

Chapter 1

Introduction

1.0 HIV/AIDS Situation in Kenya

The Kenya Demographic and Health Survey (KDHS, 2003) estimates that 1.2 to 1.5 million people in Kenya between the ages of 15 to 49 years are infected by HIV. These findings and other surveys have also revealed the following:

- According to the KDHS, the average prevalence of HIV infection in Kenya is 7%. The range across the country is 3% to 15%.
- For every infected man there are about two infected women.
- Among 15 to 19 year olds, the ratio of infected women to men is 3:1.
- The peak prevalence (13%) is among women aged 25 to 29 years.
- The estimated rates of mother-to-child transmission range between 30% and 40%.
- Among adults, the epidemic has decreased the average life expectancy by eight years or more, from 57 years to 47 to 49 years.
- Kenya has an estimated burden of close to a million orphans and vulnerable children (OVC) as a result of HIV/AIDS.
- The occurrence of opportunistic infections (OIs) has increased. This has resulted in 45% to 70% of beds in public hospitals being occupied by PLWHA.

1.1 Food Security and Nutrition Situation in Kenya

Food security: About 47% of the Kenyan population does not have secure access to food resources to adequately meet their daily needs. In Kenya, the high level of food insecurity is related to poverty and a reduction in agricultural production. HIV/AIDS reduces a household's ability to produce and buy food. Adults with HIV are less able to work on their land or earn income from other activities. Increased health costs require household money that is needed for food.

Nutritional status: In Kenya, about 31% of children under five years old are stunted (too short for age) and about 20% are underweight. Rates of underweight and stunting are approximately 10% higher in rural areas than in urban areas. In addition, anaemia affects three out of every four children under five years; one out of every two women of reproductive age; and one man out of every five men. About half of Kenyan children under five years old, and of women of reproductive age, are also at high risk of zinc deficiency. Vitamin A deficiency remains prevalent among children and women in general, and among specific sub-groups of men. Vitamin A, zinc and iron deficiencies underlie widespread multiple micronutrient deficiencies that constitute significant public health problems (MoH, 1999). It is estimated that over 23,000 deaths of children are related to increased susceptibility to infections related to vitamin A deficiency, and that approximately 70% of children in Kenya grow up with lowered immunity. Overall, the nutritional situation of the Kenyan population remains precarious.

Malnutrition and disease: HIV compromises the immune system resulting in increased susceptibility to severe illnesses. Malnutrition exacerbates the effects of HIV by further weakening the immune system, reducing quality of life and life expectancy. HIV increases the risk of malnutrition by increasing nutrient needs and reducing food intake and nutrient absorption. Nutritional care and support should be an integral component of the HIV/AIDS comprehensive care package. Nutritional interventions are required by all infected persons, irrespective of whether they are on antiretroviral therapy (ART) or not, and at all stages of the disease.

1.2 Rationale for the Guidelines

The action framework for the fight against the HIV/AIDS epidemic in Kenya focuses on three priority areas: prevention of new infections, improvement of the quality of life of people infected and affected by HIV/AIDS, and mitigation of the socio-economic impact of HIV/AIDS. A key activity in improvement of quality of life of people infected by HIV is the provision of nutritional interventions (Kenya National HIV/AIDS Strategic Plan – 2005 to 2010). The national HIV/AIDS policy and several guidelines have articulated the significance of nutrition within the continuum of care and support for those infected with HIV. Specifically, nutrition interventions are given attention in *The Guidelines for Nursing Care and Home Based Care*. Although limited in scope and coverage, information provided in these guidelines and others developed by service non governmental organizations were the primary source of information for service providers involved in care and support for People Living with HIV/AIDS (PLWHA). There is need for national guidelines to enable consistent programming and services based on sound technical advice.

The *Kenya National Guidelines on Nutrition and HIV/AIDS* provide recommendations and information on nutritional care and support for PLWHA, including energy and nutrient requirements; the interaction between food, nutrition and drugs (including ART); and nutrition considerations for special groups such as children born to HIV-infected women, children who are HIV positive, and pregnant and lactating women. For the Kenyan health worker with the obligation to provide quality and comprehensive care—including food and nutritional services—these guidelines will be a valuable source of information for enhancing service provision to those affected.

1.3 The Goal and Purpose of Nutritional Care and Support for PLWHA

1.3.1 Goal of the Guidelines

The goal of nutritional care and support for PLWHA is to improve nutrition, health, quality of life and duration of survival of people infected with HIV.

1.3.2 Purpose of the Guidelines

- To provide a framework for informing policy makers and development partners of plans for nutrition intervention for PLWHA.
- To establish a consistent set of nutrition recommendations for PLWHA in Kenya in order to improve their nutritional status, manage symptoms, and promote response to medical treatment.

- To define actions that service providers need to undertake in order to provide quality care for and support to PLWHA at various contact points, including basis for developing communication messages and design of nutrition packages.
- To promote advocacy at all levels and mobilize support for prevention of malnutrition among the general population, with particular focus on PLWHA and for the integration of nutrition and HIV/AIDS services.

The Guidelines can be used in conjunction with the following important publications:

- a) Government of Kenya. Ministry of Health. NASCOP. *PMTCT Training Curriculum*; Kenya PMTCT project. "A short course for health workers providing PMTCT services in areas with limited resources and high HIV prevalence." 2002.
- b) Government of Kenya. Ministry of Health. NASCOP. *Guidelines to Viral Therapy in Kenya*, 2001.
- c) Government of Kenya. Ministry of Health. *National Home-based Care Programme and Service Guidelines*, May 2005 (in draft).
- d) Government of Kenya, Ministry of Health. *Home Care Handbook: A Reference Manual for Home-based Care for People Living with HIV/AIDS in Kenya*, 2002.
- e) WHO/FAO. *Living Well with HIV/AIDS: A Manual on Nutritional Care and Support for People Living with HIV/AIDS*, 2002.
- f) Government of Kenya. Ministry of Health. *Reference Manual on Nutrition and HIV/AIDS in Kenya*, May 2005 (in Draft).
- g) Kenya AIDS NGOs Consortium. *Information Package for People Living with HIV/AIDS*, 2000.
- h) National AIDS Control Council. *Kenya National HIV/AIDS Strategic Plan 2005/6 - 2009/10*. 2005.
- i) Government of Kenya, Ministry of Health, Nutrition Division, UNICEF, WHO. *Infant and Young Child Feeding Guidelines in the Context of HIV/AIDS*, 2004.

Chapter 2

Relation between Nutrition and HIV/AIDS

2.0 Introduction

Nutrition refers to how food is processed and utilized by the body for growth, reproduction and maintenance of health. Foods contain different nutrients that include water, carbohydrates, proteins, fats, vitamins and minerals. Good nutrition is important to ensure survival and that critical functions operate, including:

- The body producing energy for survival, movement, work, and temperature control.
- Growth, development, replacement and repair of cells and tissues.
- Chemical processes such as digestion, metabolism and maintenance.
- Protection from illness, fighting infections, and recovery from illness.

2.1 Malnutrition

Malnutrition defines a state when the body does not have enough of the required nutrients (under-nutrition) or has excess of required nutrients (over-nutrition). In Kenya, under-nutrition is widespread and often thought of as the same as malnutrition.

2.1.1 HIV Infection and the Immune System

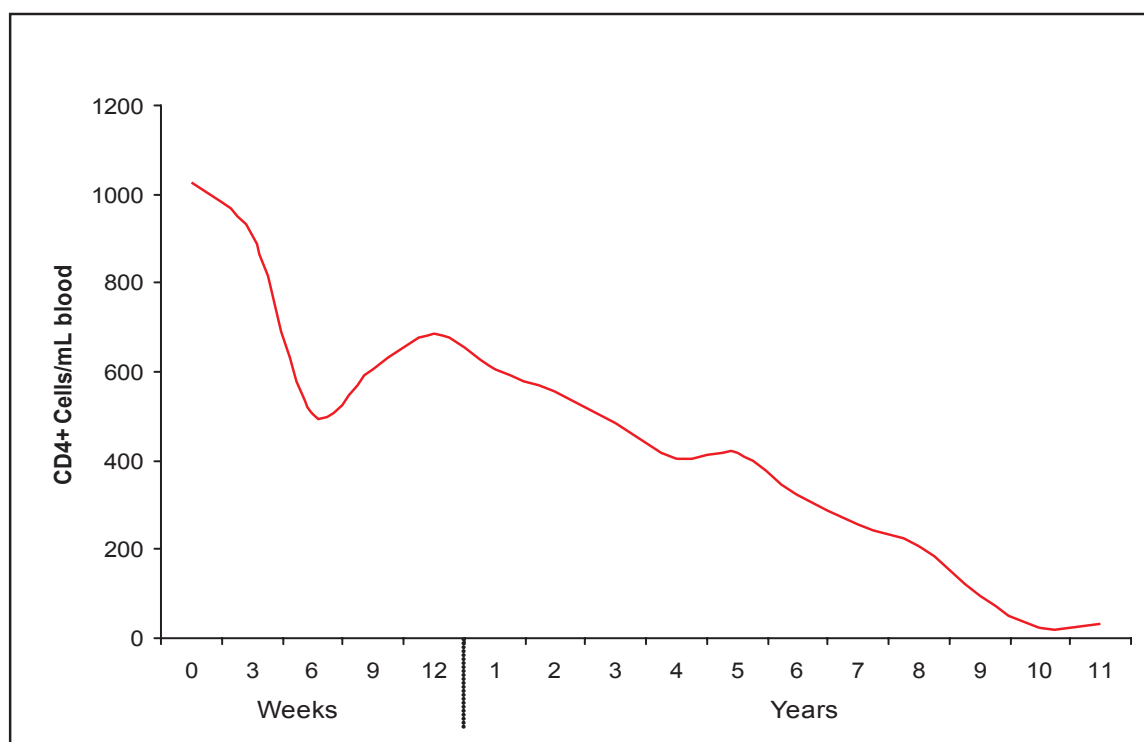
HIV attacks and impairs the body's immune system. HIV infection progresses slowly and may take years before the infected person shows persistent signs of illness (Figure 2.1). During this period, the virus attacks and destroys defence cells known as CD4's. CD4 cells are critical to the immune system functions of the body. Unlike other infections, it is practically impossible for the body to naturally eliminate HIV.

The length of time it takes for untreated and asymptomatic HIV infection to become a symptomatic disease depends on several factors, including the general health and nutritional status of a person before and during the infection period. For individuals with adequate food and health resources, the average time for an HIV-infected adult to develop to full-blown AIDS is approximately ten years (Figure 2.1). In resource-poor settings, such as in Kenya, HIV's progression to full-blown AIDS may take a shorter time because a majority of people have various nutritional deficits and health problems. The emergence of opportunistic infections (OIs) marks entry into full-blown AIDS. At this point, the body's ability to fight against infection from viruses, bacteria, and parasites, and against non-infectious diseases such as cancer and blood disorders, is significantly weakened.

When the immune system is functioning optimally, it helps slow the progression of HIV into AIDS, and increases survival. The development and full function of the immune system requires an array of essential micronutrients and adequate macronutrients, achieved through good nutrition. Generally, immune suppression responds rapidly to nutrition intervention.

Stages and CD4 Counts of HIV Infection Progressing to Full Blown AIDS for Adults

Early Stage	Intermediate Stage	Late Stage
<p>(Asymptomatic)</p> <ul style="list-style-type: none"> • Weight loss of less than 5%. • Increased energy requirement (10% more). <p>a) Largely no related symptoms (except in the first few weeks)</p> <p>b) Generalized lymph glands enlarged.</p> <p>c) Immune system weakening and recurrent upper respiratory tract infections.</p> <p>d) Normal activity.</p>	<p>(Early symptomatic)</p> <ul style="list-style-type: none"> • Increased energy requirement (20% more). • Weight loss greater than 10%/failure to thrive. • Persistent fever and diarrhoea. • Early opportunistic infections: <ul style="list-style-type: none"> ◦ Mucous membrane and skin infections (e.g. Candidiasis) ◦ Recurring respiratory tract infections. • Normal or partial activity (bed ridden for less than 50% of the time). 	<p>(Full blown AIDS)</p> <ul style="list-style-type: none"> • Increased energy requirement (30% more). • Weight loss greater than 10% and wasting. • Multiple signs and symptoms. • AIDS defining OIs: <ul style="list-style-type: none"> ◦ Chronic diarrhoea ◦ Pneumonia ◦ Candidiasis ◦ Tuberculosis (TB) ◦ Kaposi sarcoma • Weight loss/wasting • Weak and low activity (bed ridden for more than 50% of the time).



Modified from I. Roitt, J. Brostoff, P. Male Immunology, 6th Ed. 2002

Figure 2.1: Stages from HIV infection to full blown AIDS (table); and CD4 counts for average disease progression of untreated HIV-1 infection (graph)

2.2 The Link between Nutrition and HIV/AIDS

The link between HIV infection and nutrition can be summarized as follows:

- HIV infection increases nutrient requirements and at the same time impairs nutrient intake and absorption.
- HIV/AIDS increases the risk of malnutrition through altered food intake and/or its nutrient absorption and utilization.
- Poor nutrition increases risk of OIs and accelerates the progression of HIV to AIDS.
- Malnutrition and HIV/AIDS are synergetic and together create a vicious cycle that additively weakens the immune system.

The emergence of OIs further increases energy and nutrient-needs. Moreover, psychological stress affects nutrient intake, and can contribute to the risk of malnutrition. In a real sense, the relationship between nutrition and HIV/AIDS is a vicious cycle (Figure 2.2).

The Cycle of Malnutrition and HIV Infection

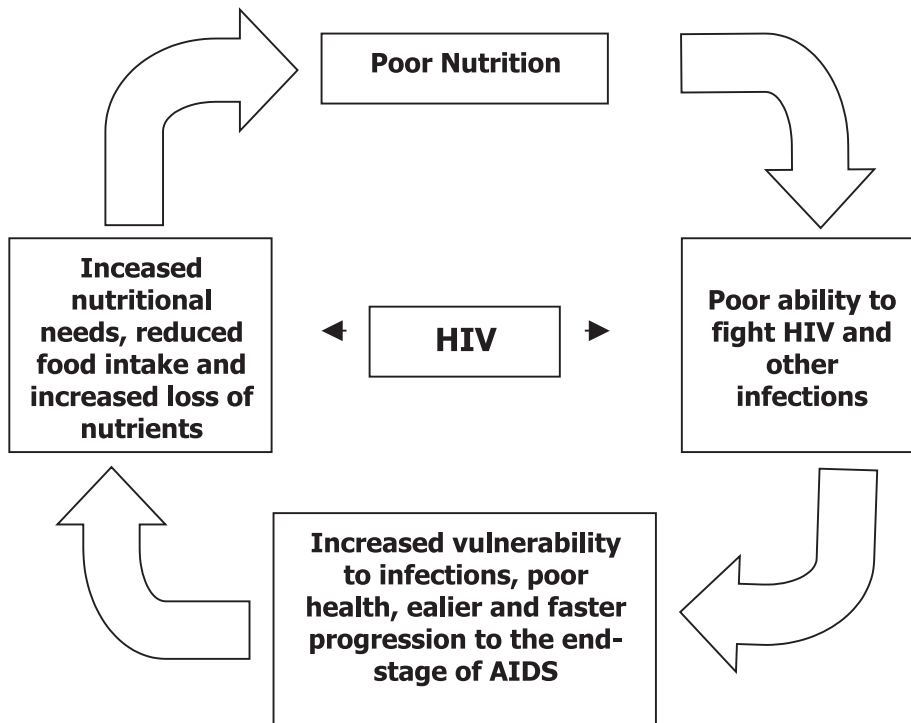


Figure 2.2: The cycle of malnutrition and infection in the context of HIV/AIDS

Effective use of viral drugs prolongs life and improves quality of life. Nutrition as an essential complementary intervention to antiretroviral treatment (ART) will enhance rehabilitation, immunity, and adherence to ART.

2.3 Characteristics of HIV/AIDS-Related Malnutrition

The following nutrition-related characteristics are commonly observed in PLWHA in the later stages of the disease:

- Weight loss, which in late stages has been described as 'slim disease,' and eventual severe wasting.
- Progressive muscle wasting and loss of fat under the skin giving rise to accelerated aging.
- Reduced immune competence leading to increased susceptibility to infections.
- Hair changes especially thinning and loss of hair.
- Diarrhoea and poor absorption of nutrients.

Maintenance of good nutrition among PLWHA improves survival and quality of life.