

## **Research Article**

# **A Choice to Remain Healthy: An Analysis of Diet and Nutrition of People Living With HIV/AIDS in Gweru Urban.**

**Panganai Tsitsi<sup>1</sup>, Dr. Kurebwa Mercy<sup>2\*</sup>**

<sup>1</sup>Lecturer, <sup>2</sup>Senior Lecturer, Zimbabwe Open University, Zimbabwe

### **\*Corresponding author**

Dr. Kurebwa Mercy

Email: [mtkurebwa@gmail.com](mailto:mtkurebwa@gmail.com)

---

**Abstract:** The purpose of the study was to analyse the diet and nutrition of people living with HIV/AIDS (PLWHA) in Gweru Urban. Data was collected through individual interviews and focus group discussions in tandem with the qualitative research approach that was used in the study. The participants were PLWHA who had come for review at Gweru Hospital and from the clinical nurses and counsellors working at the opportunistic clinic of Gweru Hospital. Consent was obtained from the patients and hospital authorities since the issue under discussions was sensitive. The results revealed that PLWHA were not having a balanced diet due to socioeconomic problems, health problems and lack of knowledge. They just ate what ever they got to fill the stomach. Whilst the clinical nurses were giving PLWHA all the relevant information, the study revealed that the timing was not appropriate. The study also revealed that PLWHA in Gweru urban have self pity and are donor dependent. The paper recommends that information on nutrition be given when the patients are well and have accepted their condition. This way they will be more receptive. Health education on diet and nutrition should be an ongoing activity so that PLWHA are fully knowledgeable on the role of nutrition in HIV/AIDS if they are to remain healthy in spite of HIV infection. In addition to this, positive attitudes need to be uncalculated in PLWHA so that they do not become donor dependent.

**Keywords:** Nutrition, diet, People Living with HIV/AIDS (PLWHA), Immunity, knowledge

---

## **INTRODUCTION**

Few crises have affected human health and threatened national, social and economic progress in quite the way that HIV/AIDS has. The pandemic has had a devastating impact on household food security and nutrition through its effects on the availability of food, access to food and its use for good nutrition. With worsening poverty due to illness, families lose their ability to acquire food as time and household resources are consumed in an effort to care for sick family members. Good nutrition is essential for achieving and preserving health while helping the body to protect itself from infections. According to WHO [1] report, consumption of a well-balanced diet is essential to make up for the loss of energy and nutrients caused by infections including HIV/AIDS and helps to promote a sense of well-being, hence the need to analyse the diet and nutrition of people living with HIV/AIDS (PLWHA) in Gweru Urban.

## **REVIEW OF LITERATURE**

### **Nutrition in People Living with HIV/AIDS (PLWHA)**

People with HIV/AIDS often do not eat enough because the illness and the medicines taken for it may reduce the appetite, modify the taste of food and

prevent the body from absorbing it[2].The symptoms such as a sore mouth, nausea and vomiting make it difficult to eat. Tiredness, isolation and depression reduce the appetite and the willingness to make an effort to prepare food and eat regularly. In addition to this, money to buy food is often not enough [3].

Adequate nutrition, which is achieved through consumption of a balanced healthy diet, consisting of locally available foods and fortified food and/or micronutrient supplements when appropriate, is vital for the health and survival of all individuals regardless of HIV status. According to WHO [3], nutritional support is an integral part of a comprehensive response to HIV/AIDS, helping to maintain the immune system and sustain healthy levels of physical activity.

Malnutrition and HIV negatively affect each other. Changes in metabolism in HIV-infected people occur as a result of the immune system's response to HIV infection. When the body mounts its acute phase response to infection, it releases pro-oxidant cytokines and other oxygen-reactive species. These cytokines lead to anorexia and fever [2]. The diet should therefore contain foods that are sufficient in both energy (in the form of carbohydrates) and protein[1]. The food should

be prepared well as raw eggs, unpasteurized milk and undercooked meats may contain bacteria that are harmful to the already immune-compromised HIV-infected person. 'Junk' such as chips, biscuits, and sweets have little nutritional value and sweets and sugar may promote the growth of fungi (thrush). Expired foods, acidic foods, foods with preservatives, and oily foods aggravate symptoms related to diarrhea, nausea or vomiting, loss of appetite, and mouth and throat sores [4].

#### **Benefits of Nutrition in HIV/AIDS**

HIV infection has long been recognized to have a possible negative impact on the nutritional status of people living with HIV/AIDS and lead to malnutrition. The relationship between HIV/AIDS and malnutrition is a classic example of the vicious cycle of immune dysfunction, infectious diseases, and malnutrition [4]. However, FAO [5] states that, "Food is not a magic bullet. It won't stop people from dying of AIDS but it can help them live longer and have more comfortable and productive lives." Eating well helps to maintain and improve the performance of the immune system (the body's protection against infection) and therefore helps a person to stay healthy in spite of HIV infection.

#### ***Nutrition improves the immune system.***

When infected with the HIV virus, the body's defense system works harder to fight infection. This increases energy and nutrient requirements. Further infection and fever also increase the body's demand for food [6]. Once people are infected with HIV they have to eat more to meet these extra energy and nutrient needs. Such needs will increase even further as the HIV/AIDS symptoms develop [5].

Deficiencies of vitamins and minerals, such as vitamins A, B-complex, C, E, and selenium and zinc, which are needed by the immune system to fight infection, are commonly observed in people living with HIV in all settings [7]. Deficiencies of antioxidant vitamins and minerals contribute to oxidative stress, a condition that may accelerate immune cell death and may increase the rate of HIV replication. Short-term micronutrient supplementation has been shown to improve body weight and body cell mass, reduce HIV RNA levels, improve CD4 cell counts, and to reduce the incidence of opportunistic infections and hospitalization in small studies of male and female adults with AIDS, including those on antiretroviral treatment [7,8]. A larger placebo-controlled randomized trial in 481 antiretroviral naïve HIV-positive men and women, carried out in Thailand, found that daily micronutrient supplementation for 1 year reduced mortality in those with baseline CD4 cell counts  $<200 \times 10^6/L$  but had no effect on plasma viral load [8]. Providing nutritional care and support for people living with HIV/AIDS at all stages of the disease helps the immune system to be kept functional. Whereas

micronutrient deficiencies may affect replication of the invading virus, it induces several metabolic alterations in the body as well as synthesis of immunoglobulins. Specific micronutrient deficiencies may also favour the host and supplementation favour the virus [9]. In a study by Fawzi *et al* [10] HIV replication was enhanced in monocytes cultured with retinoid. Similarly, a high zinc intake increases the replication of HIV. Iron, which is important for optimal immune function is also a pro-oxidant and may promote replication of viruses [11]. Because of this, Forrester and Sztam [9] recommend that supplementation be controlled and only required micronutrient be administered.

#### ***Nutrition prevents malnutrition and weight loss.***

Good nutrition cannot cure AIDS or prevent HIV infection, but it can help to maintain and improve the nutritional status of a person with HIV/AIDS and delay the progression from HIV to AIDS-related diseases. It can therefore improve the quality of life of people living with HIV/AIDS [8]. The same author goes on to explain that nutritional care and support are important from the early stages of the infection to prevent the development of nutritional deficiencies as a healthy and balanced diet will help to maintain body weight and fitness. If a person does not eat enough food, or the food eaten is poorly absorbed, the body draws on its reserve stores of energy from body fat and protein from muscle. As a result, the person loses weight as body mass and muscles are lost and become malnourished.

Malnutrition elicits dysfunctions in the immune system and promotes increased vulnerability of the host to infections [12] especially opportunistic infection in the case of HIV. According to the manual on nutritional care for PLWHA, malnutrition [4], even at the early stages of HIV infection when no symptoms are apparent makes high demands on the body's nutritional status. This is more so in Africa which has a high HIV burden. The prevalence of wasting in adults with advanced HIV infection in sub-Saharan Africa is 20%-40% [13].

HIV infection affects nutrition through increases in resting-energy expenditure; reductions in dietary intake, nutrient mal-absorption, and loss and complex metabolic alterations that culminate in weight loss and wasting common in AIDS [14]. According to Duggal *et al* [12], mal-absorption occurs in HIV children; approximately 30-60% of asymptomatic children infected with HIV mal-absorb carbohydrates, 30% mal-absorb fat, and 32% mal-absorb protein. All this leads to wasting syndrome if the role of nutrition is not fully utilized by PLWHA. Unfortunately, the effect of HIV on nutritional status begins early in the course of the infection, even before an individual may be aware that he or she is infected with the virus [14]. As a result good nutrition and a balanced diet should be a part and parcel of everyday life for everybody.

Protein energy malnutrition (PEM) causes widespread atrophy of lymphoid tissues; particularly T-lymphocyte cells thus reduce numbers of circulating mature CD4 helper cells, and impair production of antibody [15]. Hence the patient's ability to ward off infections and show recovery is compromised. The failure of antibody formation is reversed within a few days of protein therapy as amino acids become available for the synthesis of immune proteins [16]. It then becomes apparent that nutrition is vital for PLWHA if they are to remain healthy in the wake of HIV/AIDS.

#### ***Nutrition and opportunistic infections.***

Food, once eaten, is broken down by digestion into nutrients. These nutrients pass through the gut walls into the bloodstream and are transported to the organs and tissues in the body where they are needed. One of the consequences of HIV and other infections is that since the gut wall is damaged, food does not pass through properly and is consequently not absorbed.

Diarrhoea is a common occurrence in people with HIV/AIDS. When a person has diarrhoea the food passes through the gut so quickly that it is not properly digested and fewer nutrients are absorbed. HIV-related infections, such as tuberculosis and diarrhoea, not only have nutritional status as a significant determinant of their incidence and severity, but they also have severe nutritional consequences that commonly precipitate appetite loss, weight loss and wasting [1].

Forrester and Sztam [9] argue that, though antioxidants inhibit HIV replication, they may actually promote opportunistic infections by preventing the oxidative burst which is considered important for the bactericidal properties of phagocytes. As a result evidence-based nutrition interventions should be part of all national HIV care and treatment programmes. Routine assessment should be made of diet and nutritional status (weight and weight change, height, body mass index or mid-upper arm circumference, and symptoms and diet for people living with HIV [11].

#### ***Nutrition complements the effects of Anti -Retroviral Therapy (ART).***

Good nutrition will complement and reinforce the effect of any medication taken as well as maintaining body weight and strength for the efficacy of the drugs [14]. The importance of food and adequate dietary intake is essential to achieve optimal nutrition and health for people before and during treatment of HIV and related co- morbidities has been highlighted WHO report [17]. However, certain foods affect the bioavailability of antiretroviral medications; examples included garlic and other traditional therapies such as African potato [18]. The use of ART has negative effects on metabolism of food and these effects have dietary and nutritional implications in PLWHA [19].

Mortality during the initial months of antiretroviral therapy (ART) is high in sub-Saharan Africa, and low BMI is an independent risk factor for early mortality [20]. In Malawi, supplementary feeding in conjunction with ART is advocated as the standard of care for wasted HIV-infected adults [21]. The same author goes on to argue that, supplementary feeding may improve outcomes in wasted HIV-infected patients receiving ART; however, there is limited research that provides evidence of the benefit of supplementary feeding in this population.

#### ***Nutrition Reduces morbidity and mortality***

Studies indicate that low blood levels and decreased dietary intakes of some micronutrients are associated with faster HIV disease progression and mortality [9]. Studies show that there is evidence that supplements of B-complex vitamins and vitamins C and E, can improve CD4 cell counts leading to an improved immune status. These vitamins also reduce oxidative stress, prevent childhood diarrhoea and enhance pregnancy outcomes- including better maternal prenatal weight gain and a reduction of fetal death, preterm birth and low birth weight [22]. However the Acute Nutrition and HIV/AIDS Training Manual [4] suggest that taking vitamin E supplements in the late stage of the disease may not be effective because the vitamin is fat soluble hence is poorly absorbed. In HIV-infected persons undergoing routine clinical care, mixed carotenoids plus multivitamins improved overall mortality compared with multivitamins alone [23]. In a similar setting, selenium supplementation was associated with a lower viral load in HIV-infected persons who were not frankly selenium deficient. Periodic vitamin A supplementation has been shown to reduce all-cause mortality and diarrhoea morbidity in vitamin A-deficient children, including HIV-infected children [10].

The community-based study by Kelly *et al* [24], in Zambia showed a 71% reduction on mortality of HIV infected person on micronutrients. Other studies by Range *et al* [25] and Jiamtonet *et al* [26] also showed the same results. Trials conducted in different geographical areas by Fawzi *et al* [9], McClelland *et al* [27] and Kaiser *et al* [28] concluded that the use of high-dose micronutrients, compared with placebo increased CD4 cell counts in HIV infected persons. Thus, high-dose multiple micronutrients of varying composition were of benefit in HIV-infected persons from different geographic regions and with widely varying characteristics, including differing levels of micronutrient deficiency. By improving the CD4 cell count nutrition extends the period from infection to the development of the AIDS disease and thus reduces the morbidity and mortality rates in PLWHA.

When food intake is low, multivitamin and mineral supplements - often in the form of pills - can

help to meet increased requirements. However, these supplements are often not available, expensive and leave less money for food. As a result adequate micronutrient intake is best achieved through an adequate diet. However, in settings where these intakes and status cannot be achieved, multiple micronutrient supplements may be needed in pregnancy and lactation [9].

#### **Practices of PLWHA In Relation to Nutrition and Diet.**

In General, Most PLWHA Do Not Get Enough Food. In A study by Bukusuba *et al* [29], in Uganda, 60.2% of the participants reported consumption of less than six food-groups, implying a poor or an inadequate dietary quality. Lack of diversity in the diet is, therefore, a likely major contributory factor to inadequate intake of essential micronutrients. Poor nutritional knowledge, attitudes, and dietary practices, therefore, play a key role in the rapid progression of HIV[29]. These aspects are also among the key factors that determine the quality of life among PLWHA, although they have been largely overlooked, especially in resource-limited settings. In the same study, 72.2% of the study participants neither had the knowledge on important aspects of the role of nutrition in enhancing treatment efficacy nor the drug-food interactions. Without this knowledge, one would not make an effort to improve nutrition.

Bukusuba *et al*, [29] claim that poor dietary practices among the study population was an example of the negative coping strategies of HIV-affected households when they do not have enough food. Bukusuba *et al* [29] also found that changes in dietary quantity and quality are among the common coping mechanisms of PLWHA in Uganda. The same study provided the evidence of negative impacts that HIV had on access to food in the affected households. The increasing failure of households to ensure the availability of adequate food and access to it, thus, hinders the practice of recommended nutrition habits for the PLWHA in these households. Because they are food-insecure, people maybe less able to access information about HIV/AIDS or less able to act on their knowledge[30].

Other studies have shown that low socioeconomic status, level of education, personal beliefs, unavailability of food, and low nutrition knowledge as contributory factors to poor dietary practices [31]. Bukusuba *et al*, [29] recommend that the nutrition knowledge and positive attitudes gained by the PLWHA should be followed up to ensure that they are transformed into good dietary practices. Support groups of the PLWHA are a good vehicle for implementing these recommended practices and targeted nutrition interventions. Knowledge about drug-food interactions, use of fruits and vegetables as protective foods, and legumes as complementary protein source should be

emphasized and promoted. However the same author noted that food-aid had a positive impact on dietary practices of beneficiary households.

Gillespie and Kadiyala [30] also noted that HIV/AIDS does not only precipitate and exacerbate food and nutrition insecurity, but the spread of the virus is also accelerated when women may be forced into transactional sex in order to feed their families. On the other hand, malnutrition among pregnant and lactating women may increase vertical transmission rates but due to food insecurity the mother continues to breast feed their children although the mother may have knowledge on the available feeding option in HIV/AIDS.

#### **Nutritional challenges in PLWHA**

The HIV/AIDS pandemic combined with drought, floods, soaring food prices, decades of conflict, economic decline and cuts in social services, have overwhelmed families in many parts of sub-Saharan Africa, leaving them with few coping mechanisms [31]. The UNICEF report [31] goes on to explain that, low micronutrient levels are associated with increased progression to AIDS in adults living with HIV. This crisis in Africa has underscored the dire nutritional needs of all children who are HIV positive or affected by HIV/AIDS, such as orphans and those living in households with infected family members who are left to fend for themselves. Since they cannot earn money, they work for other people in exchange for food, barter some of it to obtain other food items and beg for meals from other homes. With this practice they cannot have adequate nutrition. In order to pay for traditional medicines and to transport the patient from one herbalist to the other, they have progressively had to sell livestock, seeds, tools, clothes and cooking utensils making their situation more desperate. In a study of HIV-infected children in South Africa, more than 50% were underweight with stunted growth, while more than 60% had multiple micronutrient deficiencies [33].

Three out of every four poor people in developing countries live in rural areas, and most of them depend directly or indirectly on agriculture for their livelihoods with women being the main farmers or producers in many parts of the world [34]. In Africa, the mother is responsible for providing food on the table, planting, growing, harvesting and storage of food including beans, nuts, vegetables and the staple food. When the mother becomes sick with HIV, these foods disappeared from the family's diet. Since she was responsible for planting, weeding, harvesting, storage and processing of food, the other family members have had to find new ways to obtain food [34]. Without proper nutrition, almost 50 per cent of infected infants will die before the age of two. In 2012, 646,852 children aged 0-14 were receiving antiretroviral therapy in low and middle income countries and 52% of them also suffer from under-nutrition [31].

Many parts of the world most severely affected by HIV have long been plagued by systemic and chronic food insecurity, and there is a complex interrelationship between AIDS and food insecurity [3]. PLWHA in the Sub Saharan Africa face a lot of challenges to secure food. These challenges can be natural or social [30]. Some of the challenges include; reductions in soil fertility, declines in on-farm conservation and/or irrigation practices, decline in quality of permanent crops and appropriation of land by relatives (taken from widows, orphans[30]. Food insecurity can also be attributing to increased reliance on donors and extended family which increase the dependency ratio [3]. Illness, malnourishment, and/or death of one or more household members reduced time available to procure and prepare food due to caring for the sick. Financial constraints due increased expenditure on health care, transport, funerals and inability to work reduce availability of food. All this will lead to reduced quality and quantity of dietary intake which compounds the shortage of food

Zimbabwe has one of the world's highest HIV prevalence of 13 percent with an estimated 570,000 Zimbabweans receiving ARVs [35] with a big number of patients coming from poor and vulnerable households that cannot afford nutritious food. Mugove [36], laments that the country's economic collapse in the past decade has significantly strained the ability of poor HIV-positive Zimbabweans to feed themselves and their families when on ARVs. Prices remain comparatively high for families with low incomes and little or no access to US dollars, despite the improved availability of food; Unemployment levels are extremely high as a result bringing food home is such a big headache [36]. Tholanah [37], an AIDS activist explains that the worry of PLWHA in Zimbabwe is not to get nutritious food, but just any food that can fill the stomach hence places a burden on the donor society. This makes it difficult to halve the HIV/AIDS burden. The 2008 World Development Report Agriculture for Development highlights the vital role of agriculture in sustainable development and its importance in achieving the Millennium Development Goal of halving by 2015 the HIV/AIDS burden.

#### **OBJECTIVES**

- To establish the knowledge and practices of PLWHA in diet and nutrition
- To assess the nutritional value of the diets of PLWHA
- To explore the challenges faced by PLWHA in securing food

#### **RESEARCH QUESTIONS**

- How informed are PLWHA on practices on diet and nutrition?

- To what extent do the foods they eat provide adequate nutrition?
- What challenges do they face in securing food?

#### **METHODOLOGY**

The research adopted a qualitative interpretive research approach. The study concentrated on this approach since this study aimed at elucidating what the participants had to say with regard to nutrition and diet of PLWH in their natural setting. The approach is good at surfacing deep issues and making voices heard [38]. It also allows the researcher to gain understanding of this social phenomenon from participants' perspectives in their natural settings [39].

The research was conducted at Gweru Hospital in Zimbabwe. The study constituted 30 PLWHA and 5 clinical nurses who were purposefully selected for individual interviews. Two focus groups of 8 participants each were also conducted to triangulate data from individual interviews. Focus groups were believed to increase the quality and richness of data, more than a one-on-one interviewing could have done alone [39]. After transcribing the audiotapes of the interviews, the information was thematically analyzed to increase an understanding of it and to be able to present the findings clearly. This identification of themes provided depth to the insights about understanding the individual views of the PLWHA had on nutrition and diet.

Since the topic is about sensitive and personal health issues, ethical issues were taken into consideration. Permission to carry out the study was sought from the hospital authorities who were also eager to know the findings. Consent was sought from individual participants and only those who were willing to take part in the research were involved. The participants were assured of confidentiality in terms of name and HIV status.

#### **RESULTS AND DISCUSSION**

##### **Knowledge of PLWHA on diet and nutrition in relation to HIV/AIDS**

It came out from the focus groups and individual interviews that PLWHA were aware that there is a positive relationship between nutrition and HIV. According to WHO [3], adequate nutrition, which is achieved through consumption of a balanced healthy diet, consisting of locally available foods and fortified food and/or micronutrient supplements when appropriate, is vital for the health and survival of all individuals regardless of HIV status. The results of the study are in agreement with WHO [3] as the majority (95%) of the participants believe that nutrition boost their immunity and keeps them healthy. Some of the participants gave the following statements;

*"We eat to keep healthy"*

*"We eat to prevent opportunistic infections."*

*"We eat to improve health."*

*"Food gives us energy"*

These comments made by the participants tend to suggest that PLWHA are aware that nutrition is an important aspect of their health. However some (5%) were not aware of the relationship between HIV and nutrition. One participant said, *"There is no relationship"*

The clinical nurses and councilors all (100%) agreed that the clients were aware that a good nutrition and diet is beneficial for them because that is what they teach them. Sentiments like;

*"We teach them that good nutrition helps them to recover."*

*"This is what we teach them at first contact."*

*"We teach them everything recommended about nutrition in HIV"*

All the responses from PLWHA confirmed that they were given information on nutrition and diet. However, the big question was, *are PLWHA knowledgeable on diet and nutrition in HIV/AIDS?* The assumption was they were not, since most of them claimed that they *"were too sick to understand what the nurses were saying."* These findings seemed to suggest that although PLWHA were given information on diet and nutrition, the timing was at times wrong. All (100%) of the interviewed clinical nurses and counselors agreed that the information on nutrition was given at first contact. In contrast, the PLWHA believed that the information on nutrition and diet should be given when they have accepted their condition as indicated by these statements;

*"This information should be given after we have started ART and feel better."*

*"We should get lessons on diet every time we come for review so that we really understand"*

Thus the findings concurred with Bukusuba *et al* [29] who claims that poor nutritional knowledge, attitudes, and dietary practices play a key role in the rapid progression of HIV.

#### **Practices of PLWHA on diet and nutrition in relation to HIV/AIDS**

From the study, PLWHA felt as if the government had abandoned them in terms of food. These are some of the sentiments of PLWHA in terms of food;

*"We need food when we come for review"*

*"The government should give us money to buy food"*

*"We need donations of food"*

*"We are too weak to work"*

Such sentiments showed an inclination to rely on donations for survival. This supported what was noted in WHO report [3] that food insecurity can also

be attributed to increased reliance on donors and extended family which increase the dependency ratio.

In response to whether the PLWHA took any herbs for therapy, 100% said they only relied on ARVs. This was a positive practice as certain foods and herbs affect the bioavailability of antiretroviral medications; examples included garlic and other traditional therapies such as African potato [18]. However some of the focus group respondents claimed that they took sweets for a dry mouth despite the fact that 'junk foods' such as chips, biscuits, and sweets have little nutritional value and sweets and sugar may promote the growth of fungi (thrush) [4].

It came out from the study that some women resorted to prostitution in order to secure food. However, this method was shunned by most of participants of both focus groups. Gillespie and Kadiyala [40] also noted that HIV/AIDS does not only precipitate and exacerbate food and nutrition insecurity, but the spread of the virus is also accelerated when women may be forced into transactional sex in order to feed their families.

#### **Nutritional value of diets for PLWHA**

Whilst the participants seemed to know about the need for a healthy diet, the study revealed that the majority were not eating a balanced diet. About 95 % of the respondents highlighted that they could not afford a balanced diet. The statement, *"We have no money so we just eat to satisfy our hunger"* was a common saying from the two focus groups. This tends to support Tholanah[37], an AIDS activist who laments that, the worry of PLWHA in Zimbabwe is not to get nutritious food, but just any food that can fill the stomach. Some of the participants indicated that they had a large family to take care of hence could not afford a special diet for themselves. From the research, it came out that PLWHA did not pay any special consideration on the nutritional value of the food they buy but on the affordability of the food and whether it was enough for the family. Bukusuba *et al*, [29] claim that poor dietary practices was an example of the negative coping strategies of HIV-affected households when they do not have enough food. This is supported by the following statements that were raised by the participants from both focus groups and individual interviews with PLWHA;

*"It is advocated that we have a balanced diet but we simply can not afford it."*

*"We eat vegetables as meat is expensive and we can not afford it."*

When asked about the 24 hour diet recall, it was evident that PLWHA were not eating balanced diets. Their breakfast was mainly composed of porridge, tea with bread or sweet potatoes or pumpkins or mutakura (a mixture of cereals) depending on the season. This breakfast was mainly carbohydrates with

no proteins. This evident lack of proteins compromises the immunity and recovery of PLWHA as protein deficiency results in reduced numbers of circulating mature CD4 helper cells, and impaired production of antibodies [15]. For lunch it was mainly 'mahewu', sadza and vegetables or mufushwa. Again there were no proteins yet they are needed to correct loss of weight which is common in HIV. Super was mainly sadza and vegetables, or matemba. A few mentioned that they had some form of white meat. Out of the 16 people who participated in the focus group, 10 people (63%) ate sadza and vegetables for both lunch and super everyday for a week. This is a clear indication of an unbalanced diet. 6 people (37%) indicated that they varied their diet to include fish, chicken and matemba occasionally.

One of the focus group participant claimed that she and her family could go for days without a proper meal. "*We sometimes survive on water and maputi as money can be a problem,*" laments the woman. 15 people (94%) indicated that they can go for a month without eating any fruit. Fruits are a very important source of vitamins. Vitamin, E, C and B complex have been shown to improve CD4 Cell count [9] in HIV as they provide antioxidants which are very important in HIV. If such a high percentage of PLWHA are eating such a poor diet, Zimbabwe may have problem of improving the health and wellbeing PLWHA.

All responses from the clinical nurses confirm that PLWHA were not getting a balanced diet. "*Although we teach them the right foods to eat, they can not afford it,*" was a common response from the clinical nurses. In a study in Uganda by Bukusuba *et al* [29], 60.2% of the participants reported consumption of less than six food-groups, implying a poor or an inadequate dietary quality and this concurs with the findings of this study. Lack of diversity in the diet is, therefore, a likely major contributory factor to inadequate intake of essential micronutrients which need to be complimented.

All the respondents in the study agreed that there were no supplements given to PLWHA. Studies revealed that there is evidence that supplements of B-complex vitamins and vitamins C and E, can improve CD4 cell counts leading to an improved immune status [9].

### **Challenges faced by PLWHA in relation to diet and nutrition**

The study showed that PLWHA were not having a balanced diet because of;

- socioeconomic problems;
- healthy problems and
- lack of knowledge on nutrition.

### **Socioeconomic problems**

Lack of money was a cause for concern for the participants. Most of them claimed that they had low incomes and that the income was not adequate to buy the type of food they should eat. This statement was echoed by a number of participants during the focus group discussions. Mugove [36] also highlighted that the country's economic collapse in the past decade has significantly strained the ability of poor HIV-positive Zimbabweans to feed themselves and their families when on ARVs. Prices remain comparatively high for families with low incomes and little or no access to US dollars, despite the improved availability of food.

13 (81%) of the interviewed PLWHA are either unemployed or earn less than \$100 USD, which far below the poverty datum line. Unemployment levels are extremely high as a result bringing food home is such a big headache [36]. Some had large families so the money was inadequate. These findings were also highlighted in the UNICEF report [32] that the HIV/AIDS pandemic combined with soaring food prices, economic decline and cuts in social services, have overwhelmed families in many parts of sub-Saharan Africa, leaving them with few coping mechanisms. Others relied on charity from family members or other well-wishers hence at times will be completely broke. Without money, one can not buy food. This tend to suggest that PLWHA people were at a vey high risk of opportunistic infections compounded malnutrition and worsening their situation.

### **Healthy problems**

Some of the participants said that they could not eat what they want because of lack of appetite. These findings support Raiten, [2] who claim that, people with HIV/AIDS often do not eat enough because the illness and the medicines may reduce the appetite, modify the taste of food and prevent the body from absorbing it. A number of the participants said, "*Sometimes the food is there but because of lack of appetite, you cannot eat.*" Stress was also cited as one the causes of poor eating habits. Diarrhea was another condition mentioned by the participants as affecting their nutrition. One participant said, "*I am currently having diarrhoea and all the food that I eat comes out.*" However, there were some participants who claimed that the drugs they take make them want to eat frequently.

### **Lack of knowledge on nutrition**

It came out from the study that PLWHA were provided with information on nutrition before being commenced on ARVs. However this was a challenge as some of the participants claimed that they were too ill to pay attention to what was being said. Some of the comments echoed by participants were;

*"I was too ill to listen so I just pretended to be listening"*

*"I was too sick to hear what they were saying; all I wanted was an injection to get better."*

*“Now that I am better and have accepted, I want to know more about what I should eat.”*

However there was only one participant who said that she understood everything.. Her reason for understanding was, *“I got tested before I was not ill so my focus was on not getting sick”*

The clinical nurses who were interviewed sited poor economic status and poor healthy as the challenges faced by PLWHA in terms of nutrition. It came out from the study that in order to address these challenges, PLWHA needs income generating project, food donations or money to buy food.

## CONCLUSION

The purpose of the study was to analyse the nutrition and diet of PLWHA. Based on the analysis of the results the following conclusions were drawn;

- PLWHA were not having a balanced diet and do not put into consideration their condition when buying and preparing food.
- They do not have adequate information on nutrition since the timing for giving the information was sometimes poor.
- The attitude of PLWHA was that they can not help themselves and were donor dependent.

## RECOMMENDATIONS

The recommendations are based on the findings of the study and the themes derived from the responses of PLWHA and the clinical nurses at Gweru Hospital. The recommendations will be thus directed at assisting PLWHA to live healthy and productive lives.

- The timing of nutritional information need to be adjusted to when the client has accepted the condition and is physically fit to pay attention.
- The nutrition knowledge and positive attitudes gained by the PLWHA should be followed up to ensure that they are transformed into good dietary practices.
- Information on nutrition in HIV should be an ongoing activity so that PLWHA fully understand the role of nutrition in HIV
- Since money is a problem with the majority of PLWHA, the government can assist with income generating activities for these people become self sustainable
- Positive attitudes need to be in calculated so that the PLWHA do not become donor dependent and move away from self pity

## REFERENCES

1. WHO Report; Nutrient requirements for people living with HIV/AIDS. 2003. Available online at [who.int/nutrition/topics/consultation\\_nutrition\\_and\\_hiv\\_aids/en/](http://who.int/nutrition/topics/consultation_nutrition_and_hiv_aids/en/)
2. Raiten DJ, Grinspoon S, Arpadi S. Nutritional considerations in the use of ART in resource-

limited settings. Geneva, Switzerland: World Health Organization, 2005.

3. WHO; Report On Food And Nutrition For People Living With HIV/AIDS. 2013.
4. Quality of Health Care (RCQHC), the FANTA (Food and Nutrition Technical Acute Nutrition and HIV/AIDS: A Training Manual of the Regional Centre for Kampala, 2003
5. Food and Agriculture Organization (FAO). News detail. Take two tablets after the meals, but don't forget the meals: it can help delay the onset of AIDS, 2003, <http://www.fao.org/world/regional/rap/news>.
6. Raiten DJ; Nutrition and Pharmacology: General Principles and Implications for HIV, AM J Clin Nutr, 2011; 94(6):1697S- 1702S
7. Villamor E; A potential role for vitamin D on HIV infection? Nutr Rev, 2006; 64:226–33.
8. Raiten DJ; One size fits all? Complications in a complicated world. Sight and Life, 2010; 34–35. Available from: [http://www.sightandlife.org/images/stories/pages/images/content/magazine/3\\_2010/SL\\_Mag\\_3\\_2010.pdf](http://www.sightandlife.org/images/stories/pages/images/content/magazine/3_2010/SL_Mag_3_2010.pdf).
9. Forrester JE, Sztam KA; Micronutrients in HIV/AIDS: is there evidence to change the WHO 2003 recommendations? Am J Clin Nutr, 2011; 94(6):1683S-1689S.
10. Fawzi WW, Msamanga GI, Spiegelman D, Wei R, Kapiga S, Villamor E, Mwakagile D, Mugusi F, Hertzmark E, Essex M, et al; A randomized trial of micronutrient supplements and HIV disease progression and mortality. N Engl J Med, 2004; 351:23–32.
11. World Health Organization (WHO); Priority Interventions—HIV/AIDS prevention, treatment and care in the health sector, 2010, [http://whqlibdoc.who.int/publications/2010/9789241500234\\_eng.pdf](http://whqlibdoc.who.int/publications/2010/9789241500234_eng.pdf).
12. Duggal S, Chugh TD, and Duggal AK; Clinical Development in Immunology, 2012; 2012: 784740.
13. Van der Sande MAB, van der Loeff MFS, Aveika AA, Sabally S, Togun T, Sarge-Njie R, et al.; BMI at time of HIV diagnosis: a strong and independent predictor of survival. J Acquir Immune Defic Syndr, 2004;37:1288-1294.
14. Piwoz EG, Bentley ME; Women's Voices, Women's Choices: The Challenge of Nutrition and HIV/AIDS. J. Nutr, 2005;135(4):933-937
15. Kumar A, Takada Y, Boriek AM, Aggarwal BB; Nuclear factor- $\kappa$ B: its role in health and disease. Journal of Molecular Medicine, 2004; 82(7):434–448.
16. Fernandez NA; Serum antibody response of malnourished children as compared with well nourished children. Boletín de la Asociación Médica de Puerto Rico, 2006; 52:222–231.
17. World Health Organization (WHO); Global prevalence of vitamin A deficiency in

- populations at risk 1995–2005. WHO Global Database on Vitamin A Deficiency. Geneva, Switzerland: 2009.
18. Mills E, Cooper C, Seely D, Kanfer I; African herbal medicines in the treatment of HIV: Hypoxis and Sutherlandia. An overview of evidence and pharmacology. *Nutr J*, 2005;4:19–25.
  19. Fitch K, Grinspoon S; Nutritional and metabolic correlates of cardiovascular and bone disease in HIV-infected patients. *Am J Clin Nutr*, 2011; 94(suppl):1721S–28S.
  20. Ndekha MJ, van Oosterhout JJG, Zijlstra EE, Manary M, Saloojee J, Manary MJ; Supplementary feeding with either ready-to-use fortified spread or corn-soy blend in wasted adults starting antiretroviral therapy in Malawi: randomised, investigator blinded, controlled trial. *BMJ*, 2009;338:b1867.
  21. Mahlungulu S, Grobler LA, Visser ME, Volmink J; Nutritional interventions for reducing morbidity and mortality in people with HIV. *Cochrane Database Syst Rev*, 2007;(3):CD004536.
  22. Aghdassi E, Arendt BM, Salit IE, Mohammed SS, Jalali P, Bondar H, Allard JP; In patients with HIV-infection, chromium supplementation improves insulin resistance and other metabolic abnormalities: a randomized, double-blind, placebo controlled trial. *Curr HIV Res*, 2010;8:113–20.
  23. Austin J, Singhal N, Voigt R, Smaill F, Gill MJ, Walmsley S, Salit I, Gilmour J, Schlech WF 3rd, Choudhri S, et al; A community randomized controlled clinical trial of mixed carotenoids and micronutrient supplementation of patients with acquired immunodeficiency syndrome. *Eur J Clin Nutr*, 2006; 60:1266–1276.
  24. Kelly P, Katubulushi M, Todd J, Banda R, Yambayamba V, Fwoloshi M, Zulu I, Kafwembe E, Yavwa F, Sanderson IR, et al; Micronutrient supplementation has limited effects on intestinal infectious disease and mortality in a Zambian population of mixed HIV status: a cluster randomized trial. *Am J Clin Nutr*, 2008; 88:1010–1017.
  25. Range N, Changalucha J, Krarup H, Magnussen P, Andersen AB, Friis H; The effect of multi-vitamin/mineral supplementation on mortality during treatment of pulmonary tuberculosis: a randomised two-by-two factorial trial in Mwanza, Tanzania. *Br J Nutr*, 2006; 95:762–770.
  26. Jiamton S, Pepin J, Suttent R, Filteau S, Mahakkanukrauh B, Hanshaoworakul W, Chaisilwattana P, Suthipinittharm P, Shetty P, Jaffar S; A randomized trial of the impact of multiple micronutrient supplementation on mortality among HIV-infected individuals living in Bangkok. *AIDS*, 2003;17:2461–2469.
  27. McClelland RS, Baeten JM, Overbaugh J, Richardson BA, Mandaliya K, Emery S, Lavreys L, Ndinya-Achola JO, Bankson DD, Bwayo JJ, et al; Micronutrient supplementation increases genital tract shedding of HIV-1 in women: results of a randomized trial. *J Acquir Immune Defic Syndr*, 2004;37:1657–1663.
  28. Kaiser JD, Campa AM, Ondercin JP, Leoung GS, Pless RF, Baum MK; Micronutrient supplementation increases CD4 count in HIV-infected individuals on highly active antiretroviral therapy: a prospective, double-blinded, placebo-controlled trial. *J Acquir Immune Defic Syndr*, 2006;42:523–528.
  29. Bukusuba J, Kikafunda JK, Whitehead RG; Nutritional Knowledge, Attitudes, and Practices of Women Living with HIV in Eastern Uganda *J Health Popul Nutr*, 2010; 28(2): 182–188.
  30. Gillespie S, Kadiyala, S; HIV/AIDS and Food and Nutrition Security. 2005.
  31. Torheim LE, Ouattara F, Diarra MM, Thiam FD, Barikmo I, Hatløy A, et al.; Nutrient adequacy and dietary diversity in rural Mali: association and determinants. *Eur J Clin Nutr*, 2004;58:594–604.
  32. UNICEF /UNAIDS /WHO (2004) HIV and Infant Feeding: Guidelines for Decision-Makers. WHO/FRH/NUT/CHD/98.1.WHO/UNAIDS, Update 2004 WHO Geneva, Switzerland.
  33. Hendricks MK, Eley B, Bourne LT; Management of severe malnutrition: a manual for physicians and other senior health Matern Child Nutr, 2007; 3(4):322-333.
  34. Egal F, Valstar A; From Evidence to Action, International Food Policy Research Institute Food Policy Review 7 Washington DC. Cross Ref Medline, 2005.
  35. National Aids Council (NAC); Report On HIV and AIDS Statistics, Zimbabwe Nutrition care for people living with HIV and AIDS (PLWHA): training manual for community and home-based care providers: facilitators guide. Aug 31, 2008.
  36. Mugove; 2012. IRIN/PlusNews. <http://www.irinmews.org/report.aspx>
  37. Tholana; 2012. IRIN/PlusNews. <http://www.irinmews.org/report.aspx>
  38. Creswell JW; Research Design: Qualitative, Quantitative and Mixed Methods Approaches (Third Edition): London. Sage publications. 2010.
  39. McMillan JH, Schumacher SS; Research in education: evidence-based inquiry. (6th ed.). Boston: Pearson, 2010.
  40. Gillespie S, Kadiyala S; HIV/AIDS and Food and Nutrition Security US National Library of Medicine National Institutes of Health, HIV and Malnutrition: Effects on Immune System, 2005;51(6):466-70.