A STUDY ON THE NATURE OF CARE GIVEN TO CHILDREN LIVING WITH HIV/AIDS IN CHILDRENS' HOMES IN NAIROBI, KENYA

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2006

Mutuvi, Mwikali
A study on the nature of care given to
DECLARATION

I, Kavutha Mwikali Mutuvi, declare that this thesis is my original work and has not been presented for a degree in any other university or for any other award.

Signed: [Signature]
Date: 19/04/2006

SUPERVISORS APPROVAL

We confirm that the work reported in this thesis was carried out by the candidate under our supervision.

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DEDICATION

To my parents Mwende and Mailu Mutuvi without whose love and affection I would not be where I am today. To all those children living with HIV/AIDS whose interest I hereby seek to advance reassuring them that there is hope at the end of the tunnel.
ACKNOWLEDGEMENTS

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<td>Acquired Immune Deficiency Syndrome</td>
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<td>ART</td>
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<td>HAART</td>
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ABSTRACT

HIV/AIDS is a public health concern worldwide. In Kenya, there are approximately 2.2 million Kenyans infected with HIV/AIDS. UNAIDS estimates that 5-10% of the existing HIV/AIDS cases are children below 14 years of age and that there are currently 1.6 million children orphaned by HIV/AIDS in the country. The Kenyan social and community structure has institutions that provide care and support to these orphaned and vulnerable children. These institutions include children's homes and orphanages that provide nutritional, medical, psychosocial and physical care to the orphaned and vulnerable children. The institutions need to care for the children totally in each aspect of care. Despite this, there is scanty information on the institutional care provided to the CLWHA. A cross-sectional study was carried out in five children's homes in Nairobi that care for CLWHA. The general objective of the study was to determine the care given to children living with HIV/AIDS in the children's homes in Nairobi and specifically to determine the medical care and nutritional care given; and to determine the relationship between the medical and nutritional care provided and the children's health status. Qualitative data was obtained from key informant interviews and desk reviews while quantitative data was obtained from the pre-tested structured questionnaires. Results showed that double orphans formed the biggest proportion (91%) of CLWHA in homes and finance was the major (100%) challenge in managing most of the homes and all (100%) of the children (n = 133) had regular medical attention. There were associations between medical attention and incidence of opportunistic infections like for Tuberculosis, there was a significant relationship between its incidence and intake of some ARV's like Zidovudine, Lamivudine and 3TC (Fishers = 0.01; df = 1), \( \chi^2 = 13.37, p=0.000, df=1 \) and \( \chi^2=16.97, p=0.000, df=1 \) respectively. Children who received medical care were less likely to have opportunistic infections. Diarrhoea incidence was independent of the administration of ARVs to the CLWHA. Skin infections were common among children using ARVs. Out of the 13 ARV's administered, use of six of them (46%) had a positive significant relationship to the incidence of skin infections as compared to only 20% of the ARV's having significant relationship to the incidence of oral thrush and none of the ARV's having significant relationship to the incidence of diarrhoea. This concluded that management of diarrhoea would best be handled nutritionally. It is surmised that skin infection was caused by some of the ARVs. The overall picture indicates that ARVs were less likely to culminate with gain in body weight and therefore that nutrition plays a more significant role in decreasing the incidence of disease among CLWHA as compared to the role ARV's play. The government needs to put up policies in place that will ensure that those taking care of CLWHA pay greater emphasis to the childrens nutrition status in order to boost their immune system thus preventing incidences of opportunistic infections and diseases. There is also need for the government to have all homes register with them and the government officials visit the homes and ensure the care and support given to the CLWHA is specific to their needs and meets the children's needs.
CHAPTER ONE: INTRODUCTION

1.1 Background Information

The first case of HIV/AIDS in Kenya was reported in 1984. At the time, HIV prevalence was very low in Kenya and has been increasing at an alarming rate. Presently, it is estimated that the number of people living with HIV in Kenya includes 1.1 million adults between 15 and 49 years, another 60,000 age 50 and over, and approximately 100,000 children. (ROK, 2005).

At the end of 2001, UNAIDS estimated the number of HIV/AIDS orphans (0-14 years) living in Kenya to be 890,000 and the number is projected to increase to 1.5 million by 2005 (UNAIDS, 2002).

Mother-to-child transmission (MTCT) accounts for 30% of HIV/AIDS transmission rates. In 1999, there were 78,000 HIV positive children (0-14 years) in Kenya and by 2002 there was a total of 22,000 million HIV positive children in the country (Kenya National HIV/AIDS Strategic Plan 2002 - 2005). These children experience a multitude of physical ailments, compounded by psychological, emotional and spiritual problems (Mandell, 2000). These children need palliative care which is defined as the active total care of patients whose disease no longer responds to curative treatment (Doyle, 1999). Control of pain, of other symptoms and of psychological, social and spiritual problems is paramount and the goal of palliative care is to achieve the best quality of life for the patient and their families (Charles et al., 2002). For children, palliative care is an integral part of the spectrum of care and is not limited to the terminal stage of the disease (Gibbon, 2000).
In Kenya, many orphaned children end up in children’s homes and orphanages throughout the country. These institutions offer care at different levels to the children. It is estimated that there are 100,000 children living in these institutions (ROK, 2003).

1.2 Problem Statement and Justification

It is estimated that 220,000 Kenyan children are HIV positive and the number is steadily increasing (UNAIDS, 2002). Many of these children are kept in children’s homes once their parents and guardians succumb to HIV/AIDS. The children’s homes give these abandoned or orphaned children the care needed to cope with HIV/AIDS. The care given to these children should meet the palliative care requirements. There is need to carry out a study in the children’s homes to determine whether or not the care given meets the special requirements of the children that include nutritional needs, medical needs, physical needs and psycho-social needs. In these institutions, there is an increased burden to adequately provide for the children (Clive, 2000).

This study was carried out to assess if the care given to the OVC’s meets their special and unique needs. There was no cited literature showing any study on the CLWA living in the children’s homes that had been done. Despite the importance of these institutions that care for the Orphaned and Vulnerable children (OVC) in a region where millions of children are orphaned, few of them had been assessed to establish whether or not their objectives in reference to the children’s lives had been achieved.

The findings from the study have been given as recommendations to the government and other interested stakeholders in the care and support of children living with HIV/AIDS in
our country and even around the world. The final goal will be to give these children ideal living conditions in order to lead as comfortable and pleasant lives as possible.

1.3 Research Questions

1. What type of medical care is given to CLWHA in the childrens’ homes?
2. What type of nutritional care is given to CLWHA in the childrens’ homes?
3. What is the relationship between the care given to the CLWHA in the childrens’ homes and their health status?

1.4 Null Hypotheses

1. The medical care given to the CLWHA in the childrens’ homes is not adequate.
2. The nutritional care given to the CLWHA in the childrens’ homes is not adequate.
3. There is no relationship between the care given to the CLWHA in the childrens’ homes and their health status.

1.5 Objectives

1.5.1 General Objective

To determine the care given to children living with HIV / AIDS in childrens’ homes in Nairobi and if the care given meets the special needs of the children.

1.5.2 Specific Objectives

1. To determine the medical care administered to the CLWHA in the childrens’ homes.
2. To determine the nutritional care given to the CLWHA in the childrens’ homes.
3. To establish the relationship between the medical and nutritional care given to the CLWHA in the childrens’ homes and their health status.
CHAPTER TWO: LITERATURE REVIEW

2.1 Impact of HIV/AIDS in Kenya.

AIDS was first discovered in Africa in Uganda in 1982. Since then, the spread of the disease in Africa has risen steadily. The Kenya demographic and health survey estimated that 7% of adults age 15-49 years in Kenya are infected with HIV and that the rates in women are nearly double the rates of men (ROK, 2005).

An AIDS orphan is defined as a child under the age of 15 who has lost one or both parents to AIDS (UNAIDS, 2002). Approximately 7 million children are orphaned by the death of their mother, or both parents from HIV/AIDS in the world annually (UNAIDS, 2002).

By the end of 2002, approximately 42 million people worldwide, 38.6 million adults and 3.2 million children under 15 years were living with HIV/AIDS (UNAIDS, 2002). In the same year, approximately 2000 children under 15 years of age became infected each day through Mother-to-Child Transmission [MTCT] (ROK, 2001). In 2002, HIV/AIDS associated illnesses caused the deaths of approximately 3.1 million people worldwide, including an estimated 610,000 children under 15 years (UNAIDS/UNICEF, 2003).

2.2 Impact of HIV/AIDS on children

Children orphaned by HIV/AIDS are disadvantaged in numerous and often devastating ways. Today, over 11 million children under 15 years living in sub-Saharan Africa have been robbed of one or both parents by HIV/AIDS. By 2012, the number is expected to have grown to 20 million. At that point, anywhere from 15% to over 25% of
the children in a dozen sub-Saharan African countries will be orphans - the vast majority of them will have been orphaned by HIV/AIDS (UNICEF, 2003). In addition to the trauma of witnessing the sickness of one or both parents, orphans are likely to be poorer and less healthy than non-orphans (UNICEF, 2003). They are at greater risk of malnutrition, illness, abuse, child labour and sexual exploitation than children orphaned by other causes and these factors increase their vulnerability to HIV infection. These children also suffer from the stigma and discrimination often associated with HIV/AIDS and may be denied education, work, housing and other basic needs (UNICEF/UNAIDS/WHO, 2002).

HIV/AIDS kills people in the most productive age groups (15-49 years), leaving behind children and the elderly to fend for themselves, thus with no adequate food resources, the OVC get inadequate nutrition and are often malnourished, leading to frequent illness and stunted growth (ROK, 2003). When parents fall sick, particularly in poor families, children come under intense stress that may continue, in different ways, for the rest of their childhood. They often take on a heavy burden of nursing for ailing parents and may miss or drop out of school. Added to this is the constant worry about their parents' well being and the family's future (UNICEF, 2003).

The treatment of HIV/AIDS in children proves to be difficult and this is compounded by two important factors. Firstly, HIV/AIDS medication is unpalatable and the treatment regimes are complex and secondly, the drugs cannot always just be scaled down in dosage. The drug dosage is critical and the drugs are metabolised more quickly by
children than by adults (Richard, 2002). One of the biggest challenges faced with HIV/AIDS infected children is identifying them early and giving proper care and support to them and their families (FHI, 2003). Many HIV positive children die from common childhood illnesses rather than from HIV/AIDS. Most of these deaths are preventable by early diagnosis and correct management. Effective management of these conditions can make an important contribution to the quality of life of HIV positive children. In particular, these children have a greater risk of pneumococcal infections and pulmonary TB, as well as unusual opportunistic infections such as diarrhoea, *herpes simplex* and *zoster*, otitis media among others, that respond poorly to treatment (Anderson, 2001).

2.3 HIV infection of children

HIV/AIDS is transmitted to children through a number of ways. Firstly, HIV/AIDS may be transmitted perinatally, through any stage of the birth process. HIV/AIDS can be transmitted through infected blood supply in the womb during pregnancy, at contact with infected maternal blood at birth, or during breastfeeding (Richard, 2002). Secondly, like in adults, children can become infected with the HIV virus through unprotected contact with blood and body fluids like semen, through use of contaminated needles and by unprotected sex (ROK, 2001).

2.4 Needs of Children Living With HIV/AIDS

The main expressed needs of CLWHA are palliative and terminal care that includes access to common drugs, emotional support, positive consideration from their families and community, financial assistance and empathy from health staff (Stone, 2000).
Children orphaned by HIV/AIDS are vulnerable to physical and emotional deprivation. The needs of the HIV positive children may be classified into physical, medical and psychosocial.

2.4.1 Physical Needs

Almost three in five children under age 15 live with both their parents, while 25% live with their mothers but not their fathers, 3% live with their fathers but not their mothers, and 1% do not live with either their parents - that is, they are considered 'fostered' (MoH, 2005).

The fostered children need to be provided with clothing and shelter each day. Currently, in Kenya, there are a number of registered and non-registered institutions that provide shelter and clothing to the children. The children of school-going age are enrolled in school and usually public government schools. Their enrollement into the schools may be dependent on their HIV status. Until recently, in Kenya, government schools resisted admitting HIV positive children into their schools. With the destigmatization and awareness campaigns on HIV/AIDS increased, this is no longer a problem and the schools are admitting the children.

To assess whether orphans are educationally disadvantaged, an indicator was devised that compares the proportion of children age 10 to 14 who are attending school among those whose parents are both dead with those whose parents are both alive and who are living with one or both of them (KDHS, 2003). The results indicate that 92% fo the children
whose parents are both alive and who are living with one or both parents are in school compared with 88% of children who have lost both parents (double orphaned) {MoH, 2005}.

2.4.2 Nutritional needs

Specific nutritional recommendations for children with HIV/AIDS should follow the recommendation for all young children, taking into consideration the increased nutritional requirements that accompany the infection and the increased likelihood of fat and nutrient malabsorption (Ndiaye, 1997). Young children need to be fed patiently and persistently with supervision and love. This is especially true for HIV/AIDS infected children who are frequently ill and suffer from fever, mouth and throat sores and depressed appetite (Ellen et al., 2000). Care-givers should feed children with a variety of locally available fruits and vegetables and animal products and fortified foods if available (Bijlsma, 2000).

There should be provision of a well-baby care and growth monitoring of all children born to HIV infected mothers especially for children not breastfed and who have been weaned early. The care-givers should follow the same nutritional recommendations as for all young children but emphasis put on the increased nutritional requirements that accompany an HIV infection and the increased likelihood of fat and other nutrient malabsorption (Piwoz et al., 2000). Solid foods should be introduced gradually to match the age and development characteristics of the child. The foods introduced first should be soft and enriched with energy sources. Variety of the foods given is necessary to increase
the intake of essential vitamins and minerals (Nerad et al., 2003). Safe and hygienic practices should be followed (Bartlett, 2003). It is important to also monitor their body weight, height, arm circumference and triceps skin-fold regularly. The child’s diet should be reviewed at every well-child clinic and sick-child health visits. Nutritious snacks should be provided between meals to increase consumption. Daily multi nutrient supplements if available may be helpful in preventing nutritional deficiencies (UNAIDS, 2002). These children need to be given a place to live and recognize as their home and they need to be provided with clothes including school uniforms.

2.4.3 Medical Needs

In developing countries, many gains were achieved in the 1990’s by WHO/UNICEF’s child survival programmes in immunization, oral rehydration therapy, effective case management of acute respiratory infections, promotion of breastfeeding, good weaning practices, family planning and growth monitoring; but the HIV/AIDS pandemic has reversed these gains in many countries (Mcomsey and Lederman, 2002).

HIV infection is a major contributing factor to childhood diseases and mortality. Children with HIV infection suffer from the same common childhood illnesses as those who are not infected. The illnesses are however more frequent, last longer and may respond poorly to usual treatments. In advanced HIV infection, opportunistic infections can occur (Romeyn, 2002).
All children born to suspected or known HIV positive mothers should be fully immunized according to the national expanded programmes of childhood vaccination guidelines (Mcomsey and Lederman, 2002). Children with suspected or confirmed HIV infection, but who do not have symptoms suggestive of HIV should be vaccinated like all other children. Infected children with symptoms suggestive of HIV illness should receive all the childhood vaccines including measles and hepatitis B, but not BCG (for tuberculosis) or yellow fever. Infected children with or without symptoms should have an extra dose of measles vaccine at six months of age. If children with HIV infection are not immunized, they may get severe forms of preventable diseases. Thus, it is very important that they receive the full course of immunizations (Singha and Ausitn, 2002).

Children with symptoms suggestive of HIV may have a poorer response to immunization than children without symptoms. Early immunization is important because children with HIV infection are at higher risk of developing severe forms of preventable diseases (Romeyn, 2002).

As in adults, HIV infection in children is a chronic condition with a wide spectrum of clinical expression, varying from no symptoms to AIDS. The management of specific conditions is similar to that for uninfected children.

One common medical management of HIV/AIDS in children is the administration of Antiretroviral drugs (ARV’s). The ARV drugs should not be used until the immune system of HIV positive children shows significant signs of decline. This is because the
risk of drug toxicity is greatly enhanced by taking these drugs early (MSF, 2003). It is recommended that the triple therapy of the ARV's commence when the infected person's CD4 count falls to less than 350 per mm of blood (Richard, 2002).

2.4.3.1 Highly Active Antiretroviral Treatment in HIV infection

Without access to Highly Active Anti-retroviral treatment (HAART), the disease progresses rapidly, with up to 45% of infected children developing AIDS and dying within their first two years of life. However, some children with HIV infection have an adult pattern of disease with HIV-related symptoms appearing ten or more years after initial infection (Dakoury, 2002).

In industrialized countries, where infected infants have access to ARV therapy, more than 80% survive to the age of six. Some children are now surviving in their twenties and are having children of their own (Dakoury, 2002).

Access to HAART in industrialized countries is making HIV infection in children a chronic illness associated with a prolonged lifespan and a better quality of life. While access to HAART in developing countries is improving many infected children will not receive therapy, even as prices continue to come down (Dakoury, 2002).

There are recent developments in ARV therapy. Among them is the HAART and the use of a combination of the newer ARV's. The newer ARV's are in three main groups. The
Reverse Transcriptase Inhibitors (R.T.I's), the Protease Inhibitors (P. I's) and Fusion Inhibitor's (F.I.'s).

2.4.3.1.1 Reverse Transcriptase Inhibitors (RTI's)

This refers to a class of ARV drugs that work by blocking an enzyme (Reverse Transcriptase) that HIV needs to make copies of itself. R.T.I’s interfere with the process whereby the virus converts its genetic material (RNA) into DNA. This allows it to match the genetic material in cells so that the virus can insert itself into human DNA. RTI’s work early in HIV’s life cycle just after the virus has infected cells. There are three types of RTI’s. Namely; Nucleoside analogues, Non-nucleoside RTI’s and Nucleotide RTI’s.

2.4.3.1.1.1 Nucleoside Analogue

This family of drugs slows the replication of the HIV by blocking the action of the reverse transcriptase enzyme which is essential to the virus becoming absorbed into the host cell and reproducing itself using the cell’s genetic material. Examples of ARV’s in this group are Abacavir that is traded using the name Ziagen, Didanosine (DDI) traded as Videx, Lamivudine (3TC) traded as Epivir, Lamivudine-Zidovudine traded as Combivir, Stavudine (D4T) traded as Zerit and Zidovudine (ZDV); Azidothymidine (AZT) traded as Retrovir.
2.4.3.1.2 Non-nucleoside RTI's

This smaller family of drugs inactivate the transcription of the HIV RNA into the cell DNA. The examples are Delavirdine traded as Rescriptor, Efavirenz traded as Sustiva and Nevirpine traded as Viramune (Richard, 2002).

2.4.3.1.3 Nucleotide RTI's

One of these drugs, called Adefovir, is somewhat weakly active against HIV but it is also active against CMV and hepatitis B. There is limited cross-resistance with other ARV's. A close relative of Adefovir, called PMPA persists in the body for a long time and it is fairly active against HIV; it causes a 1.2 log decrease in the virus in the blood (Ainsworth, 2000).

2.4.3.2 Protease Inhibitors (P.I. 's)

Drugs in this family inhibit the activity of an enzyme called protease that is essential to the virus replication process (Richard, 2002). What develops is a defective virus that is unable to infect other cells. A new and promising PI is Amprenavir (formerly known as 141W94). It is a potent PI, which also inhibits the metabolism of other PI's so there are some drug interactions. Amprenavir together with other protease inhibitors seems to be extremely powerful with drops in the viral load of 2.5 to 3.2 logs (1000-fold decrease). When used with AZT plus 3TC, the drop in the viral load was a more modest 1.5 logs. Further studies are underway with Amprenavir including studies taking place in the Immunodeficiency Clinic.
Several other new protease inhibitors have been less well researched, hence we have less information about their activity in clinical trials. One such drug, ABT-378 is ten times more active than its related drug, Ritonavir. It also seems to be active against HIV which is resistant to some protease inhibitors. When taken together with Ritonavir levels can be boosted much above those needed to inhibit the virus. Other new protease inhibitors such as PNU-140690 and PD-178390 are very active against Ritonavir resistant mutants (Michael, 2001).

2.4.3.1.3 Fusion Inhibitors (F. I.'s)

These are those ARV's that stop the virus from entering the CD4 cells.

2.4.3.2 Combination therapy monitoring and adverse reactions

The monitoring needed for adverse reactions to drugs used in HIV treatment depends on which drugs are being used and how they are used. It may also vary with nutritional status and between populations exposed to different infections. The main reason for monitoring adverse reactions is to ensure the safety of individuals taking treatments and identify those who need to stop treatments that are damaging their health and change to other treatments, if available. When drugs are taken in combination, deciding what contribution each of those drugs has to effects that are seen, as well as trying to decide what effects are due to illness, or are completely unrelated either to the drugs or to the illness, is a challenge. To monitor drug reactions, it is essential that baseline assessments and measurements are made, before the drug is first taken. Good medical record keeping is fundamental for effective monitoring.
Some of these factors can be identified through a careful clinical history. Being overweight, being malnourished, or drinking alcohol can all predispose some people to particular drug side effects. A past history of illness such as pancreatitis is a major risk factor for its occurrence as a drug side effect.

People who have some peripheral neuropathy before starting on treatment are specially vulnerable to it. A careful physical examination for lack of sensation is therefore recommended before starting on drugs such as isoniazid (INH), D4T (stavudine), DDI (didanosine) or DDC (zalcitabine) in particular.

Other conditions, such as hepatitis B and C, which increases the risk of liver damage with drug treatment, require blood tests for accurate diagnosis. In the absence of blood tests, it may still be possible to assess likely risk – for example, injecting drug users and people who have received blood products are more likely to be hepatitis C positive than people whose exposure to HIV was through sex. Some populations, notably in China, have a very high prevalence of hepatitis B virus acquired at birth. In Cote d'Ivoire, a strong correlation emerged between hepatitis B virus co-infection and hepatotoxicity as measured every three months using serum alanine aminotransferase (ALAT) tests, in a population of people with HIV receiving ARVs including protease inhibitors. There was no similar relationship for hepatitis C virus in this population, although the small numbers (9 with HCV and 21 with HBV out of 112 patients with elevated ALAT values) do not allow definitive conclusions (Dakoury, 2002).
It may still be necessary to offer a treatment despite a known risk of side effects, but it is then possible for both the patient and healthcare provider to be aware of the risk and to discuss how it can be managed.

2.4.4 Psycho-social needs

Parents and their families or carers need ongoing emotional support and empathy. Bereavement care of children may be especially challenging. Children may express their feelings through play, stories and art (Douglas et al., 2002).

Many of the orphaned children need to come to terms with the reality of being orphans. The older children are expected to provide love and care, which they themselves still need. Many of the OVC watched as HIV/AIDS slowly destroys their parents, leaving them to face society’s stigma towards them. They suffer anxiety and insecurity concerning their future (Clive, 2000).

2.5 Institutionalization of children living with HIV/AIDS

There are many organizations around the world that are responding to the special needs of the HIV positive children through school fees payment, supplementary feeding, medical care, home visits and vocational training programmes (Osborne et al., 1997).

Throughout the world, more than 7 million children are kept in childrens’ homes and other non-penal institutions (WHO, 2002 a). Among the care given in these institutions is medical, nutritional, physical, emotional and spiritual care (Forsythe, 1992).
Many of these children are kept in grossly substandard facilities and are exposed to inhumane care, many being left to die (Allan et al., 1998). Ironically, those responsible for nurturing and providing for the children they take into their care often physically and sexually abuse the children and subject them to other cruel and degrading treatment. On the other hand, in some institutions, care may be given that is so good and supportive enabling children live longer than otherwise estimated (UNICEF, 1994).

The children's homes pose new social and demographic changes in the circumstances in which young children spend their days and this has resulted in new challenges in public health with significant changes in the epidemiology of illnesses, injury and other health events among children. The care may also be beneficial to child health and development (UNICEF, 2000).

The orphanages and homes provide settings for opportunities to foster the adaptation of health promotion and disease prevention behaviours in young children by the childcare providers. Among the services that the public health system may be able to deliver through the child care setting are health education and prevention activities such as immunization, lead screening, oral health and injury and violence prevention (UNAIDS, 2001).

The community and organizations concerned with the health and safety of children include child care providers, health care providers, local, state and federal governments including public health and social service agencies, the business community, academic
institutions and advocacy groups concerned with childrens’ health and welfare (UNISA/WHO, 2001). The credibility of AIDS programmes will increasingly be judged by the quality of care they offer (WHO, 2002). The support and care of HIV positive people is therefore not only a human rights obligation, but is vital to maximize the impact and the success of prevention activities (Douglas et al., 2002).

Orphans in Kenya need immediate and long-term assistance. The high HIV/AIDS infection rates already existing in the country will result in hundreds of thousands of orphans over the next several years. HIV/AIDS prevention remains the most critical recommendation in reducing the potential number of orphans (Forsythe et al., 1996).

2.6 Palliative care

WHO defines palliative care as the active total care of patients whose disease no longer responds to curative treatment (Douglas et al., 2002). Control of pain, of other symptoms and of psychological, social and spiritual problems is paramount. The goal of palliative care is to achieve the best quality of life for patients and their families (Doyle, 1999). Palliative care is an integral part of every health care professional role. Effective palliative care is best delivered by involving an interdisciplinary team including nurses, social workers, doctors, pastoral workers, physiotherapists, community care workers and other professionals and volunteers. All members of the palliative care team should receive ongoing training and support (Douglas et al., 2002).
During illness, palliative care strives to meet physical, psychological, social and spiritual needs, while remaining sensitive to personal, cultural and religious values, beliefs and practices (Gibbon, 2000). Palliative care includes medical and nursing care, social and emotional support, educational support, counseling and spiritual care (Saunders, 1967).

The palliative care philosophy affirms life and regards dying as a normal process. It neither hastens nor postpones death. The philosophy also provides relief from pain and other distressing symptoms and integrates psychological and spiritual aspects of care. Finally, it provides a support system to help the people living with HIV / AIDS (PLHWA) to live as actively as possible until death while providing a support system to help the family and loved ones cope during the person’s illness and / or bereavement (UNAIDS, 1999). Palliative care aims at providing care and support that makes life comfortable for patients throughout all phases of the disease so that they can live as fully and comfortably as possible (Barlett, 2003).
CHAPTER THREE: MATERIALS AND METHODS

3.1 Study Area

The study was carried out in Nairobi, a Province in the central part of Kenya. Nairobi extends between 36° 4' and 37° 10' in the North and between 1° 9' and 1° 28' to the South. It covers an area of 696.1 km², lies at a height of 1.670m; the longitude is 36° 50' east (3 hours ahead of GMT) and latitude 1° 17' south, just 140 km south of the Equator.

It shares common borders with Kiambu District to the North, Machakos District to the East and Kajiado District to the South. Administratively, Nairobi is both a province and a district.

Nairobi is conspicuously cosmopolitan and was chosen purposively due to the presence of a good number of children homes that care for CLWHA. According to the 1999 population census, Nairobi city has a population of 2,143,254 million people (CBS, 1999).

3.2 Study Population

The study population was the CLWHA below 18 years who had been in the children homes for more than 6 months at the time of the study. There were five childrens’ homes included in the study and these homes had a total of 132 CLWHA.

3.3 Inclusion Criteria

All children living with HIV/AIDS in the childrens’ homes whose administrators’ consented to the study.
3.4 Exclusion Criteria

Children in the childrens’ homes who were not HIV positive and the childrens’ homes that did not consent to the study.

3.5 Study Design

The study was a descriptive cross-sectional study to determine the nature of care provided to children living in childrens’ homes in Nairobi. The study involved data collection using pre-tested self-administered questionnaires given to the administrators in the various childrens’ homes and the care-givers of the children.

3.6 Sampling Procedure

Nairobi was selected purposively because it has the most number of homes with Children Living With HIV/AIDS. There were seven childrens’ homes that have CLWHA, but only five of the homes gave consent for the study. In each home all the CLWHA living in the homes were included in the study as long as they met the inclusion criteria. The table below shows the distribution of the CLWHA in each home.

<table>
<thead>
<tr>
<th>Table 3.1 Number of CLWHA per home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Home</td>
</tr>
<tr>
<td>------------------------------------</td>
</tr>
<tr>
<td>1. Nyumbani Children of God</td>
</tr>
<tr>
<td>2. New Life Babies Home</td>
</tr>
<tr>
<td>3. Hope House Babies Home</td>
</tr>
<tr>
<td>4. Thomas Barnados Home</td>
</tr>
<tr>
<td>5. St. Pauls Home for HIV/AIDS Orphans</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>
3.7 Sample Size Determination

This was determined by the formula as used by Fisher et al. (1998).

\[ n = \frac{z^2 pq D}{d^2} \]

Where \( n \) is the sample size, \( z \) is the standard normal deviate, \( p \) is the proportion of successes, \( q \) is the proportion of failures, \( D \) is the effect size, and \( d \) is the level of precision.

\( p \) is 0.5 because it is not known how many children were in childrens’ homes who are living with HIV/AIDS. Since \( q = 1 - p \) then it is also 0.5.

\[ (1.96)^2 \times 0.5 \times 0.5 \times 1 \]

\[ (0.05)^2 \]

\[ n = 384 \]

However, only 133 children were involved in this study.

3.8 Limitations of the Study

There were only five out of seven homes that consented to the study. The total number of CLWHA in the five homes was 133 and they were all included. This limited the study population as the target was 384 (Section 3.9) but the sample available was only 133.

3.9 Data Collection

Structured questionnaires with closed-ended questions and direct observation were used in data collection. Retrospective data was collected from the office files and records in the childrens’ homes.
3.10 Ethical Consideration

Clearance for the study was sought from Kenyatta University, the Childrens’ homes Ethical Committees and the Ministry of Education, Science and Technology (MOEST). All the study participants’ rights to privacy and confidentiality were safeguarded and no child was exposed to any harm during the course of the study.

3.11 Data Management and Analysis

Data was processed using the Statistical Package for Social Sciences (SPSS) software. Contingency coefficient and chi-square was used to determine the extent and significance of the relationship between the nominal variables.
CHAPTER FOUR: RESULTS

4.1 Characteristics of the childrens' homes

Data was gathered from the five children homes and were classified as shown in Table 4.1.

4.1.1 Total Number of CLWHA in each home

Five children homes were used in the study. They were; Nyumbani Children of God Relief Institute, New Life Babies Home, Hope House Babies home, Thomas Barnados Home and St. Paul’s Home for HIV/AIDS orphans and street children. There was a total 329 children in all of the homes. The distribution of children in each of the homes and the percentage of CLWHA out of the total number (133) in each home is as shown in Table 4.1.

Table 4.1 Proportion of CLWHA in each home

<table>
<thead>
<tr>
<th>Name of Home</th>
<th>No. of CLWHA</th>
<th>% of total (133)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nyumbani Children of God</td>
<td>64</td>
<td>48</td>
</tr>
<tr>
<td>New Life Childrens’ Home</td>
<td>28</td>
<td>21</td>
</tr>
<tr>
<td>Thomas Barnados House</td>
<td>24</td>
<td>18</td>
</tr>
<tr>
<td>Hope House Babies Home</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>St. Paul’s Home for HIV/AIDS orphans</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>133</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.1.2 Operational period of the children’s homes

Out of the five homes, only one (Nyumbani Children of God Relief Institute) had been operational for more than 20 years, New Life Home and Thomas Barnados House for an
average of more than 10 years while Hope House Babies home and St. Paul’s Home for HIV/AIDS orphans had been operation for less than 5 years. All the homes (100%) had been set up to offer permanent shelter to the OVC and out of these, three aimed at finally having foster homes and adoption parents for the children. The other two homes (Nyumbani and Thomas Barnados) had the children remain in their care without having them adopted.

4.1.3 Support systems for the homes

All the homes received support from well wishers and friends of the homes. Out of these, 40% had non-governmental organizations supporting them, 20% had church affiliations, and another 20% had the governments support. The remaining two homes relied on support from well-wishers (Table 4.2).

Table 4.2 Childrens’ Homes Support Systems

<table>
<thead>
<tr>
<th>Variable – Support*</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well-wishers &amp; friends (All the homes)</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>NGO’s (Hope house and Thomas Barnados)</td>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>Churches (Nyumbani)</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>GOK (St. Paul’s home)</td>
<td>1</td>
<td>20</td>
</tr>
</tbody>
</table>

* Multiple responses allowe

4.1.4 Social amenities in the childrens’ homes

Out of the five homes, 60% relied on water from the Nairobi City Council, 20% relied on borehole water and one other home had to fetch water from a nearby river. For lighting,
80% of the homes used electricity and 40% had a stand-by generator in case of blackouts, 20% of the homes used hurricane lamps for lighting. Most of the homes (80%) used gas for cooking while only 20% of the homes used firewood and charcoal in the kitchen. 80% of the homes had permanent structures for the buildings and only one home had temporary shelter for the children (St. Paul’s). Only two homes run clinics in the home and one of the homes—Nyumbani; run a diagnostic laboratory that is used nationally by various people in the health sector.

4.1.5 Work-related qualifications and experience of staff in the childrens’ homes

Each of the directors in all the childrens’ homes had undertaken management and administration courses, and 80% of them had taken courses in social work and had courses in the care and support of HIV positive people. 100% of the homes had a mother figure per unit of children and each unit in each home comprised of a group of children in a given age group. Only one home had a nurse who lived within the home, while another home had a visiting doctor (pediatrician) to care for the medical needs of the children. The other homes (60%) took the children for medical care in various private and private hospitals and clinics outside the home and the home met the expenses incurred.

4.1.6 Challenges facing the homes

The main challenge facing all (100%) of the homes was inadequate finances. The homes that had inadequate food as a challenge were 40%, while 40% had inadequate medical services as their main challenge. Lack of government support was a challenge in 80% of the homes and lack of trained personnel to care for and support the CLWHA was a challenge experienced by all the homes. Other challenges included inadequate land
holding area and educational needs such as school uniforms and books were mentioned by less than half of the homes (40%) (Figure 4.1).

Figure 4.1 Challenges facing the children's homes
4.2 SOCIO DEMOGRAPHIC CHARACTERISTICS OF THE STUDY POPULATION

4.2.1 Age of the children

The mean age of the CLWHA was 104.6 months, with the youngest child being twelve months old and the oldest child was 204 months and lived in Thomas Barnados Children Home. The median age was 120 months. There was a higher number (56.4%) of children in the older age group of 10 to 18 years as compared to (42.6%) of children below the age of 10 years in the children homes (Figure 4.2).

![Figure 4.2 Distribution of Children by Age](image)

4.2.2 Sex of the CLWHA

There were 69 (51.9%) males compared to 64 (48.1%) females in the children's homes (Figure 4.3).
4.2.3 Education Background

There was 100% school attendance by children of school-going age in all the five children's homes.

4.2.4 Categorization of Children

Most (91%) of the CLWHA in all the five children's homes were double orphans—had lost both mother and father, 3% had lost only their fathers while 6% had lost only their mothers (Figure 4.4).
4.2.5 Background of the Children Living With HIV/AIDS

Out of the 133 CLWHA in all the childrens' homes, 30% of the children came to the homes as referrals from various private and public hospitals within and without Nairobi. 25.01% of the CLWHA came as referrals from other childrens' homes that did not care for the HIV positive children, 24.06% of the CLWHA were brought to the various homes by their next of kin, 9.02% brought in by police administrators while the remaining 11.91% had unknown / unrecorded origins (figure 4.5) below.
Figure 4.5  Background (origin) of the CLWHA

The diagram shows the distribution of children's origins among different institutions and relatives. The youngest child was admitted to a children's home and the oldest child was a ward of the Home Office. The CLWHA's cases were from various backgrounds, but the majority were originally from hospitals, followed by other homes, relatives, police, and unknown sources.
4.3 CHILD CARE PRACTICES

4.3.1 Medical Care

In each of the childrens' homes, all (n=133) of the CLWHA were given medical care. The medical care varied provided to the children varied from the treatment of opportunistic infections, CD4 cell count, antiretroviral administration, immunization and growth monitoring. Out of the five homes, 2 of them had a clinic and a laboratory within the home while the other three referred their sick children to both private and public hospitals for medical care.

4.3.1.1 Immunization

All the CLWHA (100%) were fully immunized at the time of the study. Most of the children came fully immunized but those who were underage were immunized in the homes. The youngest child was 12 months of age therefore had already been fully immunized at the time of the study.

4.3.1.2 HIV Confirmatory Tests

All the CLWHA in the childrens' homes had tests to confirm that the first HIV results performed were correct. Figure 4.6 below shows the frequency of the confirmatory tests to the CLWHA. Over 50% of the children took an HIV test once in 6 months, 12.03% each month, 15% took it weekly while 15% took the HIV test annually (Figure 6).
4.3.1.3 CD4 Cell Count

94% of the CLWHA had their CD4 cell count done each time their HIV test was carried out. The remaining 6% of the CLWHA did not have their CD4 cell counts done concurrently with their HIV tests but had only one CD4 cell count done at the initial HIV test.

4.3.1.4 ARV Administration

Out of the 133 CLWHA, 66.2% were on ARV therapy, while 24.8% were not. The remaining 9.0% had no records showing whether or not they were on ARV’s or not. A total of 13 different ARV’s were recorded as being administered to the children in the different children homes. The homes either purchased the drugs themselves or relied on
well wishers to donate the ARV's. One home (20%) had the government supply their ARV's. AZT was the most frequently (36%) used ARV, while Nelfinavir, Didanuvir, Epivir and Diabese were the least (4%) used ARV's (Figure 4.7).

![Distribution of CLWHA by ARV administered](image)

**Figure 7** Distribution of CLWHA by ARV Administered

### 4.3.1.5 Opportunistic Infections

There were a total of 18 different opportunistic infections affecting all the CLWHA in the five childrens' homes, but only six were major opportunistic infections as shown in Figure 8. Diarrhoea had the highest incidence (75.9%), while tuberculosis had the least incidence (36.1%) among the CLWHA. The incidence of diarrhoea varied among the homes. Nyumbani had only 35% of the children with diarrhoea while other homes like New Life Home had 85% of the CLWHA suffering from diarrhoea, Hope House (61%),
Thomas Barnados (50%) and St. Paul’s had all 100% of children with diarrhoea. As for tuberculosis, Nyumbani had the highest number of CLWHA suffering (56%) as compared to the other homes (Figure 4.8).

![Incidence of opportunistic infections](chart.png)

**Figure 4.8** Incidence of opportunistic infections

### 4.4 Relationship between the use of ARV’s and the occurrence of Opportunistic Infections

The opportunistic infections with the highest incidence among the CLWHA were cross-tabulated against the various ARV’s administered to the children and the results are as shown in the subsections below.
Table 4.3 The relationship between ARV use and disease incidence

<table>
<thead>
<tr>
<th>ARV (% of children on the ARV)</th>
<th>% of the</th>
<th>T.B (36%)</th>
<th>Diarrhoea (72%)</th>
<th>Skin infections (69%)</th>
<th>Oral thrush (45%)</th>
<th>Pneumonia (57%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zidovudine (12%)</td>
<td>0</td>
<td>9.02</td>
<td>12.03</td>
<td>3.01</td>
<td>6.02</td>
<td></td>
</tr>
<tr>
<td>Lamivudine (15%)</td>
<td>0</td>
<td>12.03</td>
<td>15.04</td>
<td>6.02</td>
<td>9.02</td>
<td></td>
</tr>
<tr>
<td>Nevirapine (15%)</td>
<td>0</td>
<td>12.03</td>
<td>15.04</td>
<td>6.02</td>
<td>9.02</td>
<td></td>
</tr>
<tr>
<td>AZT (27%)</td>
<td>12.03</td>
<td>24.06</td>
<td>24.06</td>
<td>9.02</td>
<td>21.05</td>
<td></td>
</tr>
<tr>
<td>3TC (18%)</td>
<td>0</td>
<td>15.04</td>
<td>18.05</td>
<td>9.02</td>
<td>12.03</td>
<td></td>
</tr>
<tr>
<td>Nelfinavir (3%)</td>
<td>0</td>
<td>3.01</td>
<td>0</td>
<td>3.01</td>
<td>3.01</td>
<td></td>
</tr>
<tr>
<td>Didanuvir (3%)</td>
<td>0</td>
<td>3.01</td>
<td>0</td>
<td>3.01</td>
<td>3.01</td>
<td></td>
</tr>
<tr>
<td>Starvudine (12%)</td>
<td>6.02</td>
<td>12.03</td>
<td>6.0</td>
<td>6.02</td>
<td>12.03</td>
<td></td>
</tr>
<tr>
<td>Viracept (6%)</td>
<td>6.02</td>
<td>6.02</td>
<td>6.0</td>
<td>0</td>
<td>6.02</td>
<td></td>
</tr>
<tr>
<td>Epivir (3%)</td>
<td>3.01</td>
<td>3.01</td>
<td>3.01</td>
<td>0</td>
<td>3.01</td>
<td></td>
</tr>
<tr>
<td>Diabese (3%)</td>
<td>0</td>
<td>3.01</td>
<td>3.01</td>
<td>3.01</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Stocrine (15%)</td>
<td>9.02</td>
<td>15.04</td>
<td>9.02</td>
<td>6.02</td>
<td>15.04</td>
<td></td>
</tr>
<tr>
<td>DDI (18%)</td>
<td>12.03</td>
<td>18.05</td>
<td>12.03</td>
<td>6.02</td>
<td>18.05</td>
<td></td>
</tr>
</tbody>
</table>

4.4.1 Tuberculosis

Of the 133 CLWA in the homes, 36.1% suffered from Tuberculosis (Figure 4.8). Data analysis shows that there was a relationship between the occurrence of T.B and the use of certain ARV's (Table 4.3). There was no tuberculosis incidence among the CLWA who were on the following ARV's: Zidovudine, Lamivudine, Nevirapine, 3TC, Nelfinivir, Diabese and Didanuvir. Chi-square tests showed that there was a significant relationship between the use of the first three of these ARV's while the other three showed no significant relationship to the occurrence of tuberculosis. \( \chi^2 = 13.37, p = 0.000 \).

There was a significant relationship between the occurrence of Tuberculosis and the use of AZT, Viracept, Epivir, Stocrine and DDI: the use of these ARV's increased the likelihood for TB incidence \( \chi^2 = 14.91, p = 0.000 \), while despite the presence of
Tuberculosis with the use of Didanuvir, there was no significant relationship between the two ($\chi^2 = 2.19, p = 0.139$).

### 4.4.2 Skin infections

Skin infections were present among 69.9% of the CLWHA and there was a significant relationship to the use of all the ARV's except Nelfinivir and Didanuvir (Table 4.3). There was a positive significant relationship between the incidence of skin infections and the use of Lamuvidine, Nevirapine, AZT and 3TC ($\chi^2 = 8.86, p = 0.003$) – the presence of tuberculosis was directly related to the use of the ARV's. There was no significant relationship between the use of Epivir, Diabese, Stocrine, DDI and Viracept to the incidence of skin infections despite that there was presence of skin infections among the children on these ARV's (Table 4.4).

<table>
<thead>
<tr>
<th>Type of ARV</th>
<th>% of skin infections</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zidovudine</td>
<td>12.03</td>
<td>0.012</td>
</tr>
<tr>
<td>Lamuvidine</td>
<td>15.04</td>
<td>0.003</td>
</tr>
<tr>
<td>Nevirapine</td>
<td>24.06</td>
<td>0.003</td>
</tr>
<tr>
<td>AZT</td>
<td>18.05</td>
<td>0.005</td>
</tr>
<tr>
<td>3TC</td>
<td>0</td>
<td>0.001</td>
</tr>
<tr>
<td>Starduvine</td>
<td>0</td>
<td>0.015</td>
</tr>
<tr>
<td>Viracept</td>
<td>6.0</td>
<td>0.080</td>
</tr>
<tr>
<td>Epirivir</td>
<td>3.01</td>
<td>0.228</td>
</tr>
<tr>
<td>Diabese</td>
<td>3.01</td>
<td>0.228</td>
</tr>
<tr>
<td>Stocrine</td>
<td>9.02</td>
<td>0.102</td>
</tr>
<tr>
<td>DDI</td>
<td>12.03</td>
<td>0.328</td>
</tr>
</tbody>
</table>

### 4.4.3 Oral thrush

Oral thrush was present in 45.1% of the children (Figure 4.8). There was a relationship between the use of certain ARV's and the occurrence of oral thrush among the children.
Among the ARV's that had a direct significant relationship to the occurrence of oral thrush were Didanuvir ($\chi^2 = 6.62, p = 0.01$) and Diabese ($\chi^2 = 6.62, p = 0.01$) – the use of these ARV's increased the possibility of oral thrush incidence among the CLWHA.

Zidovudine ($\chi^2 = 3.88, p = 0.049$), Lamuvidine ($\chi^2 = 0.018, p = 0.894$), Nevirapine ($\chi^2 = 0.018, p = 0.894$), AZT ($\chi^2 = 1.88, p = 0.17$), 3TC ($\chi^2 = 1.74, p = 0.187$), Nelfinavir ($\chi^2 = 6.62, p = 0.1$), Starduvine ($\chi^2 = 1.038, p = 0.308$), Stocrine ($\chi^2 = 0.018, p = 0.894$) and DDI ($\chi^2 = 0.394, p = 0.53$) failed to show any significant statistical relationship to incidence of oral thrush among CLWHA (table 13).

<table>
<thead>
<tr>
<th>Type of ARV</th>
<th>% of oral thrush</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zidovudine</td>
<td>3.01</td>
<td>0.049</td>
</tr>
<tr>
<td>Lamuvidine</td>
<td>6.02</td>
<td>0.894</td>
</tr>
<tr>
<td>Nevirapine</td>
<td>6.02</td>
<td>0.894</td>
</tr>
<tr>
<td>AZT</td>
<td>9.02</td>
<td>0.17</td>
</tr>
<tr>
<td>3TC</td>
<td>9.02</td>
<td>0.187</td>
</tr>
<tr>
<td>Nelfinavir</td>
<td>3.01</td>
<td>0.10</td>
</tr>
<tr>
<td>Didanuvir</td>
<td>3.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Starduvine</td>
<td>6.02</td>
<td>0.308</td>
</tr>
<tr>
<td>Viracept</td>
<td>0</td>
<td>0.019</td>
</tr>
<tr>
<td>Epirivir</td>
<td>0</td>
<td>0.104</td>
</tr>
<tr>
<td>Diabese</td>
<td>3.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Stocrine</td>
<td>6.02</td>
<td>0.894</td>
</tr>
<tr>
<td>DDI</td>
<td>6.02</td>
<td>0.530</td>
</tr>
</tbody>
</table>

### 4.4.4 Diarrhoea

Diarrhoea had the highest incidence among the CLWHA in all the homes (72.2%) (Figure 4.8). When cross-tabulated against various ARV’s, there was a relationship between the incidence of diarrhoea and the use of certain ARV’s. Incidence of diarrhoea
among the children on AZT had the highest percentage of cases as compared to the other ARV’s. The ARV with the lowest percentage cases of diarrhoea among the CLWHA was Nelfinivir, Didanuvir, Epivir and Diabese (Table 4.6). Despite this, there was no significant relationship between the use of all the thirteen ARV’s and the occurrence of diarrhoea among the CLWHA ($\chi^2 = 0.022, p = 0.883$).

### Table 4.6  Relationship between use of ARV’s and incidence of Diarrhoea

<table>
<thead>
<tr>
<th>Type of ARV</th>
<th>% of diarrhoea</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zidovudine</td>
<td>9.02</td>
<td>0.484</td>
</tr>
<tr>
<td>Lamuvidine</td>
<td>12.03</td>
<td>0.078</td>
</tr>
<tr>
<td>Nevirapine</td>
<td>12.03</td>
<td>0.078</td>
</tr>
<tr>
<td>AZT</td>
<td>24.06</td>
<td>0.883</td>
</tr>
<tr>
<td>3TC</td>
<td>15.04</td>
<td>0.179</td>
</tr>
<tr>
<td>Nelfinavir</td>
<td>3.01</td>
<td>0.503</td>
</tr>
<tr>
<td>Didanuvir</td>
<td>3.01</td>
<td>0.503</td>
</tr>
<tr>
<td>Starduvine</td>
<td>12.03</td>
<td>0.15</td>
</tr>
<tr>
<td>Viracept</td>
<td>6.02</td>
<td>0.333</td>
</tr>
<tr>
<td>Epirivir</td>
<td>3.01</td>
<td>0.503</td>
</tr>
<tr>
<td>Diabese</td>
<td>3.01</td>
<td>0.503</td>
</tr>
<tr>
<td>Stocrine</td>
<td>15.04</td>
<td>0.098</td>
</tr>
<tr>
<td>DDI</td>
<td>18.05</td>
<td>0.063</td>
</tr>
</tbody>
</table>

#### 4.4.6 Pneumonia

Pneumonia was present among 57.1% of the children in the homes. There was a significant relationship between the use of certain ARV’s and the presence of pneumonia (Table 4.3).

The children on all the ARV’s suffered from pneumonia except for those on Diabese only. There was a significant relationship between the use of Starduvine, Stocrine and DDI and the incidence of pneumonia among the CLWHA ($\chi^2 = 11.893, p = 0.001$). Zidovudine, Lamivudine), Nevirapine), AZ), 3TC, Nelfinivir), Didanuvir, Viracept and
Epirivir did not have any significant relationship to the incidence of pneumonia among the CLWHA ($\chi^2 = 1.54$, $p = 0.215$)(Table 4.7).

**Table 4.7** Relationship between use of ARV's and incidence of Pneumonia

<table>
<thead>
<tr>
<th>Type of ARV</th>
<th>% of Pneumonia</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zidovudine</td>
<td>6.02</td>
<td>0.307</td>
</tr>
<tr>
<td>Lamuvidine</td>
<td>9.02</td>
<td>0.135</td>
</tr>
<tr>
<td>Nevirapine</td>
<td>9.02</td>
<td>0.135</td>
</tr>
<tr>
<td>AZT</td>
<td>21.05</td>
<td>0.072</td>
</tr>
<tr>
<td>3TC</td>
<td>12.03</td>
<td>0.405</td>
</tr>
<tr>
<td>Nelfinavir</td>
<td>3.01</td>
<td>0.215</td>
</tr>
<tr>
<td>Didanuvir</td>
<td>3.01</td>
<td>0.215</td>
</tr>
<tr>
<td>Starduvine</td>
<td>12.03</td>
<td>0.008</td>
</tr>
<tr>
<td>Viracept</td>
<td>6.02</td>
<td>0.073</td>
</tr>
<tr>
<td>Epirivir</td>
<td>3.01</td>
<td>0.215</td>
</tr>
<tr>
<td>Diabese</td>
<td>0</td>
<td>0.001</td>
</tr>
<tr>
<td>Stocrine</td>
<td>15.04</td>
<td>0.001</td>
</tr>
<tr>
<td>DDI</td>
<td>18.05</td>
<td>0.001</td>
</tr>
</tbody>
</table>
4.5 Nutritional Care

In 80% of the homes, meals were served four times a day. The meals were breakfast, midmorning snack, lunch, mid-afternoon snack and supper in the evenings. In one home, the CLWHA were given a bottle of milk to soothe them to sleep.

60% of the children did not have a balanced meal. That is they were not fed daily on the combination of Vitamins, Proteins, Carbohydrates, Water and Mineral Salts.

4.5.1 Relationship between Nutritional Care and Health Status

There was cross-tabulation done between the various meals served and the incidence of the six major opportunistic infections suffered by the CLWHA in each of the homes.

4.5.1.1 Relationship between intake of foods rich in vitamins and incidence of diseases

There were a total of 60 children who took foods rich in vitamins (fruits and vegetables – carrots, spinach, kale, cabbages, mangoes and oranges) in all the five homes. Out of these children, results of cross tabulations done show that the intake of foods rich in vitamins had a significant relationship on the incidence of skin infections ($\chi^2 = 5.08, p=0.000$) diarrhoea ($\chi^2 = 5.08, p=0.024$) and common colds ($\chi^2 = 7.94, p=0.005$) (Table 4.9).

The incidence of common colds was low among the children on foods rich in vitamins as compared to the children who got colds yet were on vitamins. Diarrhoea incidence and
the intake of foods rich in vitamins were not directly related as much as there was a relationship. There was a significant realtionship between the two.

<table>
<thead>
<tr>
<th>Disease</th>
<th>% of children on vitamins</th>
<th>$\chi^2$</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuberculosis</td>
<td>30%</td>
<td>3.10</td>
<td>0.078</td>
</tr>
<tr>
<td>Skin infection</td>
<td>21%</td>
<td>3.10</td>
<td>0.000</td>
</tr>
<tr>
<td>Oral</td>
<td>3%</td>
<td>0.989</td>
<td>0.32</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>97%</td>
<td>5.08</td>
<td>0.024</td>
</tr>
<tr>
<td>Cold</td>
<td>20%</td>
<td>7.94</td>
<td>0.005</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>2%</td>
<td>3.10</td>
<td>0.078</td>
</tr>
</tbody>
</table>

4.5.1.2 Relationship between intake of foods rich in carbohydrates and the incidence of disease

All the children in the children homes had foods rich in carbohydrates in their daily meals. The cross tabulations and chi-square results showed a relationship between the intake of carbohydrates and the incidence of Oral thrush only (Table 4.10). There was a high incidence of diarrhoea (80%), but there was no significant relationship between disease occurrence and the intake of carbohydrates ($p=0.571$).

<table>
<thead>
<tr>
<th>Disease</th>
<th>% of children on Carbohydrates</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuberculosis</td>
<td>40%</td>
<td>0.004</td>
</tr>
<tr>
<td>Skin infection</td>
<td>20%</td>
<td>0.007</td>
</tr>
<tr>
<td>Oral thrush</td>
<td>80%</td>
<td>0.000</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>80%</td>
<td>0.571</td>
</tr>
<tr>
<td>Cold</td>
<td>75%</td>
<td>0.320</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>30%</td>
<td>0.909</td>
</tr>
</tbody>
</table>
4.5.1.3 Relationship between intake of foods rich in Protein and disease incidence

Intake of foods rich in protein (meat, legumes and eggs) had the most significant relationship to the incidence of skin infections \((p=0.000)\), Oral thrush \((p=0.004)\) and Common Colds \((p=0.000)\). Intake of foods rich in protein had a significant relationship to the incidence of Oral thrush \((p=0.000)\), and Tuberculosis \((p=0.004)\) while carbohydrate intake had a significant relationship to the incidence of common colds \((p=0.000)\) (Table 4.11).

Table 4.11 Relationship between foods rich in proteins and incidence of diseases

<table>
<thead>
<tr>
<th>Disease</th>
<th>% of children on proteins</th>
<th>(\chi^2)</th>
<th>(P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuberculosis</td>
<td>40%</td>
<td>8.443</td>
<td>0.004</td>
</tr>
<tr>
<td>Skin infection</td>
<td>20%</td>
<td>0.013</td>
<td>0.909</td>
</tr>
<tr>
<td>Oral thrush</td>
<td>10%</td>
<td>20.05</td>
<td>0.000</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>80%</td>
<td>0.321</td>
<td>0.571</td>
</tr>
<tr>
<td>Cold</td>
<td>25%</td>
<td>0.989</td>
<td>0.32</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>20%</td>
<td>0.013</td>
<td>0.909</td>
</tr>
</tbody>
</table>
CHAPTER FIVE: DISCUSSION

5.1 Socio-demographic characteristics of CLWHA

The largest proportion of CLWHA lived in the children home that was run by an individual with the help of a church. This individual is a foreigner thus got major funding and sponsorship thus the home was better empowered in terms of resources to take care of a higher number of children and had better facilities to care of the children because it had the resources. This home had sponsorship not only from local well-wishers but also from the international community, various churches and non-governmental organizations.

In most of the homes, the children in the older age groups of above 102 months were more than the children in the lower age groups. This difference can be attributed to the high morbidity of CLWHA below the ages of 24 months. This is attributed to the fact that although children with AIDS can present at any age, most studies indicate that the average age is about 9 months and the clinical presentations may vary yet many of the signs and symptoms are not specific to HIV/AIDS and may occur in non HIV infected children. The variability in clinical presentation of HIV disease categorises children in two distinct categories. There are children who progress very rapidly to AIDS defining conditions and have a rapid loss of CD4 cells within the first two years of life, leading to increasingly severe complications of worsening immuno compromise and death. A larger group of children have a more intermediate rate of progression of HIV disease and will tend to develop evidence of severe immunosuppression by 7 to 8 years of age, with a
much more gradual loss in CD4 cell number (S.A.R.A, 2002) this explains the higher percentage of CLWHA in this age group.

Most of the children were referred from hospitals and this is attributed to the fact that many of the HIV positive mothers aware of their status deliver the children and thereafter abandon them in the same hospital. Moreover, the mothers may be overwhelmed by the incidence of opportunistic diseases the child may have and therefore abandon them and any good Samaritan coming across the baby who may have symptomatic AIDS may immediately choose to refer the case to a hospital that decides to refer to a children home for further care and support.

5.2 Medical Care

All the children had been fully immunized at the time of the study. This can contribute to the lower incidence of diseases that non-immunized children acquire. The opportunistic disease incidence was higher than the rate of treating diseases in most of the homes (60%). This is attributed to the fact that only two of the homes run clinics within the homes and only one of these had a laboratory to perform the necessary tests on the blood plasma and serum. It is necessary to keep count of the CD4 cells and the viral load of a HIV infected person. HIV diagnosis of asymptomatic children of mothers whose infection status is not known should be followed up with normal well-baby care and should be tested for HIV. Many of the children in the children homes were orphans so in many cases their mothers HIV status was not known hence the importance of HIV tests to be done and these had to be repeated once the child got to the age of 15 months.
All the children in the children homes had confirmatory tests done and this is in line with the recommendations of WHO on CLWHA that states that children over the age of 15 months or younger children who reach this age should receive a confirmatory ELISA test after 15 months of age.

Many of the children in the homes had the common cold and this is one of the diseases used for clinical assessment that predetermines the need for a HIV test on the children. The infected children are often the index in families and contribute to the diagnosis of the mother and / or father. A study done in Malawi among HIV infected and uninfected children who survived their first year of life were prospectively followed to assess the levels of mortality and related risk factors during the second and third years of life. They were followed every three months for 36 months. 702 children were enrolled and 83 children died during follow-up. The mortality rate per 1000 person years of observation was 339.3 among HIV infected children, and their cumulative proportion surviving to age 36 months was 55%. By age 32 months none of the severely immuno suppressed (CD4%, <15%) had survived. The major causes of death among infected children were wasting and respiratory conditions. Although all HIV infected children had received childhood immunizations, mortality was high. Management of these children should include aggressive microbial treatment and evaluation of prophylactic regimens should be considered (Mulholland, 1999). This backs up what was the situation in the children homes whereby despite the fact that all the children were immunized, most of them still suffered from respiratory conditions and failure to thrive.
The use of ARV's was associated with an incidence of some opportunistic infections and not others. Diarrhoea incidence was present disregarding the type of ARV used while skin infection incidence was highest among the children on the ARV's that are Nucleoside Analogue Reverse Transcriptase Inhibitors. This is attributed to the fact that around 50% of the patients on these ARV's cannot tolerate the drug (Check, 2000). The children on a combination of Lamivudine had fewer incidences of diseases and this can be related to a study performed on 77 patients who were on ARV therapy with a combination consisting of Lamivudine and other drugs. 93% of them had consistently undetectable levels of virus in their blood (Ainsworth, 2000). Most of the children on ARV therapy had a combination consisting of the first two groups of ARV's (the Nucleoside Analogue Reverse Transcriptase Inhibitors and the Non-nucleoside Reverse Transcriptase Inhibitors) and rarely consisted of a combination of the Protease Inhibitors ARV's. This may explain the higher incidence of the six common opportunistic infections. The taking of a combination of the HIV drugs is aimed at reducing cell mutation, boosting the immune system by decreasing the resistance to a particular therapy, halting or delaying conditions favourable to the development of opportunistic diseases - by up to 90% of cases so far in the range of trials (Richard, 2002). Depending on a person's overall condition and individual needs, some combinations of drugs work better than others. In Netherlands, HIV infected children are treated with a combination of two nucleoside analogs and a protease inhibitor. This therapy improves the quality of life, increases life-expectancy of HIV infected children and is well tolerated. However, the current combination therapy is complex and puts a burden on the child and the family. Here, intensive support of the family by a team of health care and social workers is
usually necessary to make ARV combination therapy possible. Care directed at the individual needs of the child and family is crucial to help this vulnerable group of children and families in our society (Geelen et al., 1999).

Generally, use of AZT appeared to have a significant effect on gain in body weight. Most of the children who were on ARV’s were less likely to gain weight (Singha and Austin, 2002; Kelly, 2003; Tang and Smit, 1998) as compared to their counterparts who did not use AZT. This is in accord with other studies which report on the side effects of ARV’s among CLWHA. In spite of a dearth of information on comparative studies of ARV use among the children and adults the evidence available on ARV use among the PLWHA may be extrapolated for ARV use among the children. Additionally, the evidence of ARV toxicity among the infants as a salient indication of the extreme impacts of ARV’s on the immune system. In view of this, the interaction between the use of ARV’s and nutritional approaches to HIV/AIDS management merit attention (Piwoz and Preble, 2000). To date, extant evidence show that the utilization of nutritional supplements can mitigate the severe impacts of ARV’s on patients health (Mcomsey and Lederman, 2002; Romeyn, 2002; Singha and Austin, 2002; Kelly, 2003 and Tang and Smit, 1998).

The clinical follow-up of HIV infected children needs to be done at clinics and that is why the homes without clinics within them had to go to the public hospitals or other private ones to seek medical attention for these children. The homes with clinics had fewer opportunistic infections than the ones without. This confirms the importance of a clinical follow-up at primary care for those children without severe immunocompromised
systems especially for the children over the age of 1 to 2 years. These children are likely to require fewer admissions than the children who are less actively managed as seen in the percentage of children who are admitted per home especially for the homes with clinics.

In the homes that had children above the age of years, 60% of the children had been informed of their status while the other 40% did not know their status and blamed their illnesses on the weather conditions or food in the case of diarrhoea. The children who knew their status never questioned the drugs they were being given always brought to the attention of their caregivers any illness they had (Mulholland, 1999).

The care-givers in each of the homes had basic skills in the care and support of people living with HIV/AIDS. This enabled them to provide better care and support to the children. The health care workers had to be adequately counselled and need to be sympathetic to the individual children's needs (Richard, 2002).

5.4 Nutritional Care

Most of the homes (80%) provided the infants with formula milk. None of the children were being breastfed because they had no mothers with them and the mothers even though alive could not breastfeed because of their HIV status (risk of MTCT is 30%). This may be solved by some research studies done in the year 2000 in South Africa by the South African Research Council that have shown that all the HIV in breast milk is killed when the milk is heated to 56 to 63 degrees centigrade for about 20 minutes. At
these temperatures, 80% of the anti-bodies and other nutrients are preserved in the milk. So for virtually no expense, an HIV positive mother can provide her baby with all the benefits of breast milk without exposing the infant to HIV (Mcomsey and Lederman, 2002).

All the homes (100%) provided the CLWHA a balanced diet. The study shows that certain food nutrients consumed by the children had a significant relationship to the incidence of some opportunistic diseases and the childrens’ gain in weight. Children who consumed vitamins during each meal had lower incidences of pneumonia and tuberculosis. Some studies done have shown that HIV/AIDS patients are prone to vitamin deficiencies due to malabsorption of vitamins (Piwoz and Preble, 2000) so the consumption of vitamins prevented vitamin deficiencies. In this study the CD4 cell count of the children was not emphasized on, studies have shown that the most glaring manifestation of nutrient deficiency is low CD4 counts among the HIV patients.

Vitamin supplementation was given to less than 50% of the children, yet studies show that supplementation of vitamins like vitamins C and E has to be done as most HIV/AIDS victims suffer from malabsorption of Vitamins C and E. Vitamin deficiency goes hand in hand with higher incidences of diarrhoea, lactic acidosis and skin infections (Romeyn, 2002). Studies have shown that HIV/AIDS victims need 6-25 times the recommended dietary allowances of some nutrients and this needs to be adhered to in the childrens’ homes.
In this study, food supplements were given to 10% of the children. As much as food supplements should not replace a well balanced diet, they can boost a patient’s capacity to resist and contain infection. Additionally, the use of supplements is known to mitigate the adverse impacts of ARV’s use in HIV/AIDS chemotherapy (Singha and Austin, 2002). A balance should be struck between ARV use and micronutrient intake. Available evidence shows that the absorption of Riboflavin is inhibited by Elavil and Amytriptyline drugs used for the treatment of leg pain among HIV/AIDS patients (Richard, 2000).

Some of the children (60%) were given Vitamin A supplementation and were given foods rich in Vitamin A. they were given carrot juice to take which is a major source of vitamin A. the role of Vitamin A in HIV infection is emphasised because of the role of Vitamin A in affecting child morbidity and mortality as well as early observations that Vitamin A status was associated with increased risks of MTCT of HIV (Semba et al., 1994), HIV viral load in breast milk and vaginal secretions (John et al., 1997). Vitamin A deficiency causes anaemia, growth retardation, increases incidence and/or severity of many infections (including diarrhoea, pneumonia, measles, other respiratory infections), and it increases the risk of child mortality (West et al., 1999).

A study in South-Africa showed that Vitamin A supplementation of HIV infected children reduced diarrhoea morbidity by about 50% in one study (Coustoudies et al., 1995) and improved immune status in another study (Hussey et al., 1996). In Tanzania, Vitamin A supplementation reduced all-cause mortality by 63% among HIV infected
children aged 6 months to 5 years and was associated with a 68% reduction in AIDS related deaths and 92% reduction in diarrhoea related deaths (Fawzi et al., 1999).

Existing data suggests that nutrition interventions aimed at increasing energy and protein intakes of CLWHA may help to build body reserves and reduce a person's vulnerability to weight loss and wasting (direct consequences of diarrhoea and other opportunistic infections). Improvements in micronutrient intake and status may also help strengthen the immune system and reduce the adverse effect of infection related oxidative stress while lengthening survival time. Both interventions may help the CLWHA to remain relatively healthy, prolonging the interval from initial infection to development of AIDS and improve their quality of life. At later stages of the disease nutrition support is largely palliative and focused on the dietary management of conditions that affect appetite, digestion and comfort when eating. These interventions are focused primarily on maintaining intake during bouts of illness and recuperative feeding when acute symptoms subside (Piwoz and Preble, 2000).

The children who took proteins and carbohydrates had a lower incidence of skin infections, oral thrush and tuberculosis. The children who took milk, had a higher incidence of oral thrush (63%) of the children were at increased risk for oral thrush. The incidence of common colds was also significantly dependant on the intake of milk (67% of the children on milk got common colds). This shows that disease incidence was consistent with unmet nutritional needs.
In this study, gain in body weight was significantly associated with the children's nutritional and health status. The findings of the association between illnesses such as diarrhoea concurs with the findings by Krhoda 1991, where fever, vomiting and diarrhoeal diseases emerged as important determinants of nutritional status with diarrhoeal disease causing a 28.6% reduction in expected weight gain especially in children 12-15 months of age.
CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

1. There are three overlapping processes that can result to weight loss and wasting in the CLWHA. Namely, reductions in food intake, nutrient malabsorption and metabolic alterations.

2. Nutrition interventions such as (vitamin supplementation, formula feeds and healthy drinks such as carrot juice) can slow or reverse the process and subsequent consequences of weight loss and wasting (direct consequences of diarrhoea and other opportunistic infections).

3. Specific ARV therapy combinations may suppress the HIV activity in the body and slowdown or even halt the process of the disease.

4. CD4⁺ cell absolute number and immunity markers of disease progression in HIV should be obtained at baseline prior to initiation of any ARV treatment.

RECOMMENDATIONS

1. The children homes should aim at increasing the energy and protein intakes of the children.

2. There should be improvements in the micronutrient intake and status so as to help strengthen the immune system and lengthen survival time.

3. There should be more emphasis on palliative nutrition support at the later stages of the disease that focus on the dietary management of conditions that affect appetite, digestion and comfort when eating.

4. There should be an organised comprehensive framework linking hospitals, clinics, children homes, NGO’s and other community services so the health services cope better with the rising number of OVC and CLWHA.

5. HIV care needs to take place within a holistic framework that attends to the social, psychological and physical well being of the individual.
REFERENCES


APPENDIX I: QUESTIONNAIRE

QUESTIONNAIRE CONSENT FORM

I am Kavutha Mwikali a Master of Public Health and Epidemiology student at Kenyatta University. I am carrying out a research on the care given to Children Living with HIV/AIDS in Children Homes in Nairobi. I am interested in this Children Home and would like you to participate in this study – with your written consent. The information you give is very important and will only be used for purposes of this study. Whatever information you provide will be kept in total confidence.

Please sign below in consent.

I, the undersigned, agree to participate in the study.

Name: ........................................
Signature .................................. Date ............................

Name of the Home: ..........................................................

Serial Number of the questionnaire ..............................
QUESTIONNAIRE ON THE CARE AND SUPPORT GIVEN TO CHILDREN LIVING WITH HIV/AIDS IN CHILDREN HOMES IN NAIROBI.

1. Name of home

2. Name of person being interviewed and position in home.

3. When was the home established?

4. Who are the main sponsors of the home?

5. What are the procedures for admission into the home?

6. Which kind of children do you admit?

7. When did you begin admitting HIV positive children?

8. What is the total number of children in the home recently?

9. How many of them are HIV positive?
10. Do you admit all qualified children?

0.) No

1.) Yes

Explain your answer

11. Do you give priority to the HIV positive children over the other children?

12. Do you experience cases of culture shock from the children as a result of change of environment?

0.) No

1.) Yes

If yes, how do you deal with these cases?

13. Do you have any services such as counseling to parents or guardians of the admitted children?

Explain your answer.

14. Do you run any clinic in the institution?

0.) No

1.) Yes

If no, how do you take care of the children when they fall sick?

If yes, do you have enough qualified staff? Explain.
15. Children of different age groups need different attention. How do you deal with this in this institution?

16. If the institution has informal groupings, how are they formed and organised? (Probe for the attention paid to the HIV positive).

17. How do you take care of the spiritual needs of the children in the home?

18. Do you have any sex education programs in the home?
   If you so, which is the criteria for inclusion in the program?

19. Taking care of children needs a long association with a mother/father figure. How do you take care of this in your home?

20. An essential part of child training and upbringing is done through leadership training and work socialization. How do you ensure this is done in your institution? (Probe whether the HIV positives are included in these programs).

21. How many care givers do you have in the home?

22. Could you kindly give their names, qualification and date they joined?

   Name      Year joined      Academic qualifications      Profess Training
23. Do you have volunteers?

If you do, how many are they and what is the criterion for appointing them?

24. What challenges do you face in providing palliative (physical, psychosocial, nutritional and medical) care for these children?

25. What in your opinion is better? – Home-based care or institutional care?
BACKGROUND INFORMATION OF THE CHILD

1. Name of Home:

2. Post of Person Interviewed:

3. Child's Code:

4. Age of Child:

5. Sex of Child:
   - Male
   - Female

6. Parents of Child
   - Father
     - Alive
     - Dead
     - Unknown
   - Mother
     - Alive
     - Dead
     - Unknown

7. Is the child attending school?
   - No
   - Yes
8. School attending:

9. Where did the child come from; that is who referred this child here?

10. Do you have any idea of how the child acquired the HIV/AIDS infection?

   0. Mother-to-child transmission (MTCT)
   1. Sexual abuse
   2. Other (specify)

11. Has the center conducted any confirmatory tests?

   0. No
   1. Yes
      a.) If yes, When?
      b.) If no, Why?

12. Are there regular checks on the Full Blood Count and T$ cell counts?

   0. No
   1. Yes
      a.) If yes, how often?
      b.) If no, why?

13. Do you carry out regular medical check-ups on this child?

   0. No
   1. Yes
      If yes, when was the last time this was carried out?

14. Is the child under any antiretrovirals therapy?

   0. No
   1. Yes
      If yes, which one(s)?
15. Since the date of admission, has the child suffered from any opportunistic diseases?

0. NO

1. Yes

If yes, indicate the disease, date of infection and type of treatment given:

<table>
<thead>
<tr>
<th>Disease</th>
<th>Date of infection</th>
<th>Date of treatment (inpX/outpx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T.B.</td>
<td></td>
<td></td>
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<tr>
<td>Skin infections</td>
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<td></td>
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<tr>
<td>Oral Thrush</td>
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<tr>
<td>Diarrhoea</td>
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<tr>
<td>Common Cold</td>
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<tr>
<td>Pneumonia</td>
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<td></td>
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<tr>
<td>Herpes Zoster</td>
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<td></td>
</tr>
</tbody>
</table>

16. Apart from the opportunistic diseases named above, has the child suffered from any other diseases:

0. No

1. Yes

If yes, specify which diseases:

17. Has the child been immunized?

0. No

1. Yes

If yes, which immunization has the child been given?

18. What was/is the child’s body weight in kgs:

Now ........................................

Six months ago ____________________
19. Give any other comment on the child’s medical history/background?

20. Does the child have enough clothing?
   0. No
   1. Yes

21. Does the child share clothing with other children in the home?
   0. No
   1. Yes

22. Does the child sleep in a special dormitory with the like (HIV/AIDS) children?
   0. No
   1. Yes

   Explain your answer.

23. Does the child share beddings/sleeping facilities with another child?
   0. No
   1. Yes

   If yes, with whom
   0. A HIV positive child
   1. A HIV negative child
   2. Other

24. Does the child have adequate sleep?
   0. No
   1. Yes

   If no, what could be the problem?
25. For children of school going age, do they attend school?

0. No
1. yes

If yes, where does the child go to school and who meets these expenses?

26. Does the child normally feed well?

0. No
1. yes

27. Are there behavior patterns indicating loss of appetite in the child?

0. No
2. yes

28. Does the child receive any food supplements?

0. No
1. Yes

29. Give a 24-hour recall of the child’s diet:

<table>
<thead>
<tr>
<th>Breakfast</th>
<th>Snack</th>
<th>Lunch</th>
<th>Snack</th>
<th>Supper</th>
</tr>
</thead>
</table>

30. Apart from the normal institutional menu, is the child provided with any special food?

0. No
1. Yes

If yes, what food is the child given?
31. Has the child shown any sign of malnutrition over the last six months?
   0. No
   1. Yes (Specify)

32. Has the child experienced any ingestion problems?
   0. No
   1. Yes (Specify)

33. If the child is below one year is he/she provided with formula milk?
   0. No
   1. Yes

   If yes, which ones do they take?

   How often a day are they given the above milk?

   At what age was this child weaned/ what age will this child be weaned?

   Thank you for your co-operation.

   Enjoy your day
Dear Madam,

RE: RESEARCH AUTHORISATION

Please refer to your application for authority to conduct research on: An Assessment of the care and support given to HIV/AIDS children in Homes and orphanages in and around Nairobi. I am pleased to inform you that you have been authorised to conduct research in Nairobi for a period ending 30th August 2004.

You are advised to report to the Provincial-Commissioner, the Provincial Director of Education and the Provincial Medical Officer of Health Nairobi before embarking on your research project.

You are further expected to deposit two copies of your research findings to this office upon completion of your study. It is noted that the research is a requirement in partial fulfilment for the award of Master of Public Health and Epidemiology (M.P.H.E.) Degree by Kenyatta University.

Yours faithfully

A.G. KAARTA
FOR: PERMANENT SECRETARY

C.C.

The P.C. - Nairobi
The P.D.E - Nairobi
The P.M.O.H - Nairobi