

CHAPTER 1

BACKGROUND AND ORGANISING FRAMEWORK

Human Immunodeficiency Virus (HIV) is an immunological disease caused by a retrovirus and HIV causes Acquired Immunodeficiency Syndrome (AIDS) (Alexander & Fawcett, 2001). HIV has many medical / surgical nursing implications some of which include increased workload, fighting stigma, fear of getting infected and role change (OFID and FDP, 2006).

Tests to diagnose HIV include HIV antibody tests, which measure the presence of antibodies, examples are HIV ELISA, immuno fluorescence and western blot assays (WHO, 2004). The P24 antigen test measures actual virus in the blood. Virologic assays include HIV DNA Polymerase Chain Reaction (PCR) and HIV/RNA detection methods and culture. People Living With HIV (PLWH) are those people who are found to be positive to one or more of these tests (WHO, 2004). HIV has no cure once it is diagnosed it is for life. Throughout the lifespan there is increased need for utilization of available nutrition options to maintain quality of life (Piwoz and Preble, 2000).

According to the World Health Report 2004, about 20 million people have so far been killed by HIV worldwide and 34 to 46 million people are living with HIV/AIDS. In 2003 Africa was home to two thirds of the world's population living with HIV yet the population of Africa is only 11% of the world population (WHO, 2004). Countries in the southern and eastern parts of Africa are particularly affected Botswana, Namibia, Swaziland and Zimbabwe have between 20 and 26 percent of adults aged 15 to 49 years who are HIV infected (World Health Report, 2004). Due to the HIV scourge life expectancy has decreased by 20 to 40% in South Africa, Uganda, Kenya, Botswana,

Zambia and Zimbabwe (United Nations Programme on HIV/AIDS) (UNAIDS, 2000). According to UNAIDS,(2000), 65% of all new adult HIV infections occurred in young men and women who are less than 30 years old. The HIV epidemic has created a population with relatively few persons older than 40 years to care for the young and the elderly. African countries are already struggling with conditions of extreme poverty such that diverting scarce resources from other development efforts such as promoting food security, improving health services and improving education and productivity has far reaching effects to the quality of life of PLWH.

Problem Statement

Quality of life is a relative term and is best described by each client at a given stage of life (Luckman and Sorensen, 1993). Quality of life includes several domains such as physiologic state, psychologic state, physical well-being, role functioning and social support (Alexander & Fawcett, 2008). At family level HIV illness has affected family well-being, including caregivers and ability to ensure adequate food and nutrition for the family for 45% of PLWH in the sub-Saharan Africa (UNAIDS 2000). Under such circumstances the quality of life of PLWH is greatly affected. A careful analysis of quality of life among PLWH helps in determining when and what medical/ surgical nursing is needed Alexander & Fawcett, 2008). PLWH suffer psychologically as they are in constant fear for their life and future and face severe hardships resulting from inequality, discrimination and victimization (World Health Report, 2004). Nutritional status affects 50% of the physiologic state of quality of life among PLWH, (Piwoz and Preble 2000). According to Fanta, (2003) HIV causes increased nutritional needs, reduced food intake and increased loss of nutrients. The result is poor nutrition, weight

loss, muscle wasting impaired immune system and increased vulnerability to infections like tuberculosis (Fanta, 22003). HIV causes decreased food consumption through mouth and throat sores loss of appetite, depression, changes in mental state, side effects of medications abdominal pains and house hold food insecurities and poverty for 45% of PLWH in Africa (Piwoz and Preble, 2004). All these factors affect utilization of available nutrition options and quality of life among PLWH.

Malnutrition associated with HIV infection has serious and direct implications for the quality of life of PLWH (WHO, 2000). It affects entire families when infected adults become too debilitated to work steadily and are unable to provide for themselves and their dependents and require continuous nursing care during bouts of illness (Piwoz and Preble, 2004). The relationship between utilization of available nutrition options and quality of life among PLWH can be understood by considering the effect of HIV on body size and composition that is weight, lean body mass, body cell mass and the effect on the functioning of the immune system (Piwoz and Preble, 2004). Nutrition plays a role in HIV infection (Macallan, 1999c) Malnutrition impacted negatively on quality of life of PLWH by causing 70% of hastened HIV progression to AIDS, 35% increase in morbidity and mortality (Semba and Tang, 2001).

The synergy between nutrition, HIV infection and immune function has been well documented (Kennedy et al, 2000). In Africa research has been conducted on nutrition immune function and several diseases, including measles and tuberculosis (Kennedy et al, 2000; Madebo et al, 2007). The majority of researches conducted are to do with nutrition knowledge levels among PLWH (Department for International Development, 2000) (DFI). There is limited research on the utilization of available nutrition options by

PLWH (Wooley, 2004). Quality of life among PLWH has been widely studied but not in relation to nutrition (Piwoz and Preble, 2000). Knowledge of utilization of available nutrition options among PLWH will help medical/ surgical nurses with planning, implementation and evaluation of nursing care for PLWH (Reilley, et al, 2003). Medical/surgical nursing is facing challenges from HIV, which is so demanding of up to date knowledge about HIV (WHO, 2000). It is imperative for medical/ surgical nurses to know that malnutrition in HIV was caused by non-utilization of available nutrition options by PLWH (Piwoz and Preble, 2000). According to Food and Agriculture Organisation, 2001 (FAO) the signs and symptoms of non utilization of available nutrition options which medical / surgical nurses should look for are weight loss, loss of muscle tissue and subcutaneous fat, vitamin and mineral deficiency reduced immune competency and increased susceptibility to infection. In Zimbabwe not much has been documented regarding the relationship between utilization of available nutrition options and quality of life among people living with HIV (WHO, 2008). WHO, 2008 reported 25% use of available nutrition options among PLWH who stay, alone those who take alcohol, those involved in substance abuse and those who spend days away from home (DFI, 2000).

Several medications given to treat Opportunistic Infections have nutrition related consequences which are either caused by nutrient-drug interactions or as a result of drug side effects such as nausea and vomiting that affect the intake and retention of nutrients (USAID, 2000). Correct utilization of available nutrition options has the capacity to reduce the number of hospital visits and hospital admissions of PLWH by 68.3% (Abdale and Kraale, 1995). More than 50% of Opportunistic Infections which PLWH present with

at Opportunistic Infections Clinics (OIC) are caused by non-utilization of available nutrition options and are preventable (Southern African Journal of HIV Medicine, 2006). Utilization of available nutrition can therefore be used to prevent occurrence of opportunistic infections among PLWH by more than 50% thereby improving their quality of life (Southern African Journal of HIV Medicine, 2006). Non-utilization of available nutrition options is costly to PLWH, health institutions and the country at large as 33.3% of costs are attributed to it (Hellerstein et al, 2002). PLWH who do not utilize available nutrition options are subjected to HIV wasting syndrome, which result in reduction of quality of life of about 50 % (Suttman, 2001). In addition non-utilization of available nutrition options results in malnutrition, which exacerbates side effects of antiretroviral treatment (ART) by about 20.3% (Southern African HIV/AIDS Information Dissemination Service, 2007) (SAFAIDS). Inadequate nutrition can therefore reverse the gains of ART by 18%, since adequate nutrition and ART work hand in hand (Stack et al, 2006).

A substantial amount of material, human and financial resources are being channelled towards making nutrition options available to PLWH, therefore if these nutrition options are not being utilized for enhancement of quality of life of PLWH, these resources are being wasted (Daily Fitness and Nutrition Journal, 2003). Studies have shown that 75% of nutritional needs can be achieved by utilizing available nutrition options by PLWH. (USAID, 2006) There is overwhelming literature on nutrition options available to PLWH which is in different languages but the literature is quiet on the nutrition options and utilization (World Health Report, 2004). This study therefore seeks

to establish if PLWH are utilizing nutrition options that are made known and availed to them.

Quality of life of PLWH is further compromised by stigma and discrimination in most social circles, which denies them access to available nutrition options (FAO, 2000). The utilization of available nutrition options by PLWH will help to mitigate about 70.6% of the impact of HIV on quality of life among PLWH, family and society in general (Friis, 1998). Poverty and household food insecurities, lack of time, increased spending for health care and lack of knowledge are major constraints to utilization of available nutrition options (Egal and Valstar, 2001). PLWH are excluded from employment despite pieces of legislation, which were put in place to protect them. As a result they are left with no income for food hence non-utilization of available nutrition options (FAO, 2001). Biologically there are multiple relationships between HIV and utilization of available nutrition options (Friis, 1998). WHO (2000) research shows that the chances of reinfection with the HIV virus might be reduced in individuals who are well nourished. Quality of life among such people is much improved (WHO, 2005). A diet rich in protein, energy and micronutrients like vitamin A contributes 66% resistance to Opportunistic Infections, longevity and improved quality of life among PLWH (Piwoz and Preble, 2000). According to Fanta, (2003) malnutrition which results from non-utilization of available nutrition options causes a 10% decrease in CD4 T-lymphocyte number and a rapid progression AIDS. In PLWH utilization of available nutrition options there is resistance to food borne illnesses, which would further compromise quality of life (Semba, 1999b). Hygienic food handling and access to safe food and water are imperative in uplifting the quality of life of PLWH (Coutsoudis, 1998). According to

Kotler, (1995) HIV- associated wasting syndrome is closely associated with progressive depletion of body cell mass in the late stages of HIV. Studies done by Suttman, (1991) showed above 50% significant prolonged survival in PLWH with body cell mass greater than 30% of body weight or serum albumin levels exceeding 3g/dl implying that a higher body cell mass is associated with higher quality of life and longevity among PLWH. Utilization of available nutrition options contributes to a higher body cell mass of PLWH (Kotler, 1995). Studies conducted by Cotsoudis, (1998) revealed that PLWH utilize 50% of nutrition options made available to them in Africa. The reasons for under utilization of available nutrition options were classified under environmental, psychological and biological. Environmental causes include lack of access to food or non availability of food in the environment due to poverty or HIV illness. Psychological causes are that PLWH are prone to anxiety, depression, forgetfulness and confusion and these cause between 30 and 45% under utilization of available nutrition options FAO and WHO (2002). Biologic causes of underutilization of available nutrition options according to Cotsoudis, (1998) lack of appetite, anorexia, diarrhoea, vomiting and abdominal pains.

Malnutrition results from non-utilization of available nutrition options, if malnutrition is combined with HIV the result is above 10% reduction in CD4 T-Lymphocyte number and compromised immune system (Piwoz and Preble, 2000). HIV affect utilization of available nutrition options by decreasing the amount of food consumed, impairing nutrient absorption and causing changes in metabolism (Piwoz and Preble, 2000). In HIV infection energy consumption increases by 10% to 15%, protein by 50%, demand for utilization of antioxidant vitamins increases and demand for minerals increases (Fanta, 2003). Insufficient antioxidants cause increased HIV replication, which

leads to high viral load, high morbidity, high mortality hence poor quality of life among PLWH (Egal and Valstar, 2001).

Purpose

The purpose of this descriptive correlational study was to describe and examine the relationships between utilisation of available nutrition options and quality of life among PLWH aged between 21-45 years in Chinhoyi. Despite the advances made in HIV /AIDS treatment nurses are lagging behind with regard to the relationships between nutrition and HIV. This study might bridge the knowledge gap and open new areas for research.

Theoretical framework

The study was guided by Roy's Adaptation Model. According to Andrews and Roy (1991a), the person was seen as an adaptive system in constant interaction with the environment. To cope with a changing world, the person used both innate and acquired mechanisms, which are biologic, psychologic and social in origin. Health and illness are one inevitable dimensions of the person's life .To respond positively to environmental changes, the person must adapt. Adaptation is a function of the stimulus a person is exposed to and his or her adaptation level. The person's adaptation level is such that it comprised a zone indicating the range of stimulation that will lead to a positive response. The person was conceptualized as having four modes of adaptation namely physiologic needs, self-concept, role function and relations.

The Roy Adaptation Model focused on the response of the adaptive system to a constantly changing environment. According to Andrews and Roy, 1991, problems in adaptation arise when the adaptive system is unable to copy or respond to constantly

changing stimuli from the internal and external environments in a manner that maintains the integrity of system. PLWH are found in the environment which is one of the model concepts. In the environment PLWH either adapt or maladapt. Maladaptation brings ill health while adaptation, promote good health. Maladaptation and health are the other model concepts. Nursing which is another model concept help PLWH adapt in the environment. Nursing makes PLWH utilize available nutrition options on other study concept and adapt in the 4 modes. These are the physiologic mode, self-concept mode, role-function mode and interdependence mode. Adaptation in the four modes brings quality of life another study concept. *

Person

Was the recipient of nursing care according to Roy This may be an individual, a family or group, a community or society as a whole. Recipients of nursing care may be sick or well and may or may not be adapting positively (Roy, 1989). The person was specifically identified as an adaptive system. The adaptive system had two major internal control processes systems. The regulator sub-system responded automatically through neural, chemical and endocrine coping processes. The cognator subsystems responded to inputs from external and internal stimuli that involves psychological, social and regulator subsystem outputs.

Environment

Roy defined environment as all conditions, circumstances and influences that surround and affect the development and behaviour of a person. The environment comprised of internal and external components and is viewed as constantly changing.

External and internal environment in the form of stimuli were inputs into adaptive system. According to Roy there were three classes namely:

- The focal stimuli,
- Contextual stimuli,
- Residual stimuli.

The adaptive responses were those that promote the integrity of the person in the goals of adaptation, survival growth and mastery. Maladaptive responses threatened the person's survival growth or mastery if they last longer.

Health

According to Roy health was a state and a process of being and becoming an integrated and whole person. Manifestation of health was wholeness and integration of the physiologic components, self-concept, role function and interdependence.

Nursing

Roy, 1991 defined nursing as a system of knowledge, which prescribes a process of analysis and action, related to the core of the ill person. The goal of nursing was the promotion adaptation in each of the four adaptative modes thereby contributing to the person's health and quality of life. Nursing aimed at increasing the person's adaptive responses and decreasing mal-adaptative responses.

This study utilized the four concepts namely adaptation, mal-adaptation, role function and interdependence to guide the research. Non-utilization of available nutrition options was regarded as mal-adaptation. Utilization of available nutrition options was regarded as adaptation. Quality of life among PLWH was considered as the goal of

nursing in which was assumed that if PLWH utilize available nutrition options they will have an improved quality of life.

Utilization of available nutrition options

In this study HIV was the focal stimulus both internal and external. The person was faced with the increased demand of need to utilize available nutrition options for life. Contextual stimuli were to do with person's immediate environment that is availability and non-availability of adequate food supply.

Adaptation

Adaptation was the central feature and a core concept of the model (Fawcett, 1995), and coping meant that the person continually raises his adaptation level in states of health and illness. The person's response was either adaptation or mal-adaptation. According to Andrews and Roy (1991a) a nurse was needed when unusual stressors made the person's attempts to cope ineffective. Linberg, Hunter and Kruszewshi (1994), emphasized that adaptations one of the three nursing perspectives of health, therefore, Roy's emphasis on adaptation provided a distinctive view of the person, one that is developed within the discipline of nursing. In this study Roy's adaptation theory was used to find out how PLWH adapted to stimuli, in this case utilization of available nutrition options and the effect of the adaptation to the quality of life in the physiologic functions, self- concept, role function and interdependence modes. See the diagram overleaf;

Model Concepts

Environment.....Adaptation.....health

- a) Physiologic mode
- b) Self concept mode
- c) Role function mode
- d) Interdependent mode

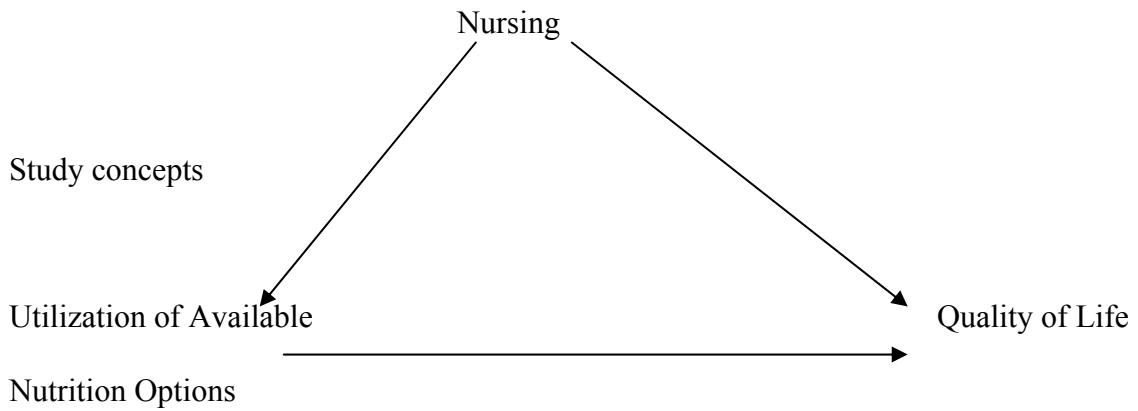


Fig 1: Roy Adaptation Model (1991) (Modified)

Quality of life

Quality of life was looked at using the four adaptive modes in Roy's model namely physiologic mode, the self-concept mode, role function and interdependence mode. The central feature of the study was quality of life resulting from nursing and utilization of available nutrition options.

Physiologic mode

HIV disrupted the physiological integrity by lowering immunity system, impairing nutrient absorption, changing metabolism, decreasing food consumption and increasing nutritional needs and these had a negative effect on quality of life when the person suffers from opportunistic infections regularly and was unable to fend for one self (Fanta, 2003).

Self-concept mode

In HIV infection there was a guilt, feeling of low self-esteem, being stereotyped and being stigmatised. PLWH were constantly worried about their future, fear of death and what others thought of them. PLWH would like to be loved, not to be stigmatized, be free from opportunistic infections and be able to find their own food and yet all these may be impossible and their quality of life is compromise.

Role Function

HIV caused long illnesses which may resulted in long sick leave, loss of job and not able to fend for one self and family. PLWH would want to remain health and continue to perform their roles such as breadwinners, manager, unfortunately in some circumstances they were forced to be dependent on nursing or others for everything. This greatly affected their quality of life negatively (FAO, 2008).

Interdependent mode

HIV may result in losing of friends, discrimination and lack of love from members of the family. As a result PLWH will end up being lonely. The alienation greatly reduced the quality of life of PLWH.

Quality of life according to Roy was attained when there is adaptation in physiologic, self-concept, role function and interdependence modes. The four adaptive modes were related in a cyclical way. Affecting one mode resulted in affecting other modes simultaneous (Fitzpartrick and Whall, 1989). All the four modes can be negatively affected by ART WHO, (2000).

The study of the relationship between utilization of available nutrition options and quality of life will assist medical/surgical nurses in counselling PLWH on feeding options, ART and food and feeding PLWH in the clinical practice.

Conceptual Definitions of Terms

HIV- Human Immunodeficiency Virus

AIDS is a group of illnesses caused by a HIV. HIV can be transmitted through penetrative sexual intercourse, breast milk to infant, from mother to child during pregnancy and or during delivery, contaminated needles and contacts with body fluids of the infected. Currently HIV has no cure once it is for life. (Ministry of Child Welfare, 2002) (MOHCW).

PLWH-People living with Human Immunodeficiency Virus

These are people who tested positive to the method or methods that are used for testing for the presence for HIV. These people are living with the virus in them and they can spread it to others. (Ministry of Health and Child Welfare 2002)

Nutrition

An individual's physiological needs for nutrients, MOHCW, (2002).

Nutrition Options

Food items that are recommended for PLWH, which are available in their settings (MOHCW, 2002).

Utilization

Making use of something (Oxford English Dictionary,2001) In this study , eating food items that are recommended for PLWH .

Quality of life

Was the satisfactory of physical, social, psychological and vocational well- being of an individual (Fallwfield, 1990). It was a very relative and was best described by each person at a given stage of life (Huchman and Sorensen, 1993).

RESEARCH OBJECTIVES

1. To determine quality of life of PLWH aged 21 to 45 years attending Chinhoyi Hospital OIC.
2. To determine utilization of available nutrition options among PLWH aged 21 to45 years attending Chinhoyi Hospital OIC.
3. To examine the relationship between utilization of available nutrition options and quality of life among PLWH attending Chinhoyi Hospital OIC.

RESEARCH QUESTIONS

1. What is the quality of life of PLWH aged 21 to 45 years attending Chinhoyi Hospital OIC.
2. What is the extend of utilization of available nutrition options by PLWH aged 21 to 45 years attending Chinhoyi Hospital OIC.
3. What is the relationship between utilization of available nutrition options and quality of life of PLWH aged between 21 to 45 years attending Chinhoyi Hospital OIC.

SIGNIFICANCE TO NURSING

Knowledge derived from this study provided medical/surgical nurses and other health care workers with correct, consistent, reliable and appropriate information on nutritional core and support for PLWH. (MOHCW, 2002). An understanding of utilization of available nutrition options by PLWH will play an important role in reducing morbidity and improving the quality of life of PLWH (MOHCW), 2002) The knowledge of available food options to PLWH in Zimbabwe will help in encouraging use of recommended foods available locally.

Medical or surgical nursing might be equipped with up to date knowledge on the relationship between utilization of available nutrition options and quality of life among PLWH. The knowledge will be used by surgical nurses to encourage utilization of available nutrition options and enhance improved quality of life any PLWH. The findings of the study might enhance cost containment from reduced occurrence of opportunistic infections and reduced hospital admissions. The study made use of Roy's adaptation

model to clearly explain the place of nursing in the relationship between utilization of available nutrition options and quality of life. Applying Roy's conceptual frame work depicts the interplay between person, nursing and environment and how these ensures attainment of quality of life. The study created new areas of research, add more knowledge to previous researches by either refuting them or supporting them.

CHAPTER 2

LITERATURE REVIEW

Introduction

Literature review assists the researcher to find out what already exists in relation to a problem of interest (Polit & Hunger, 1999). The purpose of this chapter is to review literature on utilization of available nutrition options and the relationship between quality of life and utilization of available nutrition options among PLWH. Nutrition is the sum of the processes involved in taking in nutrients and assimilating and utilizing them. (Dorland, 2001). Roy's adaptation model which will guide the study will be discussed. A brief and precise summary of the literature review will close the chapter.

Quality of life

Accumulating evidence indicates that eating patterns play a major role in the prevention of diseases and in the creation of the capacity for energetic and productive living (WHO, 2004). Research suggests that malnutrition increases the risk of transmission of HIV and is associated with reduction in the quality of life of PLWH (Walsek and Zafonte, 1997). In turn, HIV infection exacerbates malnutrition through its attack on the immune system and its impact on the nutrient intake absorption and utilization (WHO, 2002). HIV also affects the quality of life of PLWH by increasing fatigue, decreasing physical activity and work productivity (FAO, 2000). HIV affects the quality of life of PLWH in the fore modes namely physiologic needs, self concept, role function and the interdependent relations modes as explicated by (Roy, 1991). In HIV the physiologic mode is affected when the immune system is impaired and there is poor

ability to fight HIV and other infections resulting in decreases quality of life among PLWH (Fanta, 2003).

Quality of life in PLWH is further reduced by increases vulnerability to infections like enteric infections, flu, and tuberculosis hence increased replication of HIV. This hasten disease progression and increase morbidity (Fanta, 2003). According to Piwoz & Preble, (2004) the following effects on the immune system; decrease in CD4 T-lymphocyte number CD8 T-lymphocyte bacteria killing capacity. Opportunistic infections will occur as a result of this and this further compromises the quality of life of PLWH. Studies done by Broek et al, (1998) suggest that interventions to reduce or reverse anemia among PLWH may prolong survival and increase quality of life. Researches done by Tang et al, (1996) proved that all vitamins and minerals affected by HIV infection leading to poor quality of life. Studies conducted by Fanta, (2003) revealed that the poor absorption of fats and carbohydrates at all stages of HIV infection of intestinal cells, frequent diarrhoea and vomiting and opportunistic infections. The poor absorption of fats was found to affect use of fat-soluble vitamins such as A and B (Fanta, 2003).

In HIV infection there is increased demand for energy, proteins, vitamins and minerals (Piwoz & Preble, 2004). When there is insufficient mentioned food components there is increased HIV replication, which leads to higher viral loads, increased morbidity and mortality, which affect quality of life (Piwoz and Preble 2004). Studies done by Kotler, (1995) show a progressive depletion of body cell mass in the late stages of HIV/AIDS infection, and a significant prolonged survival in patients with body cell mass >30% of body weight serum albumin levels exceeding 3.0g/dl.

The self concept mode of quality of life in HIV infection is affected by stigma, discrimination and lack of affection at home and at work (FAO, 2008) PLWH at any one time feel worthless, guilt, depressed and isolated (WHO, 2000). The fact that HIV has no cure results in it being equated to death hence the constant fear of death. PLWH have that low self-esteem, that makes them feel that their counterparts with no HIV are better off (SAFAIDS, 2006). These feelings greatly affect the quality of life of PLWH. A poor self-concept affects one's ability to be assertive and be confident at work place and social circles (WHO, 2004). Although HIV is recognized predominantly as a health problem, it also has serious self-concept implications since it affects how PLWH view themselves (FAO, 2008). A supply of ART alone is not enough since it improves the physiologic mode of quality of life leaving the self-concept mode (Roy, 1996). To cater for all the four modes of quality of life the medical/ surgical nursing care specific to the PLWH should be specific, tailor made, comprehensive and all encompassing for holistic results (Walsek and Zafonte, 1997).

The role function mode of quality of life among PLWH is affected in many ways some of which include loss employment, dependence on others for performance of some or all activities of daily living and being unable to continue to be a breadwinner or fend for one's self (FAO, 2000). In some sports PLWH are excluded from participation, this will result in changing roles from sportsmanship to non sportsman (WHO, 2001).

Interdependent role mode of quality of life is affected by the need to depend on others for things such as performance of activities of daily living, provision of basic needs such as food, shelter and clothes (WHO, 2004). Occurrence of opportunistic infections causes PLWH to be more dependent on health works than before hence

increased consumption of medical surgical nursing (WHO, 2004). Management and monitoring of ART cause PLWH to be more dependent on health care workers including nurses (Southern African Journal of HIV Medicine, 2006). Affection, love and support from members of the family are needed most when one has HIV/AIDS (MOHCW, 1991).

Further research is urgently needed on the impact of HIV/AIDS on quality of life in the African context , where HIV/AIDS is spreading rapidly, where malnutrition is endemic and where resources for management of both HIV and malnutrition are extremely constrained (USAID,2000).

Utilization of available nutrition options

According to the Oxford Dictionary, (2001), utilization is making use of something. Nutrition is the process involved in eating, digestion and utilization of food by the body for growth, reproduction and maintenance of health. It also helps understand the relationship between food and HIV. (WHO, 2008) PLWH may not utilize nutrition options for the following reason difficulties with eating or swallowing, altered taste of food, nausea, vomiting, poor appetite, depression, less quantity and quality of food in household, lack of knowledge of nutrition and side effects of medications (WHO, 2008). Utilization of available nutrition options are affected by factors which influence eating behaviour, which are biologic, psychologic and environmental (United states Department of Health and Human services, 2000).

In the biologic factors various neurotransmitters stimulate the process of utilizing nutrition options in people, whereas other processes inhibit it (United States Department of Health and Human services, 2000). Norepinephrine, neuropeptide Y and opioid peptides enhance eating behaviour (utilizing available nutrition options) whereas

serotonin, epinephrine, calcitonin and cholecystokinin inhibit eating (United States Department of Health and Human services, 2000). In the psychologic factors, increasing knowledge of proper nutrition by itself does not necessarily improve eating habits (United States Department of Health and Human services, 2000). Psychological factors can both cause utilization of available nutrition options and non utilization of available nutrition options for example perceiving benefits from good dietary practices encourage utilizing nutrition knowledge (United States Department of Health and Human services, 2000). Emotions, such as depression and personal beliefs of low self- esteem and lack of personal control over one's life will lead to non utilization of available nutrition options (WHO, 2004).

Not utilizing available nutrition options predisposes PLWH to poor nutrition which quickens the progression from HIV to AIDS while utilizing available nutrition options enhances good nutrition which slows progression from HIV to AIDS (WHO, 2008). HIV/AIDS and nutrition are linked in a cyclic way (WHO, 2008). HIV/AIDS and frequent infections increase the nutrition needs of PLWH, if there is no utilization of available nutrition options there is malnutrition which further weakens the body's natural defence thus aggravating this cycle (WHO, 2008).

Sociocultural factors *fasting, spirit mediums etc also* come into play in determining whether one utilize available nutrition options (WHO, 2008). Fasting deprives PLWH of food during the time they are fasting. Ethnic and cultural backgrounds serve as important influences on utilization of available nutrition options regardless of knowledge. Mass media is another aspect of an individual's sociocultural environmental

that exerts considerable influence over utilization of available nutrition options (WHO, 2008). Advertising influence PLWH to eat food which is not recommended.

Many environmental barriers to utilizing available nutrition options exist, examples are eating patterns, accessibility of food, convenience and cost of food items to PLWH (WHO, 2008). The complexities of modern life make it difficult for many individuals to consistently utilize available nutrition options (WHO, 2008). To note, it has been estimated that 8 out of 10 American households report eating out regularly, with an average 3.7 times per week per individual (Thompson & Dennison, 2000).

Utilization of available nutrition options can be affected by access to food (WHO, 2008). HIV / AIDS can affect access to food by reducing a household's capacity to produce and acquire food (WHO, 2008). Stigma can also contribute to uneven allocation of food in the household by favouring healthier members over PLWH this reduces utilization of available options by PLWH (WHO, 2008).

According to Southern Africa HIV/AIDS Information Dissemination service (SAFAIDS, 2006); HIV /AIDS causes food and nutritional insecurity in that people who are sick and are unable to work have their livelihoods threatened. Food and nutrition and nutritional insecurity can precipitate HIV/AIDS prevent effective treatment and utilization of available nutrition options (SAFAIDS, 2006). According to Glimpse's (2006) generally poor and food insecure households are likely to face reduced access to, and ability to use nutrition information about HIV. Adherence to ART and its efficacy are significantly influenced by access to adequate food and nutrition (Valid International Conference on Food Security, Nutrition HIV / AIDS, June, 2006). Medicines are strong and many need to be taken on a full stomach which is difficult for people not utilizing

available nutrition options. Under such scenarios medicines do not matter if the person has not eaten (SAFAIDS, 2006). ART and nutrition affect each other in a reciprocal way that is when there is no utilization of available nutrition options there is poor ART which exacerbate HIV and increase demand for nutrients (SAFAIDS, 2006).

Studies done to investigate intake (utilization) of micronutrients made use of serum or plasma levels (Piwoz & Preble, 2000). High concentration plasma levels of the nutrients under study revealed utilization of nutrition knowledge (Piwoz & Preble, 2000). According to (Piwoz & Preble, 2000) serum concentrations of several nutrients like iron, zinc, retinol, vitamin A decline during the acute phase response, either because they are redistributed in the body or because they are bound to acute phase proteins. Thus, the level of the nutrient in the blood may be a poor indicator of actual nutrient status (Piwoz & Preble, 2000).

Many studies also show a weak correlation between dietary intake and blood levels of the same nutrients, which could lead to the conclusion that increasing intake of the nutrient might not improve nutrient status (Piwoz & Preble, 2000). However the weak correlation might be due to poor reliability or inaccuracy of the intake measurements (due to poor recall or daily / monthly variation in food consumption), or it could result from the phenomenon described above when nutrient concentrations in blood samples are lowered during infections (Piwoz & Preble, 2000).

In order to determine utilization of available nutrition options (taking in nutrients) some studies have assessed the association between individual nutrients (for example vitamin A alone) and HIV outcomes, whereas others have taken into account multiple nutrients (Piwoz & Preble, 2000). The impact of single nutrient intervention as noted

previously may be attenuated when deficiencies of other nutrients are present. Findings in one population may not apply to another population with a different nutritional profile (Piwoz & Preble, 2000). In addition, intakes and status of vitamins and minerals tend to be highly correlated with each other (since all foods contain many different micronutrients, (Piwoz & Preble, 2000). This makes it difficult to distinguish the role of individual nutrients in statistical analyses; and can result in erroneous conclusions about the importance of one nutrient that has been measured over another that has not been directly measured (Piwoz & Preble, 2000).

In order to determine utilization of available nutrition options which will lead to subsequent intake of nutrients, some studies measure changes in body weight, following nutritional intervention whereas others have measured body cell or lean body mass. Measuring changes in body weight is less than optimal, and can be misleading because weight gain or stabilization can occur in the presence of muscle wasting when taking in nutrients increase body fat and water only (Piwoz & Preble, 2000).

The relationship between HIV / AIDS and utilization of available nutrition options involves several complex biological processes (Piwoz & Preble, 2000). Both malnutrition and HIV /AIDS directly affect the immune system, impairing people's ability to resist and fight infection (Piwoz & Preble, 2000). Utilization of available nutrition options may help to prevent or reverse weight loss and wasting associated with HIV infection also may help to preserve independence to improve quality of life and prolong survival among PLWH (Piwoz & Preble, 2000).

For proper determination of utilization of available nutrition options the necessary dietary assessments should be carried out. According to (WHO, 2004) these should

include measurement of weight, haemoglobin, height for adult people living with HIV. (to allow calculation of body mass index and mid upper arm circumference (to allow a crude estimation of muscle wasting) these measurements are compared to the baseline measurements and would yield more information as to utilization of available nutritional options. These measurements are used together with plasma or serum levels of nutrients and asking the person to recall the food taken. However it is not possible to carry out these in one investigation (Piwoz & Preble, 2000).

According to Bijlsma, (2000) home based care programs for PLWH ensures dietary advice as part of positive living. It is easier to monitor and evaluate actual utilization of nutrition knowledge in a home based care setting (Bijlsma , 2000). However, because most programs are home and / or community based with little or no external support, there is limited published literature on utilization of available nutrition options Bijlsma, 2000 by PLWH.

In Nigeria an evaluation of a community based, home delivered meal program revealed that these PLWH were more likely to utilize their dietary intake advice more than those admitted in hospital (Fakande and Malomo, 1999). The reason for more utilization of nutrition knowledge for these people was cited as having greater choice of food, and having the food in a familiar environment (Fakande and Malomo, 1999).

In Zambia, Ndola Catholic Diocese initiated a home based care program in 1991 to provide basic nursing and medical care to people with HIV/ AIDS (Blinkhoff ex al, 2000). In addition the program provided food supplements and families were required to pay 10% of the value of the food (Blinkhoff et al, 2000). The impact of the program was assessed for utilization of available nutrition options and the review found that utilization

of available nutrition options took place because the food was less expensive compared to transport and hospitalization costs (Blinkhoff et al ,2000).

A group called “ the Centre” counselled over 600 clients between 1992 and 1998 teaching than basic nutrition practices using traditional foods (Francis ,1998) the centre reports that their nutrition counselling helped many PLWH to return to a productive lifestyle (Francis , 1998)

Nutrition support has become increasingly sophisticated for persons with HIV/AIDS (Piwoz & Preble, 2000). This support begins with early diagnosis of HIV infection , and frequent measurements of fat free composition (assessment of fat free body mass and / or body cell mass , serum and other tests to measure micronutrient levels, oral nutrition supplements (including multivitamins and high protein and energy drinks), and appetite stimulants (Walsek et al ,1997). Determining utilization of available nutrition options using the above methods may be prohibitively expensive for developing countries and not likely to be available (Piwoz & Preble, 2000).

According to (WHO, 2004) non utilization of available nutrition option by PLWH due to being frequently intoxicated by drinking large quantities of alcohol is extensively documented PLWH who takes part in substance abuse such as heroine and cocaine always fail to utilize available nutrient options because they are always under the influence of these drugs (Belani & Hege, 2000).

Relationship between utilization of available nutrition options and quality of life

Among PLWH

If PLWH are utilizing available nutrition options well their body’s defence systems are strengthened against disease and infections and the body has enough stores of

nutrients (WHO, 2008). With proper utilization of available nutrition options the body can resist infections and PLWH will stay stronger and be able to eat well and absorb nutrients required by the body (WHO, 2008). When PLWH are able to meet their body's food needs they will not lose weight, they will be able to stay strong and well nourished and they will maintain a higher quality of life (FAO, 2008).

According to WHO (2008) if available nutrition options are not utilized the exact opposite will happen. progression from HIV to AIDS is quickened while in utilization of available nutrition options are slowed down. Quality of life is negatively affected, because HIV weakens the body's natural defence system against diseases and infections, as a result the body's ability to fight infections is greatly reduced (WHO, 2008). With weakened ability to fight infections, the body becomes vulnerable to infections, which normally may have not affected PLWH if there is utilization of available nutrition options (FAO, 2008). Frequent infections and disease make the body weaker and reduce the quality of life among PLWH. Non-utilization of available nutrition options leads to loss of weight, body weakness and malnutrition, which further weakens the body's natural defence mechanism thereby reducing quality of life among PLWH (FAO, 2008).

Utilization of available nutrition options by PLWH have benefits such as improved quality of life because PLWH will be able to work, and contribute to the family's income (WHO, 2008). The utilization of available nutrition options will enable PLWH to have prolonged good health, ability to remain active, ability to care for themselves and their children as well as other dependents (WHO, 2008). PLWH if they utilize available nutrition options, can reduce illness and recovery quickened thereby

reduce costs for health care, for themselves, for their families and for the country in general (USAID, 2000).

In a study conducted by (Crofford, 1999) multiple relations between HIV/ AIDS and nutritional status revealed that the chances of infection with the HIV virus might be reduced and quality of life improved in PLWH with good nutrition. The study further showed that utilization of available nutrition options enable PLWH take in a diet rich in macro nutrients which contribute to the body's resistance to Opportunistic Infections thus enhance quality of life (FAO, 1995).

PLWH with poor quality of life are likely not to utilize available nutrition options (Macllan, 1999) The study showed that non-utilization of available nutrition options will result in the development of infections such as mouth sores, sores of the pharynx and esophagus, fatigue, depression and changes in mental state as indicators of poor quality of life. This calls for nursing intervention to break the reciprocal relationship between utilization of available nutrition options and quality of life.

Existing studies, it is recommended that PLWH increase their energy intakes by about 10-15% to about 40kca/Kg body weight, to maintain their weight and gain weight they should increase their energy intake to 50kca/kg body weight. Protein intake should also be increased to achieve a higher quality of life (Woods, 1999).

According to researches done by Macallan, & Woods, (1999) it is important to recognize that people with HIV/AIDS, even if they are asymptotic may have increased metabolism. This increases their daily energy, protein and micronutrient requirements. Utilization of available nutrition options will help to match with this demand and help to maintain quality of life among asymptomatic PLWH.

Long before the AIDS epidemic emerged in Africa in the early 1980s, the synergistic interactions between infection nutritional status, immune function and quality of life were recognized (Scrimshaw and SanGiovanni, 1997). Infectious diseases, no matter how mild, influence nutritional status and conversely, almost any nutrient deficiency, if reduced quality of life (Scrimshaw and SanGiovanni, 1997).

Non-utilization of available nutrition options lead to nutritional deficiencies which affect the immune function in ways that may influence viral expression and replication thus further reduce quality of life among PLWH (Semba and Tang, 1999). HIV/AIDS also affects the production of hormones such as glucagon, insulin, epinephrine and cortisol, which are responsible for metabolism of carbohydrates, proteins and fats. Elevated levels of these hormones contribute to weight loss and the HIV wasting syndrome, which is, associated with poor quality of life leads to high morbidity and mortality (Young, 1997). Non-utilization of available nutrition options causes malnutrition, which is associated with HIV infection and has serious and direct implications for the quality of life of PLWH (Kotler, 1997).

The research conducted by Suttajit, 2007 determined utilization of available nutrition options by measuring malnutrition using body mass index, body weight, height, body cell mass and skin fold thickness. Findings suggested that those using available nutrition options were less likely to develop malnutrition. The quality of life of those who did not develop malnutrition was higher than those who did develop malnutrition.

The wasting syndrome typically found in PLWH in Africa and other developing countries is a severe nutritional manifestation of the disease. Wasting is usually preceded by changes in appetite, repeated infections, weight fluctuations and subtler changes in

body composition, such as changes in lean body mass and body cell mass, which are more difficult to measure than changes in weight alone. (Babameto ND Kotler, 1997). Weight loss and wasting in PLWH develops as a result of non-utilization of available nutrition options, nutrient malabsorption and metabolic alteration (Macallan, 1999). Wasting also result through a process of cachexia which is characterized by a significant loss of lean body mass resulting from metabolic changes that occur during the acute phase response to infection (Cimoch, 1997; Macallan 1999). Cachexia also affects appetite, sleep wake cycles, and other body processes resulting in HIV infection increasing the body's protein and energy requirements to maintain weight and body composition (Babameto and Kotler, 1997). The first two causes of weight in PLWH that is reduction in food intake and nutrient malabsorption may be corrected by utilization of available nutrition options but metabolic alterations cannot be corrected this way. (Macallan, 1997). Weight loss in PLWH is highly associated with morbidity and mortality hence poor quality of life (Fanta, 2003)

Researchers recognized that while data on prevalence of malnutrition and dietary intake in HIV/AIDS infected persons is widely available I industrialized countries, it is often absent in Africa settings where endemic malnutrition and lack of nutrition management are common. A cross sectional study was undertaken in Abidjan, Cote d'Ivoire to evaluate nutritional status and dietary intakes of 100 adult HIV infected outpatients. The researchers concluded that secondary infections adversely affected dietary intake and nutrition status of PLWH (Castetbon et al, 1997).

The extent to which nutritional therapy can reverse weight loss wasting and improve quality of life in PLWH in Africa is largely unknown. Studies done have revealed that the impact of nutritional interventions will depend in part upon the stage of disease as well as types of nutritional management provided. This has important implications of HIV infection in Africa in the early stages of HIV infection before deterioration of quality of life.

Theoretical Framework

The study will use Roy's adaptation model for its guidance. A basic assumption of this theory is that each patient is seen as an integrated whole, with biologic, Psychological and social components and in constant interaction with focal, contextual and residual stimuli. The scientific assumptions are founded upon the general system and adaptation level theory, while the philosophical assumptions arise from humanism and verativity (Andrews Roy, 1991a). Roy's model aims at emphasizing a holistic approach to the person as an adaptive system. In this study the investigator assumes that if the client utilizes available nutrition options, which are considered in the model as adjustment in the role functioning, and interdependence modes, quality of life will improve which is a form of adaptation.

A framework is the abstract, logical structure of meaning that guides the development of the study and enables the researcher to link the findings to nursing's body of knowledge (Burns and Grive, 1993). The person is seen as adaptive system in constant interaction with the environment (Andrews and Roy, 1991a). the environment is defined by Roy, 1991 as all conditions circumstances and influences that surround and effect the development and behavior of a person. Environment is viewed as constantly changing

and has internal and external components. According to environments in the form of stimuli are inputs into adaptive system. Roy identified 3 classes namely the residual stimuli. Health is a state and process of being and becoming an integrated and whole person (Andrews & Roy, 1991a). Responses to environment stimuli are adaptive or maladaptive. The goal of nursing is viewed as the promotion of adaptation in each of the four adaptive modes namely; the physiologic, self-concept, role function and interdependence modes. The adaptation in each of these modes contributes to the person's health, quality of life and during with dignity (Andrews & Roy, 1991a).

As a framework, Roy's adaptation model has been used and tested in previous nursing researches such as studying the experience of knowledge of sexuality among people with multiple sclerosis done by Gargliadi, 2003) the results of the study were that sexuality was conceived as both negative and positive emotionally which reflected self concept and interdependence modes of Roy/'s model. the mode under study is the interdependent mode and the role function mode.

Research has been using the adaptation Model on cognitive recovery from head injury. The study examined information processing. It provided an effective methodology for describing cognitive recovery overtime, evidence to support the notion of a critical period” for recovery and data cognitive deficits. (Roy, personal communication, March 6, 1986).

Galligan (1979) used the model to care for young, hospitalized children. She found that it provided a means for guiding nurses in a more conscious effort to assist the child during hospitalization. It also provided a system that considered physical needs as only

one aspect of care and provided organization for focusing on psychological needs (Fitzpatrick & Whall, 1996).

Shyu et al tested Roy's adaptation model in their study of environmental barriers and mobility among elders in Taiwan. The findings of the study emphasized the interdependent role of the elderly as need for assistance by others was reflected by the findings (Polit & Beck, 2006).

Roy's Adaptation of Nursing is adequate in accounting for the subject matter with which it deals, its prescriptions are extensive enough to deal with the scope under study/ the model is viewed as broad in scope and the management of stimuli would support the broad scope inferred by Roy (Fitzpatrick and Whall, 1996). It is these strengths of the model that justifies its use in the present study. A closer look at the relationship between utilization of available nutrition options and quality of life among PLWH fits well with Roy's adaptation model. The focal stimulus is addressed as HIV, the contextual stimuli are addressed as the stage of HIV the person is at and the residual stimuli is addressed as availability of food and occurrence of infections among PLWH. Roy's adaptation model is appropriate for this study as health is assumed to be a product of adapting (Andrews & Roy, 1991a). In this study health is an improved quality of life, which is a result of adapting (utilizing available nutrition options by PLWH).

SUMMARY

In this study, quality of life defined as congruence between one's dreams, ambitious, hopes for the future present lifestyle and experiences (Calman, 2004). Quality of life is also being viewed in accordance with WHO definition of quality of life, which says quality of life, which says quality of life directly, affected by the overall state of

health and often referred to as health related quality of life. The study is appreciating the uniqueness and subjectivity of quality among PLWH. As addressed by Roy's in the physiologic function, self-concept, role function and interdependence modes. Nutritional status occurrence of opportunistic infections living longer, utilizing available nutrition options loss of weight and ability to perform activities of daily living were identified as indicators of quality of life. Various researches done agreed that HIV leads to malnutrition, opportunistic infections, increased mortality and morbidity, non-utilization of available nutrition options and dependence on others for performance of activities of daily living. This made it necessary for the examination of the relationship of available nutrition options and quality of life among PLWH using Roy's adaptation nutrition, make it possible to assess needs of PLWH, establish priorities set nursing goals and employ nursing interventions effectively to enhance quality of life among PLWH.

Non-utilization of available options is identified as a maladaptation, which leads to a poor quality of life among PLWH. Non-utilization of available nutrition options deprives PLWH of essential nutrients necessary for improvement of their quality of life. Nursing will help in ensuring utilization of available nutrition options by using the findings of this study and ensure quality of life among PLWH. This makes it imperative to examine the relationship between utilization of available nutrition options and quality of life among PLWH in Chinhoyi.

CHAPTER 3

Study Methodology

The chapter presents the methodology, which gives the study its scientific merit. According to Polit and Hungler (1995) study scientific merit is the degree to which a study possesses theoretical relevance and internal and external validity.

Research Design

In the study a descriptive correlational design was used. The purpose of a descriptive correlational design was to examine the linear relationships between two or more variables in order to determine the type and strength of the relationship. This research design enabled the investigator to achieve greater control thus improving the validity of the study in examining the research problem, which in this case is a non-experimental descriptive correlational design. In this study the variables under study were utilization of available nutrition options as the independent variable and quality of life as the dependent variable. The descriptive element of the study involved the accurate portrayal of current phenomena of interest and the frequency with which that phenomena occurs (Polit & Beck 2006). The correlational component examines the linear relationship to determine the type and strength of the relationship for two or more variables in order to determine the type and strength of the relationship (Burns & Grove, 2005). According to Polit & Hingler, (1996) descriptive correlational design described relationships among variables rather than inferring cause and effect relationship. Studies provide a basis for future research studies and other researchers with a positive framework for investigating relationships between variables Burns and Grove (2005).

Therefore this design was chosen for its ability to identify the relationship between utilization of available nutrition options and quality of life.

Sampling Plan

A sampling plan describes the strategies that are used to obtain a sample of the study (Burns & Grove, 2005). A sample is a portion of the whole population that represents the entire population. This study made use of a probability-sampling plan. The term probability sample referred to the fact that every member (element) of the population has a probability higher than zero of being selected for the sample. According to Burns and Grove (2005), the increase representativeness decreases systematic bias and decrease sampling error. The difference between a sample statistic and a population parameter is called the sampling error (Burns & Grove, 2005). A large sampling error means that the sample is not providing a precise picture of the population, it is not representative (Burns & Grove, 2005). According to Burns & Grove (2005) systematic variation is a consequence of selecting subjects whose measurements values are different or vary in some specific way from the population.

Study site

People Living With HIV who comprised men and women aged 21 and 45 years who visited Chinhoyi Hospital Opportunistic Infection Clinic were chosen. The study site represented a more accessible population to the investigator because of the higher numbers of PLWH aged between 21 and 45 years who visited Chinhoyi Hospital.

The target population is the aggregate of subjects about who the investigator would like to make some generalizations (Polit & Beck, 2006) namely PLWH who will attend Chinhoyi Hospital OIC.

Accessible Population

Polit & Beck (2006) define accessible population as the aggregate of subjects that meet the study-sampling criterion and who are within reach to the investigator. In this study, the accessible population were PLWH who attended OIC at Chinhoyi Hospital aged 21 and 45 years.

Inclusion Criteria

An inclusion criterion is a list of characteristics essential for membership in the accessible population (Burns & Grove, 2005). It also referred to the specific characteristics the investigator wishes to include, essential characteristics of the target population so as to achieve homogeneity, control extraneous variable, provide a guideline for the sample recruitment and enable replication (Burns & Grove, 2005). In this study PLWH aged 21 and 45 years who visited Chinhoyi Hospital OIC. They should be living with the HIV/AIDS. The clients were able to communicate verbally in Shona, English or both.

Exclusion Criteria

An exclusion criterion is a list of characteristics not essential for membership in the accessible population. Exclusion criteria helped the investigator to control for extraneous variables and promote a homogenous sample (Polit & Hungler, 1996). Extraneous variables are the measurement of study variables and relationship among these variable. Subjects who were below the age of 20 or above the age of 45 were

excluded in the study. Subjects who could not speak either Shona or English will be excluded from participating in the study. Not living with the virus.

Sample size

Calculation of sample size followed considerations of amount of variance in the phenomenon, statistical test assumptions, significance level (alpha) effect size and potential mortality rate (Polit & Grove, 2005). The power to detect significant relationships and differences studies increases as sample size increases (BURNS & Grove, 2005) the larger the sample the more representative the population is likely to be and the similar is the sampling error (Polit & Beck, 2006).

Power is the capacity of a design to detect differences or relationships that actually exist in a population, (Burns & Gropve, 2000). Power calculations enable the investigator to provide evidence that a study is worth conducting. A study need non-to be underpowered or overpowered since this lead to non-significant results and use of more resources than necessary (Polit & Sherman, 1990). In this study the power calculations were based on the Lipsey (1990) tables for estimating sample size and using indicators for sample size namely 0,5, level of significant 0,05 and power 0,80 the study will have a sample size of 80 clients.

This study used a medium effect size of 0,5 since the majority of nursing studies can not expect to use effect size in excess of 0,5 because these studies focus on psychosocial problems (Polit & Beck, 2005). Effect size highlights the presence or absence of a phenomenon in a population. Effect size is the extent to which the null hypothesis is false (Burns & Grove, 2005). In an effect size which is large 90, 8) the presence of a relationship will be easy to detect and small sample size will be required.

The effect size is the strength of the difference or magnitude of a relationship between variables (Polit Hungler, 1996). Therefore an effect of size of 0,05 was used in this study.

Sampling procedure

A sampling procedure is the way, the subjects are selected for the study (Polit & Beck, 2006). The Chinhoyi Hospital OIC were PLWH are attended to was used for the sampling procedure. Appropriate steps were taken to ensure that consistence of conditions will be maintained for all forms of sampling procedures by interviewing PLWH in the same way.

The investigator determined whether a prospective subject met the eligibility criterion for the study (Burns & Grove, 2006). This study made use of simple random sampling to allow all the subjects a chance of being chosen into the sample.

The investigator developed a sampling frame consisting of all PLWH attending Chinhoyi Hospital OIC. The sample was selected using simple random sampling. The numbers allocated to patients in the sampling frame were written on small pieces of paper and put in a container. The pieces of paper were mixed and mixed and picked one at a time randomly by the investigator. The drawn pieces of paper had their numbers written down and checked from the list of names on the register so as to identify the subjects. The procedure was repeated until 80 subjects were picked.

Variables

According to Burns & Grove (2005) variables are qualities, properties or characteristics of persons, things or situations that change or vary in research. Study variables of this study were utilization of available nutrition options being the independent variable and quality of life as the dependent variable.

Quality of life

Quality of life was conceptualized as those dimensions of life directly affected by the overall state of health best described by the individual (Calman, 2004). In this study quality of life is defined by Roy's four adaptive modes of physiologic function, self-concept, role function and interdependence.

Quality of life Questionnaire was used to elicit information on quality of life in the physiologic, self concept, role function and interdependence modes. To arrive at the final quality of life score, the investigator summed up the score for each mode.

Utilization of Available Nutrition options

Utilization of available nutrition options was conceptualized as using recommended dietary foods for PLWH rich in protein, carbohydrates, vitamins and minerals which are available to the subject (Piwoz & Preble, 2004). This was measured using Utilization of Available Nutrition Options Questionnaire.

Demographic Variables

Demographic variables were conceptualized as age, sex, religion, marital status, whom they live with, occupation, monthly income, educational level, attained and duration of time with HIV. These were described by (Burns & Grove, 2005) as characterized or attributes of the subjects that describe the sample. Demographic variables were operationalized using the Demographic Data Questionnaire.

Instruments

An instrument is a device or technique that a researcher uses to collect data (Polit & Beck, 2006). The study had instruments namely the Demographic Data Questionnaire, quality of life Questionnaire and Utilization of available Nutrition Options Questionnaire.

Appendix A Demographic Data Questionnaire

The demographic questionnaire measured demographic variables. It was in the form of a structured interview administered using face-to-face interviews. The structure interview had the advantage of increasing control by the researcher over content of the interview. Twelve questions comprised the demographic questionnaire. The demographic questionnaire was used to elicit information such as age, gender, religion, marital status whom they live with, occupation, monthly income, educational level, who is responsible for preparing their food and duration of HIV.

Quality of life Questionnaire

The instruments were used to obtain more information of quality of life in the physiologic, self-concept, role function and interdependence modes. The quality of life questionnaire comprised of four modes with a total score of 70. Values were placed on each response, with a value of 1 on the most negative response and a value of 3 on the most positive response. Sometimes seven options were given, sometimes only four (Burns & Grove, 1993). In order to arrive at the final quality of life score, the investigator summed up the scores for each mode. The numeric precode values for responses on some items were be in the direction such that a higher number reflects a more favourable health status while other items are in the direction that a lower number reflects a more

favourable health state. The overall total scores for quality of life showed quality of life in the 4 modes combined.

The physiologic mode

In the physiologic mode the range of scores were 7-21. A higher score indicated a better quality of life while a lower score indicated a poor quality of life. The physiologic mode consisted of one item of a likert type scale which required subjects to select one of the options to show how much they have been bothered by problems of HIV infection. The HIV associated problems were losing weight, losing appetite, feeling unwell, tiredness, inability to perform tasks, inability to walk and vomiting. The options that were chosen were 'never bothered, sometimes bothered and extremely bothered'. The maximum score was 3 never bothered and the maximum score was 1 for extremely bothered'.

The self concept mode

The scores of the self-concept mode were 7-21, with a higher score indicating a higher quality of life for some items while for some items a higher score indicated a lower quality of life. The minimum score 1 represented definitely true and the maximum score of 3 was, not true for negative items 1 to 4. Positive items 6 to 10 were statements with a minimum score of 1 representing 'not true and a maximum score of 3 representing definitely true'. The sum of all the scale values for the positively and negatively stated statements were obtained to get an overall total score for the self-concept mode.

The role function mode

The possible range of the score for the role –function mode were 4-16, with a higher score indicating a higher quality of life. The role function mode was one item, which is a likert type scale. The minimum score was 1 for always and the maximum score was 3 for never.

The interdependence mode

The interdependence mode comprised of two items, which are both likert type scales. The first item required subjects to rate the strength of their relationship with friends and relatives the second item required subjects to determine how often they depend on friends and relatives. The minimum score for item 1 was 1 for very weak and the maximum score was 4 for very strong. Item 2 was another likert type scale requiring subjects to determine the frequency of their dependence to friends and relatives the minimum score was 1 for always and the maximum score was 4 for never. The sum of all the scale values for the two-likert scales was obtained to get the overall total score for the interdependent mode. The total minimum score for the two likert scales was 4 while the total maximum score was 16. The range of scores were 4 to 16. A minimum score of 4 meant more dependence hence poor quality of life. A higher score of 16 meant less dependence on friends and relatives and a higher quality of life.

Utilization of Available Nutrition Options Questionnaire

This questionnaire comprised of 8 statements on utilization of available nutrition options among PLWH. The instrument was used to elicit information on the utilization of available nutrition options among PLWH. Precoded numeric values for responses on some items was in the direction such that a higher number reflected a less favourable

health status, while other items are in the direction that a lower number reflects a more favourable health status. The first 4 items were such that a higher number reflected a less favourable health state while the last 4 items are such that the lower number reflected a more favourable health state. To arrive at the total score for the Utilization of Available Nutrition Options Questionnaire scores of all items of the questionnaire were summed up. The minimum possible score of the questionnaire was 8 while the maximum possible score of the questionnaire was 24.

The Demographic Questionnaire

This is found in Appendice A. it consist of twelve questions. The purpose of these questions were to provide more information on the subject on age, gender, religion, sex, marital status, level of education, employment status, monthly income, where they stay, whom they stay with, who is responsible for their food and when diagnosed HIV positive. These attributes and characteristics of the subjects helped to describe the sample. The demographic questionnaire helped to measure demographic variables. This was structured and administered using face-to-face interviews with subjects.

Validity

Validity refers to the degree to which an instrument measures what it is supposed measure (Polit & Beck, 2006). In this study, construct validity of the questionnaires was examined by the Nursing Science department. Validity of the QOLIE-89 (Quality of life scale) has been proved in many studies according to (Devinsky at al, 1993). The content and construct validity of the questionnaire was established also with the assistance of experts from the central statistical office and experts from the department of Biostatistics of the University of Zimbabwe. Appendix A, item 10, 11 and 12 had some of the

responses removed as they were found to be too many and confusing by the expert from Central Statistical office.

Reliability refers to the degree of consistency with which an instrument measure the attribute supposed to be measured (Polit & Hungler, 1999). Each instrument was tested for reliability prior to conducting the study through a pilot study. Quality of life lacks a common definition that leads to imperfect measurement and inconsistencies of what constitutes quality of life (Ferrans & Powers, 1985 Jacoby, 1992). Quality of life scale which was used in this study has an established internal consistency reliability range of $r = 0,78$ to $r = 0,92$ (Devinsky et al, 1993) and this overcame these problems. During pilot study reliability testing focused on stability, equivalence and homeogeneity.

Pilot study

A pilot study test of the questionnaire needs to be performed to determine the clarity of questions, effectiveness of instructions, completeness of response sets, time required to complete the questionnaire and success of data collection techniques (Burns & Grove, 1993). The subjects and techniques to be used in the pilot study was as similar as possible to those planned for the main study. The PLWH attending the opportunistic infection clinic at Chinhoyi Hospital were involved in the pilot studies orient them on what will take place during the study. This enabled the investigator to make any modifications found necessary to the study.

Data collection plan

A data collection plan details how the study will be implemented (Burns & Grove, 1993). Planning data collection enables the researcher to anticipate problems that are likely to occur and explore possible solutions. Permission was sought from the medical

Research council of Zimbabwe, an ethical review board for Zimbabwe which will ensure protection of human subject in the study. Permission was also sought from the medical superintendent for Chinhoyi Hospital where the study was conducted. Unit staff of where the study took place were informed in order to gain their support and co-operation. This is important as key individual can influence the possibilities of obtaining an adequate sample. Therefore effective communication, courtesy and politeness helped to increase access to subjects.

The research topic, informed consent purposes and benefits the study was explained to nurses working in the Opportunistic Infection clinic to gain their cooperation. Privacy was ensured by making a request of a private and quiet room each and every day of the study. This was done to prevent the introduction of extraneous variables and to control noise, as this would have an effect on responses. The research was conducted during times that do not coincide with main activities in the opportunistic infection clinic. Effort was made to ensure that the presence of the investigator would not influence the subjects.

The data collection was carried out during March and April 2010. Data collection was carried out at one point in time and this had the advantage of less mortality compared to longitudinal studies. About 8 subjects were interviewed per day for a period of two weeks between 0930hrs and 1600hrs. Unforeseen problems that could interfere with the implementation of the data collection plan was taken into consideration. Each interview schedule was expected to last for about 45 minutes. The investigator modestly dressed with a white coat and student identification displayed on him to minimize situational contaminants that can have a bearing on the subjects' responses.

Protection of human subjects

Human rights are claims and demands that have been justified in the eyes of an individual or by consensus of a group of individuals and are protected in research (Burns & Grove, 2005). Investigators have an ethical responsibility to recognize and protect in research (Burns and grove, 2005). Investigators have an ethical responsibility to recognize and protect the rights of human subjects (Burns & Grove, 1993). This research ensured protection of human subjects by observing and upholding the right to self-determination, privacy, anonymity and confidentiality, fair treatment and protection from discomfort and harm. The research subjects had the following information disclosed to them, introduction of research activities, the purpose of the research, selection of subjects, the procedures to be carried out, risks and discomforts, benefits, alternatives, option to withdraw, noncoercive disclaimer, assurance of anonymity, consent to incomplete disclosure and answers to their questions. The researcher took steps to ensure adequate comprehension of the consent information. Benefits of the study to the subjects included gaining knowledge of available nutrition options and the importance of these in the improvement of quality of life of people living with HIV. Subjects were also told of benefits that will accrue to Chinhoyi Hospital, Mashonaland West Province and Zimbabwe at large as a result of the findings.

The risks associated with this study were mainly physical and psychological as studying a topic such as HIV may be intrusive. Great care was taken by the researcher not to be more intrusive than necessary. Social risks such as confidentiality and privacy was upheld. Only authorized people dealing with the research were allowed access to raw

data. The signed consent forms were not attached to instrument to ensure anonymity. The instruments that were completed were locked away in a file cabinet. The reporting of the research information was in aggregate such that it is not possible to identify a single subject. Study subjects were not be coerced to participate in the study by use of excessive rewards. In this study no stipends were given as incentives or rewards. Participation in the study by subjects was voluntary.

Data Analysis

Data analysis is conducted to reduce, organize and give meaning to data (Burns & Grove, 2005). Raw data was checked for clarity and completeness by coding and editing before computation. Data analysis plan involved coding and selection of an appropriate statistical package to analyze the data. Coding is a way of transforming data from categories of words or phrases into numerical symbols that can be computerized (Burns* Grove, 2000). An example of coding was categorizing male as 1 and female as 2. Numbers assigned to each question was recorded in a code book thus documenting the location and value of every variable that was entered in the computer file. The raw data was cleaned to detect coding and input errors and this ensured coming up with reliable findings. The data was analyzed using the statistical package for the Social Sciences (SPSS, PC).

Research questions were analyzed using descriptive and inferential statistics. Descriptive statistics allow the researcher to organize the data in ways that give meaning and facilitate insight (Burns & Grove, 1993). Inferential statistics provide a means for drawing conclusions about a population given the data obtained from the sample (Polit & Hungler, 1995).

The demographic data questionnaires were not scored but findings were described using descriptive statistics such as means, standard deviations, range and percentages. Measures of central tendency such as the mean showed where the bulk of scores clustered and identified the most common score. The mean was reported when showing interval level or ratio level measurements. According to Burns and Grove (1993) heterogeneity or wide variation in scores is important in correlation.

CHAPTER 4

RESULTS

This chapter presents the results of a study conducted in April 2010. Data was analyzed using the Statistical Package for the Social Sciences (SPSS, PC). Data is presented in tabular forms.

Summary

The purpose of the descriptive correlational study was to describe and to examine the relationship between utilization of available nutrition options and quality of life among PHWH aged between 21 and 45 years in Chinhoyi. Eighty subjects participated in the study. Data was collected using an interview schedule.

Descriptive statistics such as frequency, means and percentages were used to describe the sample demographic characteristics. Inferential statistics, specifically Pearson product moment correlational test was utilized to analyze; the questions examining the relationship between independent variable utilization of available nutrition options and the dependent variable quality of life. Simple linear regression was used to examine the strength of the relationship between the dependent variable quality of life and the independent variable utilization of available nutrition options. The correlation of the dependent variable to independent variable was significant at the 0.01 level.

The study sought to answer the following questions: -

1. What is the quality of life of PLWH aged 21 to 45 years attending Chinhoyi Hospital O.I C.

2. What is the utilization of available nutrition options among PLWH aged 21 to 45 years attending Chinhoyi Hospital O.I.C.
3. What is the relationship between utilization of available nutrition options and quality of life of PLWH aged between 21 to 45 years attending Chinhoyi Hospital O.I.C.

Demographic Characteristics

This demographic data described in this section relates to age, sex, religion, marital status, level of education, employment status, area of residence and who respondent stay with.

The age range was between 21 to 45 years. The mean age was 36 years. Forty-five years was the maximum age while 21 years was the minimum age. Standard deviation was 7.162% years. Ten respondents (12.6%) were aged between 21 to 25 years, nine respondents (11.4%) were aged between 26 to 30 years, fourteen (17.6%) were aged between 31 to 35 years, twenty one (26.4%) were aged between 36 to 40 years and twenty six respondents 32.6% were aged between 41 to 45 years.

Female respondents were the majority of the participants with 56 (70%) being females while males were 24 (30%). Forty-six respondents (57.5%) were married, 12 (15%) were single, 7 (8.8%) were widowed, 5 (6.3%) were divorced and 10 (12.5%) were separated. Forty (50%) had primary education level, 12 (15.0%) had attained ZJC, 23 (28.8%) had ordinary level, 2 (2.5%) had attained tertiary education.

Fifty-nine (73.8%) were unemployed, 4 (5.0%) were retired, 8 (10.0%) were self employed and 9 (11.3%) were employed. Seventy-six of the respondents (95.0%) earned below US\$200, 2 (2.5%) earned between US\$200 to US\$500 and 1 (1.3%) earned above

US\$801. Forty five respondents (56.3%) stayed in urban areas, 12 (15.0%) stayed in mining areas and 19 respondents (23.8%) stayed in farming areas. The above demographic information suggested that most respondents were unemployed and earning less than US\$200. This could have impacted negatively on accessibility to available nutrition options due to financial constraints.

Three (3.8%) respondents belonged to Islam while the majority of 71 (88.8%) were Christians, (7.6%) did not belong to any religion. Ten respondents (12.5%) stayed with parents, 43 (53.8%) stayed with their spouse, 11 (13.8%) stayed with children and 2 (2.5%) stayed alone.

Quality of Life (DV)

Table 6 presents questions which the respondents were asked to elicit information on quality of life indicators, the four models namely the physiological self-concept, role-function and interdependence modes. The total score for the four modes was 70. As can be seen from table 11, the 78 respondents (97.4%) scored 50% and above of the total score for quality of life in the adaptive modes. This meant that PLWH had a higher quality of life in all the 4 modes.

The Physiological Mode

The total score for the physiological mode was 21. A higher score indicated a better quality of life. As shown in table 3, (85.3%) scored above 50%. Subjects were required to select one option from a likert scale indicating how best the statements described them. The minimum score of 1 represents extremely bothered and the maximum score of 3 represents never bothered. As shown in table 3 the majority 60

(71.5%) were never bothered by losing weight in the last 4 weeks. Only 19 respondents (23.8%) were extremely bothered by losing weight.

On losing appetite 50 respondents (62.5%) were never bothered by losing appetite while 22 (27.5%) were extremely bothered indicating that the majority maintained their appetite. Fifty-four respondents (67.5%) were never bothered by feeling unwell while 22 (27.5%) were extremely bothered. Only 1 (1.3%) was sometimes bothered by feeling unwell, indicating a more favourable health status.

The majorities 54 (67.5%) were never bothered by tiredness while 22 (27.5%) were bothered. Those who were sometimes bothered constituted 4 respondents (5.0%). Respondents who were never bothered by inability to perform tasks constituted 59% (73.6%) while those extremely bothered comprised 18 respondents (22.6%). Fifty-four respondents (67.6%) were never bothered by inability to walk while 20 (22.6%) were extremely bothered. Vomiting never bothered (71.3%) 57 respondents while 19 (23.8%) were extremely bothered.

TABLE 1
Demographic characteristics of subjects 1(n=80)

Variable	Frequency	Percentage
Age range of subjects		
21-25	10	12.6
26-30	9	11.4
31-35	14	17.6
36-40	21	26.4
41-45	26	32.6
Sex		
Male	50	70.0
Female	24	30.0
Marital Status		
Married	46	57.5
Single	12	15.0
Widowed	7	8.8
Divorced	5	6.3
Separated	10	12.5
Level of Education		
Primary	40	50.0
ZJC	12	15.0
Ordinary Level	23	28.8
Advanced Level	2	2.5
Tertiary	3	3.8

TABLE 2
Demographic characteristics of subjects 2(n=80)

Variable	Frequency	Percentage
Occupation		
Unemployed	59	78.8
Retired	4	5.0
Self employed	8	10.0
Employed	9	11.3
Where subjects stay		
Urban	45	56.3
Rural	12	15.3
Mine	4	5.0
Farm	19	23.8
Religion		
Christianity	3	3.8
Islam	71	88.8
Others	5	6.0
Atheism	1	1.3
Who stays with the subjects		
Parents	10	12.5
Spouse	43	53.8
Siblings	11	13.8
Children	14	17.5
No-one	5	2.5

Table 3

Physiologic mode 2 (n=80)

Total scores	Frequency	Percent
6	7.5	7.5
2	2.5	2.5
2	2.5	2.5
2	2.5	2.5
4	5.0	5.0
1	1.3	1.3
1	1.3	1.3
2	2.5	2.5
60	75.2	75.2

The Self Concept Mode

Total score for the self-concept mode was 21 with a higher score indicating a more positive self-concept. Subjects were required to select one option from three options on a likert scale which best described them. The minimum score of 1 represented true and maximum score of 3 represented not true for the first four items while for items 5,6 and 7 the minimum score of 1 represented not true and maximum score of 3 represented true. 'Definitely true', has a score of 1, 'do not know', has a score of 2 and 'do not know', has a score of 2 and 'not true', has a score of 3.

Table 4 showed that 80 respondents (100%) scored above (50%) showing a positive self-concept for all the respondents. As shown in table 6, 62 respondents (77.4%) denied getting sick more often, while 17 (21.3%) agreed to getting sick more often. On bleak future 65 respondents (81.3%) denied having a bleak future while 13 respondents (16.3%) agreed to having a bleak future. Sixty-eight respondents (85.9%) denied feeling worthless while 11 (13.8%) agreed to feeling worthless. On being asked if the respondents felt low in the past four weeks, 71 (88.8%) denied where as 7 (8.8%) agreed. Fifty respondents (62.5%) did not worry about what people think of them while 26 (32.5%) did worry. Seventy-four respondents (92.6%) agreed to valuing their life while 4 (5.0%) do not value their life. For most respondents 76 (95.1%) agreed that their families considers them while 3 (3.8%) were not considered by their families.

Table 4

Self Concept Mode 1 (n=80)

	Frequency	Percent
Getting sick more often		
True	17	21.3
Do not know	1	1.3
Not true	62	77.4
Bleak future		
True	13	16.3
Do not know	265	2.5
Not true	65	81.3
Worthless		
True	11	13.8
Do not know	1	1.3
Not true	68	85.0
Feeling Low		
True	7	8.8
Do not know	2	2.5
Not true	71	88.8
Do not worry		
True	50	92.6
Do not know	4	2.5
Not true	26	5.0
Value life		
True	74	92.6
Do not know	2	2.5
Not true	4	5.0
Family Considers me		
True	76	95.1
Do not know	1	1.3
Not true	3	3.8

Table 5

Self Concept mode 2 (n=80)		
	Frequency	Percent
Total scores out of 21		
12	1	1.3
13	1	1.3
14	2	2.5
15	2	2.5
16	5	6.3
17	1	1.3
18	1	1.3
19	1	2.5
20	2	2.5
21	2	79.5

Role Function Mode

The total score in the role function mode was 7. In this mode a higher score indicate a better quality of life. Table 6 indicates that quality of life for most respondents was not affected as the majority 71 (97.6%) scored 50% and above. Respondents were asked to indicate how often they had problems with the ability to perform family, job, community and self score roles. The majority of the respondents 56 (70.1%) never had any problems while 14 (17.5%) always had problems with performing family roles. On performing job/school roles, the majority of the respondents 57 (71.3%) indicated that they were never affected while 15 (18.8%) were affected. In performing community role 58 respondents (72.6%) never had problems while 14 (17.5%) had problems. Fifty-eight respondents (72.5%) never had problems with ability to perform self-care roles while 13 (16.3%) always had problems with performance of self-care roles.

Table 6
Role function mode 1 (n=80)

Variable	Frequency	Percent
Performing Family Roles		
Never	56	70.1
Sometimes	10	12.5
Always	14	17.5
Performing job/school roles		
Never	57	71.3
Sometimes	8	10.0
Always	15	18.8
Performing Community Roles		
Never	58	72.6
Sometimes	8	10
Always	14	0
		17.5
Performing self care roles		
Never	58	72.5
Sometimes	9	11.3
Always	13	16.3

Table 7
Role function mode 2 (n=80)

Variable	Frequency	Percent
Total scores out of 12		
4	8	1.1
5	1	1.3
6	1	31.3
8	3	3.8
10	1	1.3
11	1	1.3
12	65	90.1

Interdependence Mode

The total maximum score for the interdependence mode was 16 and total minimum score was 4. A higher score indicated a good relationship with friends and relatives and less dependence on friends and relatives. Table 9 revealed that 77 respondents (96.3%) had a strong to very strong relationship with their friends while 3 (3.8%) had a weak to very weak relationship with their friends implying a good relationship for most of the respondents, which contribute to a better quality of life. Seventy- six respondents (95%) had a strong to very strong relationship with relatives while four respondents (5%) had a weak to very weak relationship with relatives. The findings indicated that for most participants relationship with friends and relatives is good for most respondents.

Thirty-eight respondents (47.6%) never depended on friends while twenty-seven (33.8%) always depended on relatives for most respondents implying a better quality of life as indicated on table 8.

Table 8

Interdependent mode 1(n=80)

	Frequency	Percent
Relationship with friends		
Very weak	2	2.5
Weak	1	1.3
Strong	44	55.0
Very strong	33	41.3
Relationship with relatives		
Very weak	3	3.8
Weak	1	1.3
Strong	44	55.0
Very strong	32	40.0
Dependence on friends		
Always	8	10.0
Sometimes	19	23.8
Rarely	15	18.8
Never	38	47.6
Dependence on relatives		
Always	8	10.0
Sometimes	16	20.0
Rarely	15	18.8
Never	41	51.3

Table 9

Interdependence mode 2 (n=80)		
Total score	Frequency	Percent
6	2	2.5
7	1	1.3
8	7	8.8
10	9	11.3
11	3	3.8
12	15	18.8
13	1	1.3
14	20	25.0
15	1	1.3
16	20	26.3

Utilization of available Nutrition Options

Utilization of available nutrition options comprised a total score of 24. A higher score indicated utilization of available nutrition options by the respondent. Utilization of available nutrition options was rated using a likert type of scale ranging from a maximum score of 3 for true and a minimum score of 1 for false for the first 5 items and minimum score of 1 for true and a maximum score of 3 for false for the last three items. Table 11 showed that 54 respondents (67%) agreed to always eating recommended food while 25 respondents (13.3%) denied eating recommended food. The above results indicated utilization of available nutrition options by the majority of the respondents. The participants who benefited from utilization of available nutrition options constituted 62 respondents (77%), with those who did not benefit from utilizing available nutrition options constituting 15 respondents (18.8%). Participants who agreed to taking food high in proteins, carbohydrates, fats and vitamins comprised 61 (76.3%) while those who denied constituted 17 respondents (21.3%).

Table 11 indicated that the majority of the respondents 54 (67.6%) had increased their food intake they were diagnosed HIV positive, while 22 participants (27.5%) have not increased their food intake. Sixty-five (81.3%) respondents were not prevented from taking available nutrition options by busy schedules while 11 respondents (15.1%) were prevented from taking available nutrition options. These findings indicated a higher number who are utilizing available nutrition options. Medications taken by PLWH do not interfere with food choices for 68 respondents (84.9%) while medications interfered with food choices for 11 respondents (13.8%). Availability of food affected food intake

for 37 respondents (46.3%) while 42 (52.6%) were not affected. The results show an almost equal number of those affected and not affected implying that availability of food was a hindrance to utilization of available nutrition options. Illness affected utilization of available nutrition options to a lesser extent as 17 respondents (21.3%) were affected by illness while the majority 62 (77.6%) were not affected by illness. The findings indicated that illness did not affect utilization of available nutrition options.

Table 10
 Quality of life, (Physiologic Mode, Self Concept Mode, Role Function Mode and
 Interdependence Mode) (4 modes)
 (n= 80)

Total scores	Frequency	Percent
32	4	5.0
36	2	2.5
40	3	3.8
42	4	5.0
44	4	5.0
46	6	7.5
50	7	8.8
55	4	5.0
57	5	6.3
61	8	10.0
63	8	10.0
64	7	8.8
66	8	10.0
68	8	10.0
70	2	2.5

Table 11
Utilization of available nutrition option 1 (n=80)

	Frequency	Percent
Always eat recommended food		
True	54	67.5
Do not know	1	1.3
False	25	31.3
Benefited from utilization of available nutrition options		
True	62	77.1
Do not know	3	3.8
False	15	18.8
Take food high in Protein		
True	61	76.3
Do not know	2	2.5
False	17	21.3
Increased food intake		
True	54	67.6
Do not know	4	5.0
False	22	27

Table 12
Utilization of available nutrition options 2 (n = 80)

	Frequency	Percent
Busy schedules prevent me from taking food		
True	12	15.1
Do not know	3	3.8
False	65	81.3
Medication interfere with food choice		
True	11	13.8
Do not know	1	1.3
False	68	84.9
Availability of food affect food intake		
True	37	46.3
Do not know	1	1.3
False	42	52.6
Illnesses affect utilization of available nutrition options		
True	17	21.3
Do not know	1	1.3
False	62	77.6

Table 13

Utilization of available nutrition options 3 (n =80)

	Frequency	Percent
Total scores		
12	1	1.3
13	1	1.3
16	2	2.5
18	3	3.8
21	3	3.8
23	1	1.3
24	69	86

Relationship between the Dependent Variable and the Independent Variable

Pearson correlation coefficient as shown on table 14 was used to examine the relationship between the independent variable utilization of available nutrition options and the dependent variable quality of life. The correlation coefficient (r) is an index that measures the strength or magnitude and direction of linear relationship. Table 14 showed that after computing the Pearson correlation coefficient of the independent variable utilization of available nutrition options and the dependent variable quality of life was found to be .368. The positive sign on the correlation coefficient (r) indicates that there is a moderate positive linear relationship. Utilization of available nutrition options was positively correlated and significant to quality of life, meaning that quality of life was attributable to utilization of available nutrition options.

$r = .368$, $p = < .01$. This supports a linear relationship between utilization of available nutrition options and quality of life. As utilization of available nutrition options increased, quality of life also increased.

Pearson correlation Matrix Table 14 (n=80)

	Y
X	0.368

*P<.05

**P<.01

***P<.001

Y= Quality of Life

X=Utilization of available nutrition options

Table 15

Regression analysis of quality of life

Variable	B	SEB	Beta
X	.825	.236	.368
Constant	73.365	7.756	
$R^2 = 0.135$			F =12.211
*P<. 05	**P<. 01	***P<.001	

X= Utilization of available nutrition options.

Regression Analysis

Regression analysis was used to examine the strength of the relationship between utilization of available nutrition options and quality of life. Table 15 showed the regression analysis of the dependent variable quality of life and the independent variable utilization of available nutrition options. The effect of the independent variable was significant $R^2 = .135$ ($F = 12.211$, $p = 0.001$). This implied that the independent variable utilization of available nutrition options explains 13.5% of the variance in the dependent variable quality of life and 86.5% was attributed to other factors not taken care of in the study. Regression coefficient b of .825 represents a change in quality of life for a unit change in utilization of available nutrition options. Utilization of available nutrition options had a positive influence on quality of life.

CHAPTER 5

DISCUSSIONS, IMPLICATIONS AND RECOMMENDATIONS

This chapter discusses the findings drawn conclusions and implications of the study. The study set out to establish the relationship between utilization of available nutrition options and quality of life among PLWH aged 21 and 45 years attending. A sample size of eighty PLWH was used

Summary

Study findings indicated that PLWH had an improved quality of life. Quality of life was operationalized using Roy's four adaptive modes of physiological function, self-concept, role-function and interdependence modes. The study findings on quality of life indicated that HIV/AIDS did not adversely affect quality of life in the four modes. In the physiologic mode 77.4% of the respondents had a total score above 50%. In the self-concept mode all the respondents had a positive self-concept with 100% having a total score above 50%. The majority of the respondents 83.6% had a total score above 50% in the role function mode indicating less problems in the performance of family, school, job, community and self-care roles. In the role function mode findings revealed that quality of life was not affected. HIV/AIDS did not adversely affect quality of life in the performance of roles. The interdependence mode is characterized by a higher percentage of respondents 96.2% who scored above 50%. This reflected a stronger relationship between PLWH and their friends and relatives. On the other part it showed less dependence on relatives and friends implying that most respondents were independent. As reflected in table 11 , 97.4% of respondents scored above 50% of the total score of quality of life implying a higher quality of life for PLWH overally.

Utilization of available nutrition options is essential in ensuring an improved quality of life. On utilization of available nutrition options the minimum possible score was 4 and the possible maximum score was 40. Responses in the utilization of available nutrition options indicated that the majority (96.1%) had a score above 50%. These responses showed an overwhelming utilization of available nutrition options by most respondents.

Application of the Pearson Product moment correlation test showed that there was a weak positive correlation ($r = .368$, $p = < 0.001$) between utilization of available nutrition options and quality of life, which is significant at 0.01. These results meant that an increase in utilization of available nutrition options will result in an increase in quality of life. The R-squared indicated that utilization of available nutrition options accounts for 13% of the variance in quality of life. In this study, the findings weakly supported the premises that as utilization of available nutrition options increases, quality of life improves.

Sample Demographics

The study consisted of eighty respondents who attended Chinhoyi Hospital OIC. Their ages were between 21 and 45 years. This is consistent with UNAIDS (2000) which says 65% of adult HIV infections were less than 30 years. Botswana, Namibia, Swaziland and Zimbabwe have between 20 and 26% of adults aged 15 and 49 years, who are HIV infected World Health Report, (2004).

The findings of the study indicated a mean age of 36 years. According to the UNAIDS (2000), this age group is at high risk of contracting HIV. The majority 57,5% of the respondents were married. People who are married are more likely to utilize available nutrition options, this is consistent with WHO, (2008). Those who were staying with their spouses constituted 53.8%. According to Piwoz and Preble (2000), PLWH who stay with their spouses are more likely to utilize available nutrition options than those who stay alone.

In the study respondents with Primary Education constituted 40 respondents (50.0%), ZJC had 12 respondents (15.0%), Ordinary Level had 23.8 respondents, Advanced level had 2 respondents and tertiary had 3 respondents. None of the respondents had no formal education. According to WHO, (2008), a higher education level is associated with an increased utilization of available nutrition options. Fifty-nine subjects were unemployed (73.8%) and 76 respondents (95%) of the subjects earned below USD \$200-00. A lower income could impact negatively on the utilization of available nutrition options WHO (2008) as cited. Forty-five respondents (56.3%) stayed in the urban areas. Poverty is more prevalent in rural areas, hence people living in urban areas are more likely to utilize available nutrition options than those living in rural areas (FAO 2004). Religion for most of the respondents (88.8%) was Christianity. Christianity did not interfere with utilization of available nutrition options compared to other religions. Reviewed literature indicated that socio-cultural factors like religion come into play in the determination of utilization of available nutrition options by PLWH, WHO, (2000).

Quality of life

Data analysis indicated that HIV/AIDS did not adversely affect quality of life in the physiologic, self-concept, role function and interdependence modes. Study findings revealed that HIV/AIDS was mostly under control among PLWH, which enhanced quality of life. The findings are in line with the World Health Report, (2004) and WHO/UNAIDS (2005). Nutrition may directly contribute to prevention of new infections to the extent that lowering of the viral load decreases the possibility of falling sick more often (World Health Report, 2004). The above findings are consistent with findings by Fanta, (2003) which attributed a lower occurrence of opportunistic infections in HIV to utilizing available nutrition options. Piwoz et al (2004) attributed improved quality of life among PLWH partly to a balanced diet.

Study findings indicated that 62 (74.4%) of the respondents had a total score above 50% in the physiologic mode. This view is supported by WHO, (2004) that indicated that eating patterns contribute to prevention of diseases. In the self-concept mode study findings revealed that PLWH had a more positive self-concept with eighty respondents (100%) having a total score above 50%. These findings are contrary to FAO, (2006) which indicated that PLWH have a poor and negative self-concept.

Furthermore the study findings revealed that the role function of PLWH was not affected as seventy-seven respondents (83.6%) scored above 50% in the role function mode. These findings are in sharp contrast with the literature which indicated that role function is affected in many ways like loss of employment, being dependent on others and changing roles among others FAO, (2000). Study findings indicated that quality of life of PLWH was not affected in the interdependence mode. The results of the study

revealed that 96.2% of the respondents (77) scored above 50% in the interdependence mode implying a higher quality of life. These results are inconsistent with the reviewed literature, which suggested that the interdependent mode is affected and quality of life is lowered in this study WHO, (2000).

Utilization of available nutrition options

Utilization of available nutrition options is important in the improvement of quality of life among PLWH (Piwoz et al, 2004). Study findings revealed that 73 (96.1%) of PLWH scored above 50% in the utilization of available nutrition options implying that they were making use of available nutrition options. The minimum possible score was 8 and the maximum possible score was 40. In the category always eat recommended food for PLWH fifty-four respondents (67.%) agreed to always eating recommended food. These findings are supported by WHO, (2008) which attributed improved quality of life of participants to utilizing available nutrition options.

In the item ‘ I have benefited from utilizing available nutrition options’, sixty-two respondents (77.6%) agreed to have benefited from utilizing available nutrition options while fifteen respondents (22.4%) did not benefit. These findings supported the reviewed literature which suggested that not utilizing available nutrition options affect the quality of life in the physiologic, self concept, role function and interdependence modes WHO, (2000).

The majority of the respondents 61 (76.3%) agreed to taking a balanced diet high in proteins, fats, carbohydrates and vitamins. This implied that they were using available nutrition options. Only 21.3% denied taking a balanced diet. These findings supported the literature review which stipulated that in HIV infection there is increased demand for

energy, fats, proteins, vitamins and minerals Piwoz and Preble, (2004). Findings by the WHO (2004) are also in line with need for taking a balanced diet as this prevented opportunistic infections. A balanced diet would help in the preventing of occurrence of malnutrition Walsek, Zafonte, (1997)

Fifty-four of the respondents (67.6%) agreed to have increased their food intake since they were diagnosed HIV positive. This is in line with the existing findings which indicated that HIV infection exacerbates malnutrition through its attack on the immune system and its impact on the nutrient intake absorption and utilization (WHO, 2002). The study findings are also supporting Piwoz and Preble, (2004)'s findings which said that HIV infection increases demand for energy, proteins, vitamins and minerals.

In the category which determined if busy schedules prevented PLWH from taking or utilizing available nutrition options sixty-five respondents (81.3%) denied being prevented from utilizing available nutrition options by busy schedules. Only 13.8% agreed to be prevented from taking in available nutrition options by busy schedules and 1.3% was not sure. These findings are contrary to the literature reviewed which attributed non-utilization of available nutrition options to the complexities of modern day life WHO, (2008). The study findings are also contradicting with the study conducted by Thompson and Dennison, (2000) which reported that about 8 out of 10 American households report eating out regularly with an average of 3.7 times per week per individual.

In this study sixty-nine respondents (84.9%) denied that medications interfere with their food choice while only 13.8% agreed that their food choice is being interfered with by medications. These findings are contrary with the findings from (SAFAIDS,

2006) that reported that ART and nutrition affect each other in a reciprocal way. In another study done by SAFAIDS, (2000) ART was found to increase demand for nutrients, these findings supported the results of this study.

Availability of food recommended in HIV infection was found not to affect food intake for forty- three respondents (53.8%) while availability of food was found to affect food intake for (37) 46.3% of the subjects. These findings implied that generally PLWH had their food intake affected by availability of food. These findings are in line with the findings by WHO, (2008) which attributed non-utilization of available nutrition options by PLWH to environmental barriers such as accessibility to food. According to Glimpse, (2006), poor and food insecure households are likely to face reduced access to and ability to utilize available nutrition options.

In determining if illnesses affected utilization of available nutrition options for PLWH sixty-two respondents (77.6%) denied being affected in utilization of available nutrition options by illness. Those affected by illness in utilizing available nutrition options constituted 21.3% which meant the majority were not affected by illness. The study findings are contrary to SAFAIDS (2006) which revealed that HIV/AIDS prevented effective treatment and utilization of available nutrition options.

Relationship between utilization of available nutrition options and quality of life

Application of the Pearson Product moment correlation was done to examine the relationship between utilization of available nutrition options and quality of life. It showed a weak positive correlation ($r = .368$) implying that as utilization of available nutrition options increases there is an increase in quality of life. Linear regression showed that utilization of available nutrition options had a weak effect on quality of life

of PLWH. R = squared indicated that utilization of available nutrition options accounts for 13% variation in quality of life. Therefore the study findings weakly supported the premise that as utilization of available nutrition options increase, quality of life increases.

Theoretical Framework

Callista Roy's adaptation model was used to guide this study. The focus of the assumption of the model is on the response of the adaptive system PLWH to a constantly changing environment. Quality of life as health is attained when there is adaptation in the physiological, self-concept, role function and interdependence modes. Utilization of available nutrition options was the environmental stimuli. Roy's adaptation theory in the study has helped in identification of positive stimuli such as utilization of available nutrition options which can contribute to an optimal quality of life. Roy's theoretical framework was useful in this study in the sense that it focused on the adaptive modes physiological, self concept, role function and interdependence modes which are modes that promote the integrity of the person in the goals of adaptation survival, growth and mastery. Negative stimuli such as non-utilization of available nutrition options, adaptation in the four modes and subsequently the improved quality of life was highlighted.

In PLWH adaptive responses are destroyed, therefore there is need for nurses to promote adaptation in the adaptive modes of physiological, self-concept, role function and interdependence modes.

Nursing sought to promote adaptation in the four modes while discouraging mal-adaptation. This contributed to PLWH's health and quality of life. The link between

utilization of available nutrition options, adaptation in the four modes and quality of life was explicated.

Implications to Medical /Surgical Nursing Practice

The primary focus in the study was to encourage utilization of available nutrition options among PLWH in order to attain an improved quality of life. The findings of the study indicated that when PLWH utilize available nutrition options there is adaptation in the four modes leading to reduced occurrence of opportunistic infections hence improved quality of life. The study emphasized the need for medical surgical nurses to assess the nutritional needs of PLWH and meet them through encouraging utilization of available nutrition options. In the actual nursing practice nurses will have a better appreciation of the importance of a balanced diet when ordering and administering diet for PLWH.

If nursing practice does not address the nutritional needs of PLWH, opportunistic infections will occur and the quality of life of PLWH will be affected. There has been a tendency in the nursing practice to pay too much attention on non-nursing issues and other areas such as ART at the expense of nutritional requirements of PLWH. Findings of this research will make nursing practice aware that drug treatment is complemented by good nutrition. Anti-retroviral treatment goals cannot be achieved without adequate nutrition which can be achieved through utilization of available nutrition options.

Research

Medical Surgical nursing should be influenced by research and be evidence based. Similar researches need to be conducted in other areas to determine the relationship of between utilization available nutrition options and quality of life among PLWH in those areas. The role of medical surgical nursing in ensuring utilization of available nutrition

options by PLWH need to be explored through research. Another area which needs research is the types of available nutrition options how they improve quality of life among PLWH. The research findings will identify the best nutrition options and encourage these. A lot of emphasis has been put on ART, research need to be done to determine the relationship between nutrition and ART. These researches will help in keeping nurses abreast of management of HIV/AIDS.

Administration

The findings of this research indicated that utilization of available nutrition options result in improved quality of life. Administration should be aware of these results in order to prioritize resources both human and material towards making nutrition options available to PLWH. Administration, through the research findings will support efforts that improve availability of available nutrition options through approving purchases of food items that benefit PLWH. Administration can create an enabling environment for dissemination of information that encourage utilization of available nutrition options by PLWH.

Education

For PLWH to utilize available nutrition options they need more information on available nutrition options, importance of; and how these help to improve quality of life. Public education offers hope as it opens doors to acceptance and understanding of need to utilize available nutrition options.

Nurses may lack knowledge on nutritional requirements of PLWH. This knowledge gap needs to be bridged through reviewing and updating nursing curriculum to include the new needs of PLWH. Conducting workshops and in service training for

nurses will go a long way in enhancing utilization of available nutrition options by PLWH. The knowledge gained from the findings of this study can be used for PLWH to teach each other at Chinhoyi Hospital, in the district as a whole and at country level so that the new findings discovered in the utilization of available nutrition options by PLWH can be quickly disseminated and applied.

RECOMMEDATIONS

1. Health Institutions need to scale up access to food for PLWH to encourage utilization of available nutrition options and improve their quality of life.
2. There is need for public education and awareness that stress the importance of utilization of available nutrition options.
3. Flow charts that depict how utilization of available nutrition options improve quality of life among PLWH' should be displaced in all Opportunistic Infection Clinics.
4. Health Institutions should determine to what extend utilization of available nutrition options is contributing to cost containment from reduced occurrence of opportunistic infections

LIMITATIONS

1. The instruments used for measuring quality of life and utilization of available nutrition options were developed by the investigator; and were not subjected to parametric tests so reliability and validity could have been adversely affected despite all measures taken to strengthen them.
2. Two languages were used in collecting data. Some participants responded in English, while others responded in Shona. It is possible that respondents might

have understood questions differently. Enough explanation was given during data collection.

Summary

A descriptive correlational study was used to describe and examine the relationship between utilization of available nutrition options and quality of life among PLWH aged between 21 and 45 years attending Chinhoyi Hospital OIC. The study utilized Callista Roy's Adaptation Model. Malnutrition associated with HIV infection has serious and direct implications for the quality of life of PLWH (Babamento and Kotler, 1997). The probability sample comprised 80 PLWH, fifty-six females and twenty-four males who were recruited from Chinhoyi OIC. The majority were unemployed and earned below US\$200.00 and their religion was mostly Christianity.

Data was coded and entered into the computer and analyzed using the statistical package for Social Sciences (SPSS, PC). Descriptive statistics, Pearson correlation coefficient test and regression were used to analyze data. The research findings indicated that HIV did not adversely affect quality of life in the physiologic mode for seventy-two (74.4%) had a total score above 50%, self concept (100% had a total score above 50%) role function (83,6% scored above 50%) and in the interdependence mode (96,2% scored above 50%).

Application of the Pearson Product moment correlation test showed that there was a weak positive correlation which is significant ($r = .368$) between utilization of available nutrition options and quality of life. The results of the study showed that utilization of available nutrition options have a weak effect on quality of life of PLWH. R - squared

indicated that utilization of available nutrition options accounts for 13% variance in quality of life.

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APPENDIX A

DEMOGRAPHIC QUESTIONNAIRE

I am going to ask you questions about yourself, please feel free to answer the questions to the best of your ability

1. How old are you? a) 21-25
 b) 26-30
 c) 31-35
 d) 36-40
 e) 41-45
2. What is your sex? a) Male
 b) Female
3. What is your marital status? a) Married
 b) Single
 c) Widowed
 d) Divorced
 e) Separated
4. What is the level of your education? a) Primary
 b) ZJC
 c) Ordinary Level
 d) Advanced Level
 e) Tertiary
 f) No Formal Education
5. What is your employment status? a) Unemployed
 b) Retired
 c) Self Employed
 d) Employed
6. What is your monthly income? a) Below US \$200
 b) US \$200-US \$500
 c) US\$501-US\$800
 d) US\$801-US\$1100
 e) Above US\$1100

7. Residence

- a) Urban
- b) Rural
- c) Mine
- d) Farm
- e) Others specify

8. What is your religion?

- a) Christianity
- b) Islam
- c) Atheism
- d) Others

9. Whom do you stay with respondent?

- a) Others
- b) Spouse
- c) Siblings
- d) Children
- e) No one
- f) Other specify

APPENDIX B – quality of life questionnaire

PHYSIOLOGICAL MODE.

These questions are about physical problems and any problems you may have had with your health in the past 4 weeks. Please answer them to the best of your ability.

1. During the last 4 weeks how much have you been bothered by the following?
(Choose one response for each problem that best describes you)

Key 1 = Yes extremely bothered, 2=Sometimes bothered, 3=Never bothered

	Extremely bothered	Sometimes Bothered	Never Bothered.
Losing Weight			
Losing Appetite			
Feeling unwell			
Tiredness			
Inability to perform tasks			
Inability to walk			
Diarrhoea			
Vomiting			
Decrease in CD4 Count			

SELF CONCEPT MODE

Please choose one option that best describes how you feel.

1= True, 2=Do Not Know, 3= Not True

	True	Do Not Know	Not True
1. I get sick more often			
2. My future is bleak			
3. I am worthless			
4. I feel low all the time			
5. I worry about what people think of me			
6. I value my life			
7. My family considers me			

1. ROLE –FUNCTION MODE

The following questions are about performance of roles. Please answer them to the best of your ability. During the last four weeks how many times have you had problems with the following? 1= Never, 2= Sometimes, 3=Always

	Never	Sometimes	Always
Performing family roles			
Performing job /school roles			
Performing community roles			
Performing self care roles			

INTERDEPENDENCE MODE

The following questions are about your relationship with family and friends. Choose the best option for you.

Key: 1 = very weak. 2 = weak. 3 = strong. 4 = very strong.

1. How do you rate the strength of your relationship with friends and relatives?	Very weak	Weak	Strong	Very Strong
Friends				
Relatives				

2. How often do you depend on friends and relatives?	Never	Rarely	Sometimes	Always
Friends				
Relatives				

APPENDIX C

UTILIZATION OF AVAILABLE NUTRITION OPTIONS QUESTIONNAIRE

1. The following questions will ask you about how you are making use of available nutrition options. May you answer them to the best of your knowledge.

Key: 1 = True, 2 = Do not Know, 3 = False

	True	Do Not Know	False
I always eat food recommended for PLWH			
I have benefited from utilization of available nutrition options			
I take food high in protein, carbohydrates, fats and vitamins			
I have increased my food intake since I was diagnosed HIV positive			
Busy schedules prevent me from taking available nutrition options for PLWH			
Medications that I take interfere with my food choice.			
Availability of food affect how I take food recommended for PLWH			
Illnesses affect my utilization of available nutrition options for PLWH			

APPENDIX D
CONSENT FORM

RE: RESEARCH TITLE: TO EXAMINE THE RELATIONSHIP BETWEEN UTILIZATION OF AVAILABLE NUTRITION OPTIONS AND QUALITY OF LIFE AMONG PLWH WHO ARE AGED BETWEEN 21-45 YEARS.

My name is Godfrey Mutara. I am a Masters in Nursing student studying at the University of Zimbabwe College of Health Sciences. I am doing a study on the above-mentioned topic.

I am requesting you to participate in this study. The information obtained from you will be treated as confidential and no one else besides the investigator will have access to it. Codes will be used instead of names to ensure confidentiality. The interview will last about 15 minutes and you are free to withdraw from the interview at any point during the interview. You are also free to decline to participate in this interview and your decision will not affect the quality of care given to you in this department by health care providers.

Participation in this study might help you gain more knowledge about the importance of nutrition in HIV infection. You will also have contributed positively to the generation of new knowledge about the relationship between HIV and nutrition. The information obtained will influence the improvement of quality of life among people living with HIV through use of nutrition.

Though there is minimum risk in this study, you might have psychological trauma as you will be asked to recall when you were diagnosed HIV positive. You will also be asked to recall how you have been taking your food.

If you have got any questions concerning this study you can contact me during the week through the University of Zimbabwe College of Health Sciences, Department of Nursing Science telephone number 04 791631.

I have read (or this consent form has been read to me) and I have understood this consent form and voluntarily consent to participate in this study.

Study participant`s signature

Date

Investigator`s signature

Date

APPENDIX E

MIBVUNZO IRI MAERERANO NEMUNHU

Ndichakubvunzai mibvunzo maererano neni. Ndinokunbira mupindure sekuzisa kwenyu.

1. Mune makore mangani?
2. Muri munhuyi? a) murume
- b) mukadzi
3. makaroorwa/makaroorwa here?
 - a) ndakaroorwa/ndakaroorwa
 - b) handina kuroora/kuroorwa
 - c) ndakafirwa
 - d) takarambana
 - e) hatisi pamwechete
4. Makadzidza kusvika rugwaro rwupi?
 - a) puraimari
 - b) fomu yechipiri
 - c) fomu yechima
 - d) fomu yechitanhatu
 - e) koreji
 - f) handina kumboenda kuchikoro

5. Munoita basa ripi?

a) handishande

b) ndakasiya basa

c) ndinozvishandira

d) ndinoshanda

6. Muowana mari yakawanda sei pamwedzi?

a) pasi pemazana maviri emadhora

b) pakati pemazana maviri nemazana mashanu

c) pakati pemazana mashanu ane dhora rimwechetenemazana masere

d) pakati pemazana masere ane dhora rimwe chete nechuru chine zana ramadhora.

e) mari iri pamusoro pechuru chine zana ramadhora nerimwe chete.

7. Munogara kupi? a) dhorobha

b) kumavuwu

c) pamughodhi

d) papurazi

e) pamwe pasina kudomwa

8. Munonamata chitendero chipi? a) chikirisitu

b) chiisiramu

c) handina chitendero

d) zvimwewo

9. Munogara nani? a) nemubereki

b) memunhu wandakaroorana naye

c) nevandinozvara nawo

d) nemwana/vana

e) ndinogara ndega

f) nevamwewo

APPENDIX F

GWARO REKUBVUMA KUPINDA MUTSVAGIRIDZO

Wongororo yehukama huri pakati pekushandisa kudya kunokurudzirwa uye kuchiwanikwa nemhando yeupenyu hunoraramwa nevanhu vanorarama nuhutachiona hweHIV.

Zita rangu ndinonzi Godfrey Mutara. Ndiri mudzidzi weunivhesiti yeZimbabwe ari kudzidza zveukoti. Ndiri kuongororawo hukama huripakati pekushandisa kudya kunokurudzirwa uye kuchiwanikwa nemhando yehupenyu hunoraramwa nevanhu vanorarama nehutachiona hweHIV. Ndinokumbirawo kuti mungemuri muchirongwa ichi. Umbowo hwandicawana kubva kwamuri hakuna mumwe achazohuziva kunze kwangu ini ndiri kuhutora.

Handisahndisi mazita enyu asi ndichashandisa makodhi. Ndichakubvunzai mibvunzo kwenguva ingaita mamineti gumi nemashanu uye makasununguka kubuda kana kuramba kupahumbowo panguva ipi zvayo uye hazvikanganise marapirwo enyu pano. Kuva kwenyu muchirongwa ichi kuchabatsira kuwana humbowo hutsva maererano nekudya kunopfanirwa kudyiwa nemunhu ane hutachiona hweHIV. Ruzivo rwuchawanikwa rwuchabatsira kuwedzera zivo pakati pehukama huripo pakati pehutachiona hweHIV nezvekudya.

Hapana kukanganisika kana kukuvara kwakanyanya kwamungaite muchurongwa ichi asi munogona kuve nekushushikana mupfungwa nekuti muchabvunzwa mibvunzo ine chekuita nekuti makatanga kuonekwa riini kuti mune hutachiona hweHIV. Muchabvunzwave chikafu chamunodya zvakare munotarisirwa kurangarira chikafu chamakadya mumashure. Makasununguka kubvunza mutori wehumbowo chero ipi nguva

kana pane zvamusinganzwisise. Ndinowanikwa pakati pesvondo pakero inoti; Univhesiti yeZimbabwe College of Health Sciences, Department of Nursing Sciences.

Telephone 04-791631

Ndaverenga kana kuti ndaverengerwa ndikanzwisisa gwaro rino zvakare ndinobvuma kuve muchirongwa ichi.

.....
Taratadzo yezita remupi wehumbowo

.....
Zuva

.....
Taratadzo yezita remutori wehumbowo

.....
Zuva