC in the face of severe adversity and distress are able to maintain or enhance their school attendance through involvement in support meetings. The success of support meetings also finds support in the FAAR model (McCubbin and Patterson, 1983). The model perceives these meetings as an intervention to mobilize MVC's and PASADA's resources to assist MVC's adjustment to attend school more regularly.

Characteristics of MVCs and guardians. Unexpectedly, only one of the 16 socio-demographic characteristics of the MVC and their parents/guardians, MVC's gender, was statistically significantly related to Time 2 school attendance. The coefficient indicates that female MVC have better school attendance compared to male MVC. These results are inconsistent with the expectation that female MVC would attend school less frequently than males, because girls are more likely to be required to do domestic chores as a result of illness and death of their parents (Case et al., 2004). In addition, the results do not support the feminist perspective that suggests that female MVC and maternal orphans generally have poorer educational outcomes compared to male MVC and paternal orphans. However, there is still a

need to consider these results carefully and pay attention to the social and cultural contexts in which they occur.

The results of the positive relationship between being female and school attendance could be attributed to the possibility that female MVC lived in certain types of households/families that were more likely to assist them in school or they were over represented in receiving PASADA services. It is also possible that PASADA pays particular attention to female MVC, because social workers believe that females are more vulnerable than males. This might have resulted in the disparity between the days in school attendance between males and females.

Also the current study, unlike previous research (Bastien, 2008; UNICEF, 2006; Ainsworth & Filmer, 2002; Nyamukapa & Gregson, 2005), found none of the MVC's guardians' socio-demographic characteristics to be significantly related to MVC's school attendance 2 months after receiving PASADA services. However, evidence of a lack of significant associations between these variables and the outcome variable does not suggest ignoring them, but in fact suggests the need for careful considerations of such factors. At least four of these insignificant findings, which will be discussed in a subsequent section, are the result of controlling for school attendance at Time 1.

Residualized Change Model

Controlling for Time 1 school attendance (unmeasured factors in the model), the residualized change model accounted for more than a quarter (28%) of additional variation in Time 2 school attendance compared with the traditional OLS regression. This fairly significant increase in the adjusted R-squared value and the differences in the statistically significant variables clearly supports the choice and application of the residualized change model. Notably, the traditional OLS regression model produced five significant coefficients (grieving groups,

maternal orphan, other MVC, extended relative to MVC and guardian's primary education) that were statistically insignificant in the residualized change model. The increase in R square in the first residualized model indicates that the number of days of school attendance prior to receipt of services is a strong predictor of future attendance. Therefore, it also suggests the need for providing services early in the MVC life to enhance school attendance.

Differences between the two models in the statistical significant and size of some of the coefficients suggest selection bias in the second model. Other factors are accounting for statistically significant relationship in one model, but not in the other. Notably, a significant negative relationship between attending grief support groups and MVC's school attendance was found only in the traditional OLS model. It is unlikely that attending grieving groups increases the MVC's vulnerability to attending fewer days of schools, unless they miss school because they attend these groups. More likely these findings are the result of selection bias; that is, MVC who have not completed the grieving process after the loss of a parent are more likely to attend a grieving group and also to miss school. The residualized change model, which controls for unmeasured factors such as unresolved grieving, demonstrates a negative but nonsignificant relationship between attending a grief group and Time 2 school attendance.

Limitations

This research has a number of limitations. Theoretically, the residualized change model can adjust for selection bias by adjusting the average influence of the baseline measure on the Time 2 measure of MVC's primary school attendance. That is, the assumption is made that the baseline measure controls for other factors, such as values, motivation, MVC's intelligence, that were omitted from the model but correlate with other independent variables (e.g., receipt of services) and also predict school attendance at Time 2. It is noteworthy to recognize that the

adjustment for selection bias only holds under the assumption that the unobserved factors on the baseline measure have an identical effect on the follow-up measure both for MVC who receive the services and those who do not and for those MVC and their guardians with certain socio-demographic characteristics (Berger et al., 2009).

In addition, the residualized change model does not account for changes in the socio-demographic characteristics (e.g., guardian employment), that might occur between Time 1 and Time 2 and also affect the final outcome. In the absence of a randomized control design, this study can only make cautious assumptions concerning the causal effects of the services provided and male gender on the MVC's primary school attendance.

In other studies conducted with orphans (e.g., Ainsworth et al., 2005), critical variables such as how long a child has been an orphan and age when loss or illness occurred also have been examined. This study did not include these independent variables, in addition to others such as the economic resources of the family, because not all MVC are orphans, and the data were not available in the PASADA dataset.

Similar to the household samples of the studies reviewed in this dissertation, the current study also excluded vulnerable children who lived either in the streets or in institutional foster centers and those hidden in domestic work settings. The exclusion of these children may have underestimated the educational risks the MVC face, and the results might not apply to them.

The current study only tracked the MVC's school attendance for 40 days after services were received. This limits the ability of the research to determine whether the benefits of the services provided to MVC's school attendance can be sustained. In addition, the study could not establish other long-term educational, behavioral, and psychological impacts of improved MVC's school attendance that other studies have found.

Finally, because the data came from one agency in the Dar-es-salaam region, the study findings cannot be generalized to other MVC in Tanzania or in other countries.

Implications

Despite the above limitations, findings of the current research provide useful evidence necessary for drawing important implications for social policy decision makers, community services providing agencies, and social work practitioners to help Tanzanian MVC to increase their school attendance.

Social Policy Implications

As discussed previously, in Tanzania, primary school attendance is compulsory and supposedly free for all children in the primary school age bracket. The policy is designed to provide universal access to primary education to all children in the country, and it was certainly successful in the mid 1980s (United Republic of Tanzania, 1995). There are, however, additional expenses that parents/guardians must incur to send their children to school, including buying school uniforms and stationeries (Mamdani et al., 2002). Furthermore, the policy does not provide adequate coverage of support to the MVC who have educational and general life needs that are significantly different from those of non-MVC. These broader policies need to provide for support with regard to MVC's preparedness to attend school as required.

The findings that providing school fees, food assistance, and support meetings significantly assisted the MVC to improve their school attendance have important policy implications for MVC care and intervention. Currently the national education policy is not explicit regarding the critical educational needs of the MVC, such as provision of psychosocial support and lowering the cost of MVC's education by providing school fees and food assistance.

The current results suggest that the Tanzanian Universal Primary Education policies

should responsively and specifically define the regulations and needs of the MVC. As previously established, many MVC have lost parents and most MVC reside with families living in absolute poverty, including shortage of food and the inability to pay school fees. This reduction of parental support and lack of resources compromise the MVC's socio-emotional well-being and the families' ability to sufficiently care for the MVC and to afford the costs of their education. This research suggests the need for social and educational policies that directly provide funds or supports to pay school fees and to provide food assistance and mental health services, specifically in the form of support meetings, to increase the school attendance of MVC.

Although not the focus of the current study and as discussed previously, other research has demonstrated the multiple benefits accrued from school attendance, which could be enhanced by these policies. When attending school, MVC not only learn class material, but also learn important life skills and avoid destructive behaviors. Studies (Bastien, 2008; De Walgue, 2004) have confirmed that MVC can avoid plunging themselves into further behavioral and unhealthy problems if they go to school.

Practice Implications

The findings also suggest important implications for social workers and agencies providing services to MVC that may empower them to successfully attend school.

First, an important implication for social work practice is to advocate for educational policies that assist the MVC in paying school fees, providing food assistance, and increasing availability of support meetings.

Second, the positive relationships between MVC receiving school fees, food assistance, and support meetings and their improved school attendance suggest important refined assessments. However, these findings and suggestions do not negate the importance of

examining other MVC's needs. For example, assessment might determine that for some MVC a lack of school supplies, school uniforms, health care, and housing/shelter or psychosocial problems not easily treated with support group meetings might be influencing low school attendance, and providing relevant interventions would be appropriate.

Third, the study findings suggest that practitioners and agencies that provide school fees, food assistance, and support meetings will likely increase MVC's primary school attendance. Other research suggests that providing support services assists MVC, particularly older orphans who often have to take on parental roles following their parents illness or death, to cope with psychological problems such as hopelessness, feelings of unhappiness, frustration, and financial strain (Chitiyo et al., 2008). Addressing these psychological problems could empower the MVC to improve their school attendance. In the case where the MVC have psychological problems or appear to need additional psychosocial support, social workers should provide support meetings. Learning from PASADA experiences, support meetings that meet twice monthly provide a forum that may allow the practitioners to regularly stay in touch with the MVC, gaining insight into their problems and building strong relationships.

Fourth, for the MVC's socio-demographic characteristics, only male gender was significantly and negatively associated with school attendance after the 2-month service period. That is, male MVC had lower rate of school attendance than female MVC. This indicates the need for practitioners to pay particular attention to male MVC to determine the reasons for their apparent increased vulnerability to missing school. In addition, practitioners' assessment might find differential reasons that impede males versus females from attending school, which would indicate differential treatment plans. For instance male MVC may be more involved in school

truancy than the female MVC; therefore, practitioners need to carefully understand these patterns.

Fifth, Controlling for Time 1 school attendance resulted in a larger Adjusted R^2 value, which implies that it was a strong predictor of the outcome variable. This suggests for the need for early interventions in MVC education support programs.

Future Research

The previous literature review and the discussed methods, findings, limitations, and implications of the current study, suggest possible directions for future research. First, the residualized change model does not substitute for randomization. In the absence of a randomized control design, this study can only make cautious assumptions concerning the causal effects of the services provided and male gender on the MVC's primary school attendance. Future research might conduct a randomized investigation that employs control and intervention groups to confirm the current findings.

Second, the current research acknowledges other important variables such as how long a child has been an orphan, age when the loss or illness occurred, the families' economic assets, and MVC's and their guardians' HIV status, that were not addressed in the current research but might be related to MVC's school attendance. Thus, further research needs to employ the chronosystem of the ecological perspective to understand how the services provided influence the MVC's primary school attendance over changing degrees and forms of MVC vulnerability. Moreover, future research needs to identify the families economic well-being and MVC's and their guardians' HIV/AIDS status so that we can understand how these critical factors are related to the MVC's chances and abilities to access primary school education.

Third, exclusion of other vulnerable children, particularly those who lived either in the streets or in institutional foster centers and those hidden in domestic work settings, may have underestimated the educational risks the MVC face. Future research needs to plan and ensure that these MVC's life experiences are represented in studies that aim to inform policies and programs that also concern their lives.

Fourth, because the current study only tracked the MVC's school attendance for 40 days after services were received, future research might determine if the gains in MVC's school attendance could be maintained after the 40-day period. It would also be interesting for future research to investigate whether the gains in school attendance actually result in any meaningful differences in the MVC's lives, such as completing their education and improved behavioral and other psychological outcomes.

Summary and Contributions

Using a sample of MVC who received services from the Tanzanian faith-based community agency, PASADA, the current research investigated two broad questions. First, it determined which of ten support services that PASADA provided to the MVC during a 2-month period predicted the number of days they attended primary school 40 days later, while controlling for a previous measure of school attendance. Second, the study examined which MVC's and their guardians' socio-demographic characteristics predicted the number of days the MVC attended primary school. Despite the previously discussed limitations, this research makes several contributions to understanding the support services and socio-demographic characteristics that are associated with a later measure of MVC's primary school attendance.

First, this is the only known study in the region of East Africa, particularly in Tanzania, that employed longitudinal data and a residualized change model to evaluate the support services

received by MVC and the socio-demographic characteristics that improve MVC's primary school attendance. Second, findings of this study are based on PASADA agency data and the MVC's school attendance records, which are much more reliable than relying on participants' reports, as has been done in past studies.

Third, the results reveal that school fees, food assistance, and support meetings are significantly related to MVC's school attendance after receiving services from PASADA for a 2-month period. These findings suggest that it is insufficient to provide only school related support to increase MVC's school attendance, but requires a holistic approach to providing support to the MVC. In addition, this study supports the UN contention that poverty that creates child hunger, which in turn can prevent children from attending school regularly, and suggests that providing food assistance can improve the MVC's school attendance.

Fourth, the unexpected relationship between male gender and attending fewer days in school suggests the need to examine not only female vulnerability to adverse school outcomes. The lack of relationships between the other socio-demographic factors and MVC's school attendance, which are inconsistent with some past studies, also are noteworthy. Considering the serious methodological flaws in most of the past studies, those findings must be considered with more caution. In addition, the findings of the current study requires us to rethink the prevailing assumptions regarding specific socio-demographic characteristics as being responsible for increasing the risk of poor educational outcomes for MVC. More likely, other factors that are correlated with these socio-demographic variables and also with school attendance account for these relationships.

Fifth, as previously discussed, the current findings provide important social work and educational policy implications. Finally, as described previously, the study offers areas for future

research to identify the support services and socio-demographic factors that can assist the most vulnerable children in Tanzania, and possibly similar countries, to enhance their educational outcomes.

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APPENDIX A

CONSENT LETTERS

Child Assent Form (8 years and older)

Date:

Dear Child:

My name is Naftali Bernard Ng’ondi. I am a student and Research Investigator from the School of Social Work at the University of Illinois at Urbana-Champaign, United States of America. I would like to include you and other children who go to PASADA in my research. I want to know if the help PASADA gives to children helps them to attend school more often.

I am asking if it is okay for PASADA to give me some information about you. I want to find out the kinds of help PASADA gave you, your sex, age, who you are living with, reasons for going to PASADA, and the name of your school. If PASADA does not know the name of your school, I will ask your parent or guardian. I will also go to your school and ask how many days you attended.

You can tell me “no” if you don’t want me to talk with PASADA or your school. I will ask PASADA and your school for the information only if you and your parent or guardian says “yes.” If you say “yes” and then change your mind, you can let me know. I will then take your information out of my research. Whatever you decide, nothing bad will happen to you. PASADA and your school will not even know that we talked. If you say “yes” I will keep the information from PASADA and your school a secret. That means nobody will know that the information is about you.

If you have any questions or worries about the research, you can call me at 255 754 497122 or email me at nngondi2@illinois.edu.

Sincerely,

Naftali Bernard Ng’ondi
Investigator

The Investigator read this form to me. I understand what it says. The Investigator answered my questions. If I agreed, I made up my own mind. I received a copy of this form for me to keep.

I do/do not (circle one) agree that the Investigator can get the information on me from PASADA and my school.

(Print) Child's name

Child's signature

Date

Fomu ya Ridhaa ya Mtoto (Miaka 8 na zaidi)

Tarehe:

Mpendwa Mtoto:

Jina langu naitwa Naftali Bernard Ng'ondi. Mimi ni Mwanafunzi na Mtafiti kutoka Shule ya Ustawi wa Jamii katika Chuo Kikuu cha Illinois huko Urbana-Champaign, nchini Marekani. Ninakuomba wewe na watoto wengine wanaokwenda PASADA kushiriki katika utafiti wangu. Ninataka kujua endapo msaada mnaopata kutoka PASADA unawasaidia watoto kuwa na mahudhurio mazuri shuleni. Ninataka kujua endapo msaada wa PASADA unawasaidia watoto kuwa na mahudhurio mazuri shuleni.

Ninataka kujua endapo ni vyema kwako PASADA wanipatie baadhi ya taarifa zako. Ninataka kujua aina ya msaada uliopewa na PASADA, jinsia na umri wako, unaishi na nani, sababu za kuhitaji msaada wa PASADA na jina la shule unayosoma. Endapo PASADA hawajui unasoma wapi, nitamuomba mzazi au mlezi wako. Vile vile nitakwenda shuleni kwako kutaka kujua siku za mahudhurio yako.

Unaweza kuniambia “hapana” iwapo haupendi nizumgumze na PASADA au shule yako. Nitaomba taarifa kutoka PASADA na shuleni kwako iwapo wewe na mzazi au mlezi wako “ndiyo” tunakubali. Kama utasema “ndiyo” na baadaye ukabadili mawazo yako, unaweza ukanijulisha. Baadaye nitaziondoa taarifa zako kutoka kwenye utafiti wangu. Kwa uamuzi wowote utakao chukua, hakuna jambo baya litakalokutokea. PASADA na shule yako hawatajua kama mimi na wewe tumeongea. Endapo utakubali nitazitunza kwa siri taarifa zako kutoka PASADA na shuleni kwako. Hii ina maana kuwa hakuna atakaejua kuwa taarifa zimetoka kwako.

Endapo una maswali yoyote au mashaka juu ya utafiti huu, unaweza kunipigia simu namba 255 754 497122 au kuniandikia barua pepe kuwa anuani ya nngondi2@illinois.edu.

Mwaminifu,

Naftali Bernard Ng'ondi
Mtafiti

Mtafiti amenisomea fomu hii. Ninaelewa inasema nini. Mtafiti amenijibu maswali yangu. Kama nimekubali, ni kwa hiari yangu mwenyewe. Nimepewa nakiri ya fomu hii kuitunza.

Mimi nakubali/sikubali (zungushia jibu moja) kuwa Mtafiti apewe taarifa kutoka PASADA na shuleni kwangu.

Jina la Mtoto

Saini ya Mtoto

Tarehe

Child Assent Form (7 years old)

Date:

Dear Child:

My name is Naftali Bernard Ng’ondi. I am a student and Research Investigator from the School of Social Work, University of Illinois at Urbana-Champaign, United States of America. I am asking you and other children who go to PASADA to be part of my research. I want to know if getting help from PASADA helps children to go to school more often.

I am asking you if it is okay for PASADA to tell me some things about you. I will ask PASADA to tell me things like the kinds of help they gave you. I will also go to your school and ask how many days you went.

You do not have to say “yes” to what I am asking you. If you don’t want me to talk with PASADA or your school, just say “no.” Nothing bad will happen to you whether you say “yes” or you say “no.” If you say “yes,” I will keep whatever PASADA and your school tell me a secret. That means no one will find out what PASADA or your school told me came from you.

If you have any questions or worries about what I told you, please call me at 255 754 497122 or email me at mngondi2@illinois.edu. You can also get a hold of me if you change your mind about saying “yes.”

Naftali read this form to me. I understand what it says. Naftali answered my questions. If I said “yes,” I made up my own mind. Naftali gave me a copy of this form to keep.

I do/do not (circle one) agree that Naftali can get my information from PASADA and my school.

(Print) Child’s name

Child’s signature

Date

Fomu ya Ridhaa ya Mtoto (Miaka 7)

Tarehe:

Mpendwa Mtoto:

Jina langu naitwa Naftali Bernard Ng'ondi. Mimi ni Mwanafunzi na Mtafiti kutoka Shule ya Ustawi wa Jamii katika Chuo Kikuu cha Illinois huko Urbana-Champaign, nchini Marekani. Ninakuomba wewe na watoto wengine wanaokwenda PASADA kushiriki katika utafiti wangu. Ninataka kujua endapo msaada mnaopata kutoka PASADA unawasaidia watoto kuwa na mahudhurio mazuri shuleni.

Ninataka kujua endapo utakubali PASADA waniambie mambo fulani kuhusu wewe. Nitawaomba PASADA waniambie mambo kama aina ya msaada waliokupatia. Vile vile nitakwenda shuleni kwako kuwauliza ni siku ngapi umehudhuria.

Si lazima unikubalie ninachokuuliza. Endapo hutaki niongee na PASADA au shule yako, niambie tu hapana. hakuna jambo baya litalokupata iwapo utakubali au kukataa. Kama utakubali nitazitunza kwa siri taarifa watakazo nipa PASADA na shule yako. Hii ina maana kuwa hakuna atakaejua kuwa taarifa walizonipa PASADA au shule yako zimetoka kwako.

Endapo baadaye utakuwa na maswali kuhusu chochote nilichokueleza unaweza ukawasiliana na mimi kupitia simu namba (255 754 497122) au barau pepe hii (nngondi2@illinois.edu). Unaweza vile vile kuniambia ikiwa utabadili mawazo yako juu ya ruhusa uliyonipa.

Naftali amenisomea fomu hii. Ninaelewa inasema nini. Naftali amenijibu maswali yangu. Kama nimesema nakubali, ni uamuzi wangu mwenyewe. Naftali amenipa nakiri ya fomu hii kuitunza.

Mimi nakubali/sikubali (zungushia jibu moja) kuwa Naftali apewe taarifa kutoka PASADA na shuleni kwangu.

Jina la Mtoto

Saini ya Mtoto

Tarehe

Parent/Guardian Informed Consent

Date:

Dear Parent or Guardian:

Naftali Bernard Ng'ondi is a PhD student and Research Investigator. Mary Eamon is Associate Professor and Responsible Project Investigator. Both come from the School of Social Work at the University of Illinois at Urbana-Champaign (UIUC), United States of America. We are conducting a research project. We are trying to figure out if certain characteristics of children and their parents or guardians and the services they received from PASADA increase the school attendance of primary school children. The Investigator would like to get some information on you and your child and on other families that received services from PASADA.

The information that the Investigator would like to get from PASADA include the types of services you received, the child's sex, age, reasons for receiving services, and the name of the school that your child attended before and after receiving services for two months. The Investigator will also collect information from PASADA on your sex, age, education, if you are employed, and the number of dependents in your family. If PASADA does not have the name of your child's school, the Investigator will ask you to give the name. The Investigator will also ask your child's school how many days he or she attended. Information from health records will not be collected.

Agreeing to let the Investigator get the information from PASADA and to give the Investigator the name of your child's school is up to you. You may change your mind about giving permission any time while the Investigator is gathering this information. The Investigator will also ask your child if it is all right to get the information on him or her. The Investigator will get your child's information only after you and your child give permission. He will get your information from PASADA only after you give permission. If you or your child decides not to give this permission, or take away your permission, you will not be harmed in any way. For example, your decision will not hurt your or your child's relationship with PASADA and the school or your child's school grades.

Giving the Investigator the name of your child's school and giving permission for him to get the information from PASADA should not cause you any more danger than you usually run into every day. You and your child will not gain anything from this research. However, we hope the research will help PASADA provide better services to families.

The Investigator will keep the information received from PASADA and the school private. Only a number will be linked to this information. The Investigator will put the sheet that links you and your child's name to the number into a locked cabinet. Right after all of the information is collected, the Investigator will destroy the sheet. The Investigators will share the results of the research with PASADA, at a conference meeting, and in an article. When the Investigator does all of these things, no one will ever be able to tell if you or your child gave information for the study.

If you have any questions about the research, please contact us (Mary or Naftali) using the information below. To get information on the rights of people who participate in research, you can contact the Tanzania Commission for Science and Technology by telephone (255 22 2700745/6) or e-mail (Rclearance@costech.or.tz). You can also contact the Institutional Review Board (IRB) at UIUC by telephone (000-1-217-333-2670) or by e-mail (irb@uiuc.edu). You can call the IRB free if you tell them you are participating in research.

Sincerely,

Naftali Bernard Ng'ondi
Investigator
255 754 497122 (Phone)
nngondi2@illinois.edu

Mary Keegan Eamon
Responsible Project Investigator
000-1-217-244-5238
eamon@illinois.edu

This consent form was read to me, and I understand it. The permission that I give is voluntary. I will receive a copy of this consent form to keep.

I do/do not (circle one) give permission for the Investigator to get the previously described information on me.

I do/do not (circle one) give permission for the Investigator to get the previously described information on _____ (name of the child) and agree to give the Investigator the name of my child's school, if necessary.

Name of Parent or Guardian

Parent or Guardian's signature or thumb stamp

Date

Ridhaa Kamili ya Mzazi/Mlezi

Tarehe:

Mpendwa Mzazi au Mlezi:

Naftali Bernard Ng'ondi ni mwanafunzi wa Shahada ya Uzamivu na Mtafiti. Mary Eamon ni Profesa na ndie Mtafiti Mkuu. Wote tunatokea Shule ya Ustawi wa Jamii katika Chuo Kikuu cha Illinois (UIUC) huko Urbana-Champaign, nchini Marekani. Tunafanya Utafiti ili kuelewa iwapo sifa za watoto wa umri wa shule za msingi, wazazi/ walezi wao, na huduma za msaada walipokea kutoka PASADA vinaboresha mahudhurio ya watoto shuleni. Mtafiti anaomba kukusanya taarifa kuhusu wewe na mwanao, pamoja na taarifa za watoto wengine wapatao 250 wanaopata msaada.

Taarifa ambazo Mtafiti anapenda kukusanya kutoka PASADA zinahusu aina ya msaada ambao wewe na mwanao mmepokea, jinsia na umri wa mtoto, sababu za kupokea msaada, na jina la shule ambayo mwanao alisoma kabla na baada ya kupokea msaada kutoka PASADA kwa kipindi cha miezi miwili. Vile vile Mtafiti atakusanya taarifa kutoka PASADA kuhusu jinsia na umri wako, kiwango cha elimu yako, hali ya ajira yako, na idadi ya watu wanaokutegemea katika familia yako. Pia, kama jina la shule ambayo mwanao alisoma kabla na baada ya kupokea msaada halipatikani kutoka PASADA, utaombwa kutoa taarifa hiyo. Mtafiti atauliza shule ambayo mwanao anasoma/ alisoma idadi ya siku mwanao alizohudhuria shuleni. Mtafiti hatakusanya taarifa za afya yako au mwanao.

Kutoa ridhaa kwa Mtafiti ili kukusanya taarifa zinazombwa kutoka PASADA na kumpa Mtafiti jina la shule ya mwanao, kama itabidi, ni hiari yako kabisa. Muda wowote wakati Mtafiti anakusanya taarifa hizi, unaweza kubadili uamuzi wako. Mtafiti vile vile atamwomba mwanao iwapo ni vyema kukusanya taarifa zinazomuhusu yeye. Mtafiti atachukua taarifa za mwanao pale tu baada ya kupokea ridhaa kutoka kwako wewe na mwanao, pia mtafiti atachukua taarifa zako kutoka PASADA pale tu baada ya kupokea ridhaa yako. Endapo wewe au mwanao mtaamua kutokutoa ridhaa au kufuta ridhaa ya kuchukua taarifa zinaombwa, hamtapata matatizo yoyote. Hususan, uamuzi wako hauta athiri uhusiano wenu na PASADA, shule anayosoma, au hali ya mwanao shuleni au alama zake za masomo.

Kumpatia Mtafiti jina la shule anayosoma mwanao na kumpa ridhaa ya yeye kupata taarifa kutoka PASADA haitakuweka wewe au mwanao katika hatari yoyote zaidi ya zile tunazokutana nazo katika maisha ya kila siku. Wewe na mwanao haitegemewi mkapata faida binafsi kutokana na utafiti huu. Lakini matokeo ya utafiti yanategemewa kuisaidia PASADA ili kutoa huduma bora zaidi kwa watoto na familia zao.

Mtafiti atazitunza taarifa atakazokusanya katika utafiti huu kwa usiri mkubwa. Ni namba ya utambulisho pekee itakayoweza kuunganishwa na taarifa zitazokusanywa. Mtafiti atalitunza Jedwali linalounganisha jina lako na la mwanao na namba ya utambulisho katika kabati linalofungwa kwa kufuri. Punde tu taarifa zote zitakapo kusanywa, jedwali litachomwa moto. Mtafiti anaweza kuwasilisha matokeo ya utafiti huu kwa PASADA, katika mkutano, na kuchapishwa katika Majarada. Endapo Mtafiti atafanya hivyo, hakuna mtu atakae tambua kuwa wewe au mwanao mmetoa taarifa katika utafiti huu.

Endapo una maswali yoyote au hoja kuhusu huu utafiti, tafadhari wasiliana nasi (Mary au Naftali) kupitia njia zilizo onyeshwa hapo chini. Ili kupata taarifa juu ya haki za washiriki katika utafiti, unaweza ukawasiliana na Tume ya Sayansi na Teknolojia Tanzania kwa simu namba (255 22 2700745/6) au barua pepe (Rclearance@costech.or.tz). Unaweza pia ukawasiliana na “Institutional Review Board (IRB)” ya UIUC kwa simu namba (000-1-217-333-2670; au barua pepe irb@uiuc.edu). Unaweza ukapiga simu bila ya gharama kwenda IRB endapo utajitambulisha kuwa wewe ni mshiriki katika utafiti huu.

Mwaminifu,

Naftali Bernard Ng’ondi
Mtafiti
255 754 497122 (Phone)
nngondi2@illinois.edu

Mary Keegan Eamon
Mtafiti Mkuu
000-1-217-244-5238
eamon@illinois.edu

Nimesomewa na kuilewa fomu ya ridhaa hapo juu. Ridhaa ninayoitoa ni kwa hiari yangu. Nitapewa nakili ya fomu ya ridhaa hii kwa ajili ya kumbukumbu zangu.

Mimi nakubali/sikubali (zungushia jibu moja) kumpa mtafiti ridhaa yangu ili akusanye taarifa zangu kama zilivyoielezwa awali.

Mimi nakubali/sikubali (zungushia jibu moja) kumpa mtafiti ridhaa yangu ili akusanye taarifa kama zilivyoielezwa awali za _____ (jina la mtoto) na ninaridhia kumtaja mtafiti jina la shule anayosoma mwanangu, endapo itabidi.

Jina la Mzazi au Mlezi

Saini au Dole Gumba la Mzazi au Mlezi

Tarehe

APPENDIX B

TABLE

Appendix Table 1. Multiple OLS Regression of Primary School Attendance

	Unstandardized Coefficients		Standardized Coefficients	Sig.
	<i>B</i>	<i>SE B</i>	β	
(Constant)	36.269	2.454		.000
<i>Service Variables</i>				
School supplies	.688	.970	.057	.479
School uniforms	-1.936	1.202	-.142	.109
School fees	1.992	.477	.300	.000
Food assistance	1.100	1.471	.064	.456
Housing/ shelter	-.384	.933	-.034	.681
Medical services	.270	.394	.043	.493
Counseling	-.835	.436	-.133	.057
Home visits	-.779	.522	-.120	.137
Grieving groups	-1.418	.671	-.174	.036
Support meetings	2.705	.851	.206	.002
<i>Child characteristics</i>				
MVC Gender (Females)				
Males	-.057	.383	-.009	.882
MVC Age	-.003	.081	-.002	.975
MVC Type (Full Orphan)				
Maternal Orphan	-1.766	.857	-.195	.041
Paternal Orphan	-.978	.787	-.151	.216
Other MVC	-2.381	.860	-.303	.006
Reasons for being an MVC	.426	.259	.121	.102
Guardian relationship to MVC (Grandfather/mother)				
Father to MVC	.429	.708	.069	.545
Sibling to MVC	.967	1.213	.056	.426
Extended relative to MVC	1.581	.707	.216	.026
Unrelated foster guardian	1.428	.848	.151	.094
<i>Guardian characteristics</i>				
Guardian gender (Males)				
Female	-.822	.476	-.125	.086
Guardian age	.002	.027	.007	.930
Guardian education level (Never schooled)				
Primary education	1.310	.590	.204	.027
Post- Primary education	1.182	.687	.165	.087
Guardian employment status (Unemployed)				
Employed	-.609	.526	-.079	.249
Number of dependents in a family	-.030	.083	-.022	.723

Adjusted $R^2 = .235$. Reference variables are in parenthesis.