

Socio-Cultural Factors Affecting Nutrition Interventions in Care and Treatment of HIV And Aids in Nandi Central Sub County, Nandi County, Kenya

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Abstract

HIV infection has a significant impact on nutrition at the level of the family and community. High HIV seropositivity leads to high food insecurity. The general objective of the study was to examine the socio-cultural factors affecting nutrition intervention in the treatment and care of HIV and AIDS. Specific objectives of the study were, To examine the nature of nutrition interventions in care and treatment of HIV and AIDS among PLWHAs, To analyze the effect of socio-cultural factors affecting nutrition intervention in treatment and care of HIV and AIDS patients, To examine perception of the community regarding the use of nutrition in care and treatment of HIV and AIDS, and To evaluate effectiveness of the existing strategy in the utilization of food and nutrition in care and treatment of HIV and AIDS, in Nandi County, Kenya. The study used cross sectional survey design of the problems related to socio-cultural aspect of HIV in different communities in Nandi County. Study participants included households in the community and people infected and affected by HIV and AIDS in Nandi central Sub county, Nandi County and the health workers, social worker and nutritionist. The study participants were randomly sampled from the area from the community and those infected were selected randomly from the Comprehensive care Clinics in Kapsabet County Hospital and Mosoriot Sub county Hospital. The data was collected using Questionnaires, Key Informant Interview and Focus group Discussion. The collected data was coded and analyzed using SPSS statistical package and triangulated. Consent was sought from the study participants before administering the Questionnaire and FGD. The study participants were 400 both infected and affected with HIV. Most of the respondents 97% reported that good nutrition intervention is important in the treatment of HIV, while 3% do not believe that good nutrition can help in the treatment. 87% of the respondents further said that culture plays a big role in nutrition intervention. They had different perception about nutrition intervention, 72% perceived that good nutrition will improve adherence to ARVs, While 28% perceived that nutrition intervention can improve the body of those infected. The study showed that there was a general awareness of the importance of nutrition among those infected and affected with HIV. Cultural factors affecting the use of nutrition, that come out from the study is stigma, those infected experience social and perceived stigma from the community. This was reinforced by the fact that those living with HIV were not taking the food supplements recommended to them by the nutritionist. Social and cultural challenges have been a major setback in Kenya in terms food and nutrition, most people do not believe that good nutrition can help in maintaining good health of people infected with HIV and AIDS. There need to harmonize HIV/AIDS research findings especially those that touch on nutrition interventions to generate a body of local and community specific ideas and knowledge instrumental to positive and pragmatic intervention against HIV/AIDS. Proper sensitization should be done to improve the overall nutrition of those living with HIV/AIDS. It is not enough to give information proper nutrition, follow up should be done in order to ensure nutrition intervention is followed to improve the overall health of those Infected. There is still very little information on the impact of nutrition intervention among people living with HIV in Kenya. More studies should be conducted to help get the general view and challenges of nutrition intervention.

Keywords: Socio-Cultural; Nutrition Intervention; Care; Treatment; HIV/AIDS

Background

Nutrition is an essential part of the HIV care package. Improved nutrition is not enough in itself to keep people permanently healthy. Nevertheless, good nutrition may help prolong the period of time between HIV infection and the onset of opportunistic infections. In some communities affordable food supplementation may be feasible and it can have a positive impact on body composition and weight. Nutrition plays an important role in regard to the provision of antiretroviral treatment [1].

Over the past decade, much knowledge has accumulated about the relationships among HIV, nutritional status, treatment, and food and nutritional support. PLHIV are more vulnerable to malnutrition than the general population. As HIV disease progresses, a progressive deterioration of nutritional status is often observed [2]. Like other infections, HIV also appears to impair micronutrient status. "Micronutrient status" refers to the amount of vitamins and minerals available to the body. Needed only in small amounts,

these substances help the body systems function normally. An insufficient intake of micronutrients may accelerate HIV disease progression [3].

The role of HIV infection on nutrition was identified early in the epidemic. Wasting is one of the visible signs of malnutrition as patients' progress from HIV and AIDs. HIV was found to affect nutritional status by increasing energy requirements, reducing food intake, and adversely affecting nutrient absorption and metabolism [4]. HIV impairs nutritional status by undermining the immune system, as well as nutrient intake, absorption and use. Malnutrition can exacerbate the effects of HIV and hasten AIDS-related illnesses in people living with HIV. Adults living with HIV have 10–30% higher energy requirements than a healthy adult without HIV, and children living with HIV 50–100% higher than normal requirements. Food availability and good nutrition are thus essential for keeping people living with HIV healthy for longer. A stronger, healthier body can better resist the opportunistic infections that affect people living with HIV, especially in resource-poor settings where preventive health care is not often available [5].

In a study a study by Piwoz [6], she argues that, when Nutritional needs are not met, recovery from an illness will take longer. Good nutrition can help to extend the period when the person with HIV and AIDS is well and working. Healthy and balanced nutrition should be one of the goals of counseling and care for people at all stages of HIV infection. Eating well means eating a variety of foods. Malnutrition in Sub-Saharan Africa is an endemic problem and is complicated further by the devastating impact of HIV and AIDS. Research suggests that malnutrition increases the risk of HIV transmission from mothers to babies and the progression of HIV infection. Several Vitamins and minerals are critical for fighting HIV.

Good nutrition is also vital to help maintain the health and quality of life of the person suffering from AIDS. Good nutritional status is very important from the time a person is infected with HIV. Nutrition education at this early stage gives the person a chance to build up healthy eating habits and to take action to improve food security in the home. These infections can lower food intake because they both reduce appetite and interfere with body's ability to absorb food [7]. Good nutrition helps in: Maintaining the desirable body weight for adequate energy level, increased productivity and a sense of well being, Minimizing the health problems arising due to HIV i.e. diarrhea, muscle wasting, wt loss and fever, Building strong immune system through provision of different vitamin and minerals in the diet and Supporting the effective action of drug treatment of opportunistic infections and ART. Nutrition must be brought into the essential care package for HIV. "Care and treatment" for HIV should not be narrowed to just providing anti-retroviral. Nutrition should be included as a core part of essential care package.

At the individual level, the immune system is weakened by both HIV and malnutrition, which combine to increase susceptibility to co-infections and accelerate progression of HIV-related diseases. Poor nutritional status may also increase the risk of HIV transmission from mother to child. Lack of food security constrains people's choices about work and education, and child feeding and rearing, and can lead to increased mobility for work. Mobility and limited options for earning an income in turn can lead to high-risk behaviours such as engaging in sex for food or money. Most studies have shown that adherence to antiretroviral drugs together with proper nutrition can help people living with HIV to improve their overall health [5].

Food has long been regarded as an important part of any comprehensive treatment plan but there has definitely been a critical shift in thinking recently a shift that puts greater emphasis on the need for nutrition to be integrated into all HIV treatment programmes. In the past, food was viewed primarily as a means of helping patients to adhere to treatment by helping them to cope with the side-effects of the anti-retroviral drugs. But gradually it has become clear that in the developing world, better nutrition plays a far more important role by increasing the effectiveness of the treatment. In the developing world, there is a higher mortality rate for people on ART (anti-retroviral therapy) than in the richer world largely because people in developing countries first seek treatment when they are already malnourished and wasted. In these cases, complementary food assistance increases the chances that the treatment will work and that the patient will survive. And that is why nutrition is now viewed as a critical complementary component of any effective treatment plan and why it has been written into protocols for the treatment of HIV for the very first time – because it helps people living with HIV to survive [8].

The Government of Kenya with support from other partners has, for the last two and a half decades, invested in the AIDS response. It is estimated that Kenya has lost close to 1.7 million people over the years as a result of AIDS related complications; underpinning the importance of HIV in public health, sustainable development and economic growth dialogues. It is estimated that 1.6 million Kenyans are living with HIV and over 650,000 of them are currently accessing antiretroviral treatment. This situation is, however, compounded by the fact that close to 101,560 new HIV infections occur annually. HIV continues to be a major challenge across all the 47 Counties in Kenya. It is, however, noted that some Counties have a considerably higher HIV burden than others. The Counties of Nairobi, Homabay, Siaya, Kisumu, Migori, Kisii, Nakuru, Kakamega, Mombasa and Kiambu are collectively home to over 800,000 citizens living with HIV. In addition, 65 percent of all new HIV infections occur in nine Counties. Nandi county has been categorized as medium prevalence region in Kenya [9].

The Kenyan HIV epidemic displays variable epidemiological dynamics with respect to modes of transmission, age and sex differentials. Girls, women and key populations such as sex workers, men who have sex with men, People Who Inject Drugs and people in prison are disproportionately affected by HIV. Kenya has made significant progress in HIV prevention especially among children. However the reduction of new HIV infections among adults has been relatively slow. This HIV Prevention Road Map therefore draws from lessons learned on strategies, interventions and scientific development in HIV prevention globally. It provides guidance on how the country can accelerate and achieve a drastic reduction in new HIV infections in a manner which is evidence-informed, rights-based and gender sensitive.

In 1999, Kenyan government declared AIDS a national disaster. In 2002, the Total War against AIDS (TOWA) was launched. Government bodies and policies followed to monitor and coordinate actions in the country. While many Kenyan families are struggling with challenges of poverty, food and nutrition insecurity, families affected by HIV/AIDS are more prone and vulnerable. They are faced with extra responsibility of taking care and feeding infected person(s) who also require even more nutritional attention. Malnutrition and HIV/AIDS are synergetic and together create vicious cycle that additively weakens the immune system [10].

Methods and Instruments

The study used cross sectional survey design of the problems related to socio-cultural aspect of HIV and nutrition intervention in Nandi County, Kenya. More specifically the attitudes and beliefs about the effect of socio-cultural factors on nutrition intervention among PLWHAs. The views regarding nutrition intervention and socio-cultural factors from different households was also collected. The study design was used to help the researcher to establish whether there was significant association among the variables exist.

The study was conducted in Nandi County which is one of the 47 counties in Kenya. According to the 2009 Population and Housing Census, the county has a population of 752,965 comprising of 376,477 males and 376,488 females. The county's inter-censal growth rate stands at 2.8 percent while the national growth rate of 3.0 percent. Nandi County has a population of 920,445, comprising of 459,879 males (50%) and 460,566 females (50%). Children below 15 years constitute 43% of the population, while youth aged 15-24 years constitute 21% of the population (2015 KNBS Population Projections). HIV prevalence in Nandi is lower than the national prevalence at 4.3% (Kenya HIV Estimates 2015). The HIV prevalence among women in the county is higher (5.2%) than that of men (3.1%), indicating that women are more vulnerable to HIV infection than men in the County.

The study area was chosen due the HIV prevalence rate. Nandi County is among the counties with medium burden HIV infection in Kenya. The HIV prevalence in the county stands at 4.3 percent

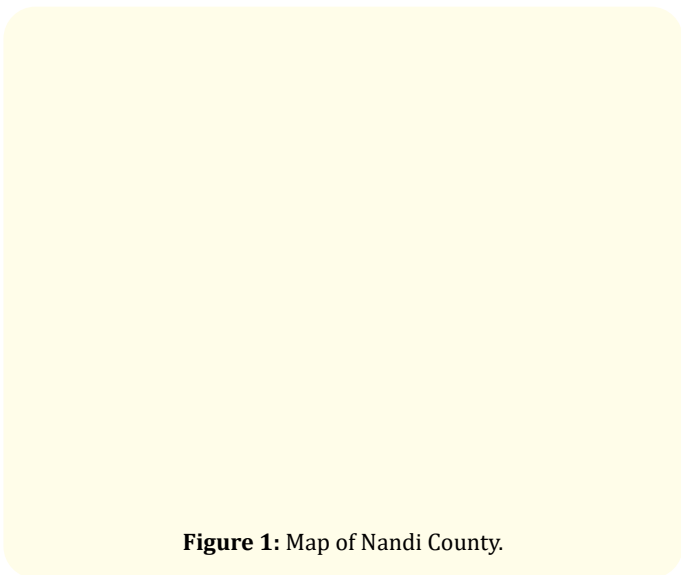


Figure 1: Map of Nandi County.

[11]. Nandi Central district which is now divided into Emgwen and Chesumei Sub Counties. Emgwen has both rural and urban settlement making it possible to get the perception of nutrition intervention for those infected with HIV from both the rural and urban perspective. Due to tea plantations in Emgwen it has lead to high number of immigrant workers. This has been attributed to high number of HIV infections. Although as county we have made significant progress in the fight against HIV/AIDS, Challenges still exist when it comes to containing the epidemic, which requires a lot more to be done. HIV prevalence and new annual HIV infections are still unacceptably high. More efforts in HIV prevention in the County and the various sub-counties need to be addressed.

The study comprised of households in the community and PLWHA's in the district and the health workers at the Comprehensive Care Clinics/centre's in Kapsabet Referral Hospital and Mosoriot Sub-County Hospital. Both the women and men were involved in the study so as to understand the socio-cultural factors affecting nutrition intervention in the treatment and care of PLWA. In Nandi county there are about 23,800 PLWHAs, among the PLWHAs there are about 20,800 adults living with HIV and the rest are children. For this study only the adults were included. Most of the people living with HIV who visited the Comprehensive care Centres came from all over the County. The selection of people living with HIV and AIDS was based on the number of those registered at the Comprehensive Care Centres in the two hospitals. The study was done in Emgwen and Chesumei sub counties (Nandi Central District) and the study participants from the household in the community was drawn from these two sub counties.

The sample size for the study will be 398 people. To have a whole number the researcher approximated the sample size to 400 from 398 participants. The study divided the sample into two; 150 participants were selected from the people living with HIV (PLWHs) which was arrived at by dividing the number of those infected 20,800 from the overall population of the sub county and the remaining 250 were selected from the households in the community.

The study selected 10 key informants from the two health centers, that is, Mosoriot Sub county Hospital and Kapsabet Referral Hospital, 5 from each health center.

The study also selected 16 participants for the Focus Group Discussion. The participants were drawn from people living with HIV. Two sessions were done comprising men and women, with 8 participants in each session.

The study population was selected using Multi-Stage cluster sampling. The three divisions were used as clusters then the sample was further sampled from the locations/wards in the bigger cluster, and simple random sampling was finally used to get the required sample from the two Sub counties. The division was used as clusters and then simple random sampling to select the required sample that was representative of the population. Simple random sampling was used by the researcher because it guarantees that the characteristics in the populations are accurately reproduced in a sample (Mugenda, 2008). For people living with HIV purposive sampling was used to select the participants from the Comprehensive Care Clinics (CCC). When choosing the key informants for the interview purposive sampling was used to select the participants. For people living with HIV Purposive sampling was employed.

- **Key Informants:** were sampled purposively. Purposive sampling was involved in identifying the respondents who are strategically placed to provide information on issues of interest to the study. The key informants included social workers at the Comprehensive Care Centers (CCC), nurses and nutritionists.
- **Structured interview respondents:** Were sampled purposively for people living with HIV and simple random sampling were used for the community. Purposive sampling was used to get people living with HIV, based on the availability of people living with HIV. Purposive sampling was used to enable the researcher to get to the participants. The community members were sampled using simple random sampling to get their views on nutrition intervention.
- **Focus Group Discussion:** For focus group discussion the respondents were sampled purposively. The FGDs were done on people living with HIV to get their views on the strategies that are in place on nutrition intervention and to find out if more need to be done to improve the existing strategies. Table Indicates the sample distribution for Nandi Central Sub-county.

The information sought in the study about the nature of nutrition intervention in care and treatment of HIV and AIDS, such as, nutrition care, counseling care and nutrition sensitive programmes and enforcement mechanisms. The study further sought to address Socio-cultural factors affecting nutrition intervention in care and Treatment of HIV and AIDS among people living with HIV and the community/Households. The study looked at the beliefs on food and nutrition among members of the community and PLWHAs. Also sought their demographic profile and their motivation in using nutrition intervention.

Data collected about the perception on use of nutrition intervention in the treatment of HIV and AIDS was on the views of the community and PLWHAs on the types of food that are recommended for those living with HIV. Further the study sought to evaluate the existing strategies in nutrition intervention and their effectiveness in providing PLWHAs with appropriate advice for their nutrition well being. The key informant views sought to reinforce the perception of nutrition intervention among PLWHAs who come to the CCC clinics in the county.

Reliability and validity of research instruments

Reliability and validity of research instruments was done to improve the tools and to standardize administration of the instrument to the participants. The study took duration of two months; it was conducted between the months of July to August 2016.

Data analysis and management

The study yielded a variety of data containing quantitative and qualitative data. Quantitative came from the questionnaires that were administered to the community and PLWAs, which were coded and analyzed using Statistical Package for Social scientists (SPSS) version 18. The qualitative data was used to reinforce quantitative data collected from study. These have subjectively captured in the comments on the subject by the researcher.

Descriptive and inferential statistical analysis methods were used to analyze the data. The collected data was coded and analyzed using statistical package for social scientist (SPSS). Descriptive statistics that were used are frequency distribution and cross tabulation, while inferential statistics was Chi-square. Inferential statistics was carried out to try to infer from the sample data what the population thinks of nutrition intervention. Chi-square was used to judge the significance of nutrition intervention among the people living with HIV and the community. The decision criterion was base on significance level which was set at p-value to 0.05. Summary of the research design, variables and data analyses.

Results

The nature of nutrition interventions in care and treatment of HIV and AIDS among people living with HIV

There has been a lot of public awareness programmes on the importance of nutrition intervention for people living with HIV. Among the respondents who were enrolled in the study, majority of them said that, they had been told by the nutritionist that good nutrition can help in the treatment of HIV and AIDS 93% while a small percentage of the respondents said they have never been told about nutrition 7% as shown in the figure 2. The respondents said that the nutritionist at the clinic had informed them about the importance of nutrition. This results show that most of the respondents have the knowledge about the importance of nutrition in relation to the treatment of HIV and AIDS. In a similar study done by Suttajit [12] he states that the optimization of nutritional status, intervention with foods and supplements, including nutrients and other bio-active food components, are needed to maintain the immune system.

Various food components may be recommended to reduce the incidence and severity of infectious illnesses by forms of bio-protection which include reduced oxidative stress due to reactive oxygen species which stimulate HIV replication and AIDS progression. Probiotics or lactic acid bacteria and prebiotics are sometimes given on the presumed basis that they help maintain integrity of mucosal surfaces, improve antibody responses and increase white blood cell production. People with HIV+/AIDS can be informed about the basic concepts of optimal nutrition by identifying key foods and nutrients, along with lifestyle changes, that contribute to a strengthened immune system. Moreover, nutritional management, counseling and education should be beneficial to the quality and extension of life in AIDS [12].

antiretroviral therapy nutritional support is needed to maintain optimum nutrition during the symptomatic period, to prevent further deterioration of nutritional status during acute episodes of infections and to improve nutritional status during the stable symptom free period.

One of the most important observations about the interaction between antiretroviral therapy and nutritional status is that initiating ART often leads to a reversal of symptoms caused by HIV, such as malnutrition and loss of body mass (including muscle mass). Increased appetite, improved food intake, and reduced viral load improve nutritional status. This improvement is associated with reduced morbidity and mortality from HIV/AIDS-related causes [14]. PLHIV who are on ART or taking other OI medications need to be careful about what foods they eat.

The results shows that, majority of the respondents believe that good nutrition help improve the status of the people with HIV 96% while 4% of the respondents do not believe that good nutrition is important. The respondents believe that with good nutrition it can improve drug adherence among people living with HIV and help build their bodies. According to USAID, 2015, Nutrition plays a key role in health and wellness for all individuals. Optimal nutrition – eating the right type and amount of food in the right combinations – is a critical component of comprehensive prevention, care and treatment for individuals with HIV and AIDS. Nutrition and HIV and AIDS are cyclically related. When the body’s immune system breaks down as a result of HIV or AIDS, this can contribute to malnutrition and susceptibility to infection. These infections can result in diarrhea, malabsorption, poor appetite and weight loss. Therefore, malnutrition can contribute to and be a result of HIV disease progression. Conversely, a person who is well-nourished is more likely to maintain a stronger immune system for coping with HIV and fighting infection. Optimal nutrition is also an important component of the response to chronic diseases that are becoming increasingly prevalent among individuals with HIV and AIDS [15].

Most of the respondent reported that with good nutrition intervention it can help improve treatment tolerance for people living with HIV and AIDs 97%, while a small number of the respondent did not believe that nutrition intervention can help 3%. For those who believe that nutrition intervention is important they gave different reasons, others said that with proper nutrition intervention it can help increase energy in the body 63%, while others said that it helps build the body 34% as shown in the Table 1. This corresponds to other studies done by Colecraft [16] which states that HIV and AIDS is associated with biological and social factors that affect the individual's ability to consume and utilize food and to acquire food. These biological and social factors lead to poor nutritional status and weight loss, which are an important cause of morbidity in individuals infected with HIV, resulting in a poor quality of life; weight loss is an important predictor of death from AIDS. The links between nutrition and HIV/AIDS amplify the negative effects of HIV infection on human development at individual, household, community and national levels.

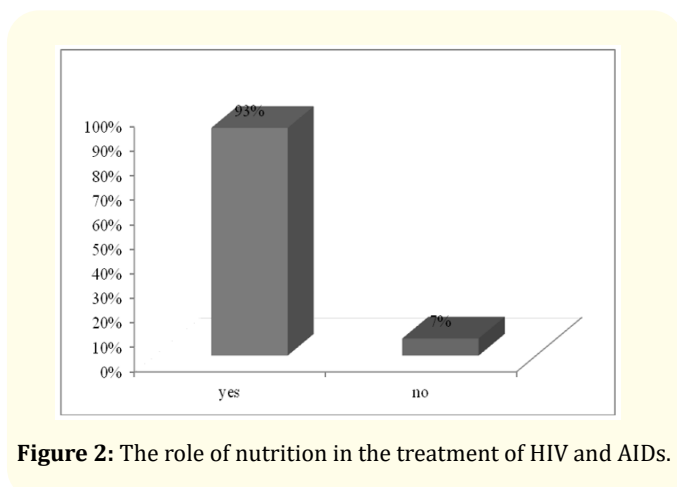


Figure 2: The role of nutrition in the treatment of HIV and AIDs.

In a study done by Sherlekar and Udipi (2002) in India they were in agreement that patients with HIV infection and AIDS, in addition to the antiretroviral therapy nutritional support is needed to maintain optimum nutrition during the symptomatic period, to prevent further deterioration of nutritional status during acute episodes of infections and to improve nutritional status during the stable symptom free period. According to Sherlekar and Udipi (2002), this can be achieved by (a) nutritional assessment, (b) nutritional screening, (c) nutritional intervention and by providing (d) psychosocial support for nutrition.

Importance of proper diet for persons with HIV and AIDS

Nutrition plays an essential role in supporting the health and quality of life of people living with HIV. The negative effects of malnutrition are often preventable and are usually not easily reversed. Nutrition-related alterations can occur early in HIV infection; thus, nutrition intervention should begin soon after diagnosis [13].

In the study the participants were asked if they believe that proper diet is good for a person suffering from HIV and AIDs, most of the respondents 99% said that proper diet is important for a person who is suffering HIV. They gave different reason for their believe, some said that proper diet helps build the body 66% while the rest said it improves drug adherence 34% for those who are suffering from HIV. This concurs with Sherleker and Udipi (2002) says that, in patients with HIV infection/AIDS, in addition to the

Reason	Frequency	Percentage (%)
Increases energy in the body	252	63
It builds the body	137	34
Do not believe that nutrition intervention can help	11	3
Total	400	100

Table 1: Reasons on how nutrition intervention improves drug tolerance for PLWAs.

Source: Research Data

According to the study most of the respondents believe that with proper nutrition intervention can help people living with HIV to maintain and improve the quality of their lives. Some respondents said that with good nutrition one can be able to take medicine without any problem 66%, while other respondents said that with good nutrition a person living with HIV can have a strong body to fight diseases 34%. This is in agreement with, Brevet, 2009, who said that nutrition and HIV and AIDS is not only about the impoverishment of the affected families resulting in the decline in food security. Food and nutrition interventions are critical components of a comprehensive response to the HIV pandemic. HIV compromises the nutritional status of infected individuals, and malnutrition in turn can worsen the effects of the disease. Nutrition interventions can help break the cycle by helping people living with HIV manage symptoms, reduce susceptibility to opportunistic infections, improve nutritional status, promote response to medical treatment, and improve overall quality of life [10].

A person with HIV infection is more at risk for malnutrition for reasons such as reduced food intake, poor absorption, changes in metabolism, chronic infections and illness, and anemia. The management of these conditions and the provision of nutritional support are effective interventions that are fundamental to other HIV and AIDS care activities. Good nutrition may result in increased resistance to infection and disease, improved energy and a person who is stronger and more productive [17].

This also concurs to other studies by Ivers., *et al.* [18] which state a lack of access to appropriate foods and the direct effect of HIV on impaired metabolic functions in absorption, storage and utilization of nutrients, can translate into compromised immunity, nutrient deficiencies and increased vulnerability to infectious diseases. Lack of sufficient food intake will further exacerbate the catabolic nature of HIV infection. In other studies by Thapa.,*et al.* [4] he states that nutritional support should be fundamental to a comprehensive response to HIV and AIDS. Poor nutritional status in PLHIV is associated with disease progression, increased morbidity, and reduced survival, even when ART is available. Micro-nutrient supplements significantly increased CD4 count among PLHIV, and studies among HIV-infected adults in Haiti, Kenya, Malawi and Zambia have demonstrated significant positive effects of macronutrient supplementation on adherence to antiretroviral medication, weight gain and CD4 counts. Similarly, in food-inse-

cure settings, food support programs (increasing total calories) are often required in addition to nutrition support (increasing specific micronutrients) to optimize health outcomes in PLHIV.

Majority of the respondents believe that medical nutrition therapy can be beneficial for people living with HIV and AIDs. They gave different ways in which they think nutrition therapy can help; some said it builds their immune system 25%, others said that nutrition therapy adds strength to the body 38%, while there are those who said that nutrition therapy makes a person active 23% and finally some said that nutrition therapy can improve drug adherence among the people living with HIV and AIDs 14%, as shown by the figure 3. In a study done by Martinez., *et al.* [19], he states that adherence to ART is higher among patients who received food baskets, received nutritional advice and encouraging them to eat their habitual among of food plus the provided food baskets, as compared to those with little or no nutritional advice.

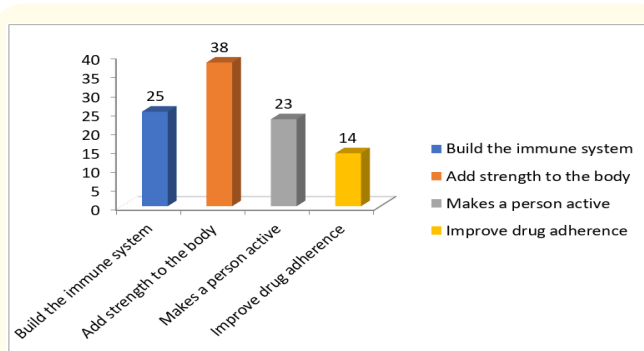


Figure 3: Ways in which medical Nutrition therapy can be beneficial for PLWAs.

Nutritional needs for people living with AIDS

When the respondents were asked about what nutritional needs should be considered when developing food basket for people living with HIV they had varied views, some said that the food basket should have High energy diet 42%, while there are those that said the food basket should contain high protein diet 15%, and there are some who said that when developing the food basket it should contain all nutrients in the diet 43%. The table below shows the responses from the respondent on what should be considered when developing the food basket for people living with HIV and AIDs. Researchers have shown that eating a diet high in vegetables, fruits, whole grains and legumes will help those who are infected with HIV. It should also be recommended to those who are infected to include proteins, carbohydrates and a little goo fat in all meals and snacks.

This concurs with Brevet, 2009, who said that the impact of diet on medication is complex. Food can enhance or inhibit the absorption, metabolism, distribution and excretion of medications. Sometimes it is a matter of when the food is eaten, other times it is the content of the food itself. The type of food can also influence the effectiveness of a drug. Some foods will decrease the absorption of a

Diet	Frequency	Percentage (%)
High energy diet	170	42
High protein diet	58	15
High Micronutrient diet	0	0
Other (All nutrients)	172	43
Total	400	100

Table 2: Nutritional needs of people living with HIV/AIDs.

Source: Research Data

given drug; others will increase it. The same is true for dietary supplements, including herbal remedies and traditional medicines. In a similar study done in Uganda, the participants indicated a belief that highly nutritious foods, such as fruits and vegetables, ought to be consumed by people with HIV infection [20]. Good nutritional status has been shown to be associated with higher health status in persons with HIV infection.

In the study, most of the respondents when asked what amounts of foods are recommended for people living with HIV and AIDs said that food with all the nutrients (protein, carbohydrates, vitamins and minerals) should be given in adequate amounts 87%, while there are those who believe that food high in all nutrient should be recommended for persons with HIV 13%. This shows that though the respondents have been informed about the importance of nutrition most of them still do not clear knowledge about nutrition requirements. In a study done by Bukusuba, Kikafunda and whitehead [21], states that poor nutrition knowledge, attitudes, and dietary practices, play a key role in rapid progression of HIV. Since access to and availability of food are affected by the impact of HIV, any strategy to improve nutrition of those affected must prioritize enhancing appropriate nutritional knowledge, attitude and use of the little available foods.

The results of the study concurs with other studies by Garcia-Prat [22] states that foods high in protein help maintain muscle mass. Sources of protein include, meat and legumes. Vegetables and fruits are important sources of essential vitamins and minerals, especially vitamins A and C, and need to be eaten daily. Fats and oils are also an important part of the diet, providing calories and essential vitamins and fatty acids. Patients with HIV/AIDS often lack vitamins and minerals because of inadequate dietary intake, infection, and malabsorption. Because vitamins and minerals play such an important role in the body, a daily multivitamin/mineral supplement can benefit both asymptomatic and symptomatic HIV-positive patients.

All the respondents were in agreement that there are no particular foods that are recommended for people living with HIV and AIDs. They should eat the same as other people. In similar studies by WFP and WHO, 2008, they state that, a balanced intake of carbohydrates, protein, fat, and micronutrients is necessary for all people to maintain their health. Carbohydrates should provide about 70 percent of energy requirements, proteins 10–13 percent, and fat 16–18 percent of the daily energy body intake. PLHIV

have increased nutritional requirements for total energy and for number of micronutrients. Supplementation is one strategy used to address these additional nutritional needs. It may take the form of macronutrient or micronutrient supplements, or a combination of the two. Although the quantity of each nutrient increases in the diet of PLHIV, the proportion of the ration’s macronutrients should remain the same.

Conclusion

Generally, results from the participants from the Sub-County revealed that PLWHA had been informed about the importance of good nutrition when undertaking antiretroviral drugs, still there are those who believe that the information given to them was not sufficient to help in selecting the foods that are appropriate.

Over the past decade, much knowledge has accumulated about the relationships among HIV, nutritional status, treatment, and food and nutritional support. There was a general consensus from the majority of the respondents that nutrition is important for people living with HIV and AIDs. More so when taking food those infected need to be careful to ensure that they have proper diet that is balanced, containing all the required nutrients.

Limitations of the Study

The research had a few limitations: the study was done in Nandi Central Sub-county which is cosmopolitan, which is both rural and urban, most of the PLWAs who came to Comprehensive Care Clinic or Centers came from other communities but not the indigenous community which is the Kalenjin. The ones who were willing to take home supplementary food were mostly from the other communities living in the Sub County. There were challenges in accessing those living with HIV outside the health center, therefore the participants living with HIV were recruited from the Comprehensive care clinics. At the village it was hard to know who was HIV positive and they were critical in giving information regarding nutrition intervention. Those involved in the study from the community were willing to give the information with the assurance of confidentiality about their status from other members of the community.

Delimitation of the Study

Due the in accessibility of people living with HIV from the community, the researcher chose to involve People living with HIV who were already registered at the Comprehensive Care Clinic/centers. The researcher interviewed the participant not in the presence of the health workers because they did not feel comfortable around them.

Ethical Consideration

The research permit was sought from The National Commission on Science, Technology and Innovation (NACOSTI), and there after sought study permit from the Nandi County. Consent was sought from the study participants. Confidentiality was assured and that privacy was at all times protected for the information given by the participant. The participation in the study was voluntary and that if the participant refuses to comply it will not result in any penalties.

The participant was informed that even after consenting to participate and cooperate they were at will to withdraw from the study if she or he wishes. The consent form complied with Institutional Research and Ethics Board of Masinde Muliro University of Science and Technology.

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