

# Good Nutrition for Quality of Life of PLWHA (People Living with HIV/AIDS)

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### ABSTRACT

*HIV/AIDS have infected more than 40 million people around the world, since the first case was reported in 1981. In Indonesia, estimated 169 thousand till 216 thousand people have contagious of the virus. Considering the spread of HIV/AIDS which progressively extend and can be groggy of nation life, especially young generation, we need the effort of HIV/AIDS preventing and overcoming effectively. Besides that, improving quality of life of PLWHA (people living with HIV/AIDS) is essential to maintain health and prolong lives of them. Good nutrition can contribute to the wellness and sense of wellbeing of the PLWHA at all stages of the disease and may even prolong life. Good nutrition means eating foods that supply the body with all the nutrients that are needed daily. We get all the nutrients from starchy foods, fats and oils, proteins, vitamins, minerals and water. The right balance of these nutrients promotes health. Good nutrition help to maintain ideal body weight of PLWHA. This will give stronger immunity and resistance to infection. The next, good nutrition will reduce the sickness and make slower HIV/AIDS disease progression. If PLWHA get a wellness condition, they will eat well and have a good appetite. So, PLWHA can reach a better life and get a good quality of life. Thereby, Nutrition can assist in mitigating the impacts of HIV/AIDS at the individual, household and community. A good nutrition is one of the simplest way of helping people live with HIV/AIDS to improve the life quality and life expectancy.*

**Key words:** HIV/AIDS, good nutrition, quality of life

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### INTRODUCTION

AIDS has emerged as one of the most serious diseases facing the developing world. Since the first case was reported in 1981, HIV/AIDS have infected more than 40 million people around the world. In Indonesia, the recent situation indicated HIV/AIDS cases mount sharply and quickly since finding of in 1987. Data from Depkes RI (till December 2006) showed, there were 8194 AIDS cumulatif cases and killed 1871 people. The data did not explain the number truthfully as that happened at iceberg phenomenon. Estimated, 169 thousand till 216 thousand people in Indonesia have contagious of the virus. Boulton (2004) said, although the big attention focused on overcoming AIDS problem in Africa and western country nowadays, but some expert warned about the danger of AIDS in the three big country in Asia. Those are China, India and Indonesia.

Considering the spread of HIV/AIDS which progressively extend and can be groggy of nation life, especially young generation, we need the effort of HIV/AIDS preventing and overcoming effectively. Besides that, improving quality of life of PLWHA (people living with HIV/AIDS) is essential to maintain health and prolong lives of them.

Nutritionally adequate food in both quantity and quality are required because it will improve the life quality and life expectancy of PLWHA. Almost of them live in developing countries where healthcare, resources and drugs are scarce. So a balanced diet is a positive way of responding to the illness.

Providing nutritional care and support for people living with HIV/AIDS is an important part of caring at all stages of the disease. Optimal nutrition can help boost immune function, maximize the effectiveness of antiretroviral therapy, reduce the risk of chronic illnesses such as diabetes and cardiovascular disease, and contribute to a better overall quality of life (Highleyman, 2006).

This matter being interesting for discussed. How HIV/AIDS substantially affects one's quality of life. What the relationship between nutrition and HIV/AIDS, and how nutrition can contribute to a better quality of life of PLWHA.

### HIV/AIDS AND THE IMPACT ON QUALITY OF LIFE

HIV/AIDS substantially affects one's quality of life in many ways such as physical, social, psychological, and sexual condition. The most prevalent constrain often faced were in the psycho-social domain, including financial problems, worry about disease progression, worry about the family and distress about losing others from HIV.

AIDS kills the most productive and reproductively active members of society, thus increasing the number of dependent household members, reducing household productivity and caring capacity, and interrupting the transfer of local knowledge and skills from one generation to the next (Piot, 2002). This condition has influenced significantly to the PLWHA's quality of life.

Quality of life is a multi-dimensional concept whose definition and assessment remains controversial. Quality

of life is conceptualized in terms of “an absence of pain or an ability to function in day to day life” (Susan *et al.*, 1999). Several researchers described Quality of life as a “fighting spirit” associated with longer survival time for individuals (Friedland *et al.*, 1996). “Quality of life relates both to adequacy of material circumstances and to personal feelings about these circumstances. It includes “overall subjective feelings of well being that are closely related to morale, happiness and satisfaction (Lesserman *et al.*, 1992)

The research conducted by Testa and Lenderking (1999), showed the impact of AIDS-associated wasting on quality of life, base on aspects of functioning (physical, psychological, social and sexual). *On physical functioning*, nearly all participants reported functional limitations, some quite severe, due to lack of energy or muscle weakness. *On psychological functioning*, participants reported that wasting evoked feelings of hopelessness, loss of power, grief, depression, preoccupation with morbid thoughts, anxiety, fear, panic and even anger. *On Social Functioning*, the primary areas reported were loss of social interaction, fear of rejection, being forced to hide the condition from friends, inability to form new relationships, social isolation because of fear of rejection and an inability to deal with the empathy expressed by friends and relatives. Participants also reported a reduced capacity to enjoy social interactions such as playing with grandchildren and dating. The last - *on sexual functioning*- most participants expressed an overall loss of libido, feelings of shame and guilt, reduction in sexual drive, embarrassment concerning appearance to the point of severe inhibition and a general decrease or complete elimination of sexual energy.

## HIV/AIDS AND NUTRITION

### Nutritional Problem on PLWHA

As mentioned above, people living with HIV/AIDS face many problems due to HIV infection. One of them is about nutritional problem. Malnutrition is a major and early problem in HIV infection. Several factors can contribute to nutritional problems in people with HIV/AIDS, that are;

*Malabsorption:* HIV or associated infections can damage the lining of the gastrointestinal tract, which can interfere with absorption of nutrients. Some HIV positive people experience specific problems, such as fat malabsorption, which can impair absorption of fat-soluble vitamins (Highleyman, 2005).

*Opportunistic infections (OI):* Community-based research studies in the USA revealed that moderate weight loss (< 5%) and severe weight loss (5–10%) over a four-month period were associated with a subsequent increased risk of opportunistic infections, including *Pneumocystis jirovecii* (formerly *P. carinii*) pneumonia, cytomegalovirus, and the *Mycobacterium avium* complex, and with mortality (Wheeler, 1998).

*Medications:* Antiretrovirals (ARVs), and other medications can contribute to nutrient deficiencies and imbalances, either due to direct drug-nutrient interactions or drug side effects. Antibiotics may interfere with nutrition by killing off beneficial bacteria in the gut (Highleyman, 2005). Although costly medications have extended longevity, frequent drug side effects not only affect nutrient intake but can cause troublesome metabolic abnormalities as well. Following effective nutritional care guidelines helps the symptomatic person living with HIV to improve their response to medications and to deal with metabolic changes. So, proactive nutrition intervention can result in fewer complications, leading to a reduced cost of care and increased quality of life (Meyer, 2000).

*Inadequate intake:* There are several reasons for a person to reduce their intake in food. The person may be suffering from an infection, such as mouth sores or fever. Side effects from medications used to treat an illness may cause a reduction in appetite. Depression from dealing with a fatal disease and possible social stigma can also cause people to lose their appetite and reduce their food intake (Fanta, 2001).

*Altered nutritional requirements:* By altering metabolism, people with HIV/AIDS may require more calories, macronutrients, and specific vitamins and minerals. Chronic illness may also alter hormone and cytokine levels, which may have nutritional implications (Highleyman, 2005). Because of these effects, an HIV-infected person has additional nutrient requirements: 10–15 percent additional energy intake and 50 to 100 percent increase in protein intake as compared to a non HIV-infected person (Fanta, 2001). Conversely, nutritional deficiencies can impair immune function, potentially worsening HIV disease progression. Research has shown that depletion of vitamins A, C, and E, the B-complex vitamins, and the minerals selenium and zinc can interfere with cell-mediated immunity (CD4 cell, natural killer cell, and neutrophil proliferation and activation), antibody production, and normal cytokine signaling (Highleyman, 2005).

Nutrition means different things at the various stages of HIV infection. The following is about nutritional needs and problems according to the development of the disease.

### Stage 1: HIV infected and still healthy

San Francisco AIDS Foundation (2006) stated that up to 70% of people newly infected with HIV will experience some “flu-like” symptoms during this stage. These symptoms, which usually last no more than several days, might include fevers, chills, night sweats, and rashes. Afterward, the infected person returns to feeling and looking completely well. The remaining percentage of people either do not experience symptoms of acute infection or have symptoms so mild that they may not notice them.

Kennedy (2001) said, the goal during this stage is to keep the body weight stable in order to strengthen the

body's ability to fight infections with the immune system and to prevent progression of the HIV illness. During the early stage of the infection the emphasis is on a normal and healthy balanced eating pattern. Remember that no single food contains all the nutrients and goodness that the body needs. By concentrating on eating a wide variety of healthy foods, health can be maintained during this early stage. Many people with the virus can live for 10 years or more if they maintain good nutrition. Meyer (2000) said, to allow maximum benefit and cost-effectiveness, nutritional intervention and education should start at the time of initial HIV-positive diagnosis and continue throughout the disease process.

### ***Stage 2: some problems but generally well***

It may take years for HIV symptoms to develop. However, even though no symptoms are present, the virus is multiplying (or making copies of itself) in the body during this time (anonymous, 2006). The health problems may include mononucleosis-like syndromes, unexplained lymphadenopathy, fever of unknown origin, chronic fatigue, unexplained weight loss, chronic diarrhoea and unexplained dementia (Frame, 2003).

Many health problem like loss of appetite, mouth sores and pain when swallowing will cause low food intake and contribute to weight loss. Fanta (2001) said, well-chosen dietary practices can help manage illnesses associated with HIV/AIDS. An HIV-infected person needs to consume foods that meet energy, protein and micronutrient requirements. These foods should also help to increase appetite, be easily digestible and promote and maintain weight gain.

### ***Stage 3: more serious problems***

At this stage, more serious health problems will emerge. This matter because the immune system starts to weaken. Certain infections or illnesses will develop, such as severe diarrhea, severe weight loss, severe pneumonia, brain infections and the others, that are more common when someone has a weakened immune system.

Besides that, people with HIV will also experience of significant decrements in the quality of life compared to previous stage. The research conducted by Lubeck and Fries (2004) on 440 HIV-infected persons in San Francisco showed, the individuals who progressed to AIDS had significant decrements in HRQoL (health-related quality of life) compared with symptomatic and asymptomatic patients. The assessment covered the aspects of disability, energy, general health, pain, mental health, social functioning, health distress and symptoms.

Kennedy (2001) said, with good nutrition the development of this stage is slower and the person can survive for longer. If a person with HIV/AIDS has a good appetite and is eating well, but is still feeling ill and losing weight rapidly during this stage, it might be a sign that there is another infection, such as tuberculosis. Advice should be sought from health workers if this is the case.

## **The Relationship Between HIV/AIDS and Nutrition**

Nutrition is an important health issue for everyone, but particularly for people living with HIV/AIDS. WHO (2005) stated that adequate nutrition cannot cure HIV infection but is essential to maintain a person's immune system, to sustain healthy levels of physical activity, and for optimal quality of life. Adequate nutrition is also necessary to ensure optimal benefits from the use of antiretroviral treatment, which is essential to prolong the lives of HIV-infected people and prevent transmission of HIV from mother to child.

The relationship between HIV/AIDS and poor nutrition is cyclical. Kennedy (2001) said, the immune system resists infections and disease by fighting off germs, bacteria, viruses and parasites that people are exposed to daily. With HIV infection the immune system is weakened or deficient. This protective system of the body is made up of certain proteins, called antibodies, and cells that attack invading germs. The T-cells and B-cells (or lymphocytes) help to fight infection. These lymphocytes are found in the blood stream. The T-cells are an important defence against germs and the B-cells make antibodies that assist in the fight against infection. A high T-cell count indicates a healthy immune system. If the T-cell count remains high, it contributes to a healthier and longer life. The lining of the gut also contains cells of the immune system. Poor nutrition can affect the lining of the gut negatively. This means that germs and parasites can enter the body through the gut.

Vitamin A and vitamin C help to keep the lining of the gut and lungs healthy and strong to prevent germs from entering the body. Because people living with HIV/AIDS have a weakened immune system, they often suffer from infections that take advantage of this situation. These infections are called opportunistic infections. Even minor infections, which a healthy immune system could easily overcome, can be severe or fatal in someone with HIV/AIDS. Every infection places extra demands on the immune system. Infections lead to loss of appetite, eating problems and also diarrhoea. Repeated infections lead to poor nutrition, which further disables the immune system. Poor nutrition undermines the immune system of all people, whether they are HIV positive or not. Poor nutrition leads to lower T-cell counts.

Research shows that the chance of infection with the HIV virus might be reduced in individuals who have good nutritional status, with micronutrients and, especially, vitamin A playing significant roles (ACC/SCN, 1998a). At the same time, the onset of the disease and even death might be delayed in well-nourished HIV-positive individuals (ACC/SCN, 1998a).

Thereby, nutrition and HIV are strongly related to each other. Fanta (2001) explained that relation. Any immune impairment as a result of HIV/AIDS leads to malnutrition, and malnutrition leads to immune impairment, worsens the effect of HIV and contributes to more rapid progression to AIDS. Thus malnutrition can both contribute to and



result from the progression of HIV. A person who is malnourished and then acquires HIV is more likely to progress faster to AIDS, because his/her body is HIV already weak and cannot fight infection. A well-nourished person has a stronger body for coping with HIV and fighting illness. The similar opinion submitted on the scheme below by Piwoz and Prebel (2000).

Relationship between good nutrition and HIV/AIDS



Source: Adapted from Piwoz and Prebel, 2000.

Good nutrition help to maintain ideal body weight of PLWHA. This will give stronger immunity and resistance to infection. The next, good nutrition will reduce the sickness and make slower HIV/AIDS disease progression. If PLWHA get a wellness condition, they will eat well and have a good appetite. So, PLWHA can reach a better life and get a good quality of life.

### The Importants of Nutrition for People Living with HIV/AIDS

Good nutrition can contribute to the wellness and sense of wellbeing of the PLWHA at all stages of the disease and may even prolong life. Good nutrition means eating foods that supply the body with all the nutrients that are needed daily. We can find all the nutrients from starchy foods, fats and oils, proteins, vitamins, minerals and water. The right balance of these nutrients promotes health and well-being.

An effective programme of nutritional care and support will improve the quality of life of people living with HIV/AIDS (Fenton and Meyer, 1998; Fanta, 2001; FAO, 2002), by: maintaining body weight and strength; prevents malnutrition and wasting; replacing lost vitamins and minerals; improving the function of the immune system and the body's ability to fight infection; extending the period from infection to the development of the AIDS disease; improving response to treatment; reducing time and money spent on health care; keeping HIV-infected people active, allowing them to take care of themselves, their family and children; and keeping HIV-infected people productive, able to work, grow food and contribute to the income of their families.

Here is point plan to good nutrition:

*Step 1:* Pay attention on diet as soon as possible and discuss the diet and related problems with a doctor or nutritionist (Anonymous, 2007).

*Step 2:* Eat a varied diet, which includes the following food types: starchy foods; fruits and vegetables; dried beans, peas, soya, lentils and peanuts; meat and milk products; sugars, fats and oils.

Starchy foods such as bread, rice, potatoes, sweet potatoes, cereals, corn, sorghum and so on. These high-energy foods help keep body weight stable and should form the basis of meals. Woods (1999); James and Shofield (1990); said, an active non HIV-infected adult requires approximately 2070 kcal/day. An HIV-infected adult requires 10 to 15 percent more energy per day (or approximately 400 additional kcal for men and 300 kcal for women). A non HIV-infected man requires about 57grams/day of protein and a woman requires 48 grams/day. An HIV-infected adult needs approximately 50 to 100 percent more protein for a total of 85 grams/day for men and 72 grams/day for women.

Fruits and vegetables contain vitamins and other substances vital to health. Vitamins strengthen the immune system and keep the linings of the lungs and the gut intact, which reduces the risk of infectious organisms entering the body. Eat at least some of fruits and vegetables fresh every day; overcooking and soaking fruit and vegetables for long periods can destroy their vitamin content.

Meat and milk products supply muscle-building proteins and strengthen the immune system. Good protein sources: meat, poultry, fish, eggs, dairy products (milk, milk powder, yoghurt, buttermilk, cheese). Edible insects like Mopani worms are also high in protein. Dried beans, peas, lentils, peanuts, soya are good sources of protein too, and are especially important for vegetarians.

Sugars, fats and oils provide energy, and should be eaten in larger amounts after infections or periods of weight loss. Apart from adding sugar to food, it can be obtained from foods made with sugar (cakes, pastries, biscuits and desserts). Fats and oils include butter, margarine, lard, cooking oil, cream, mayonnaise and salad dressings (Anonymous, 2007).

*Step 3: Exercise to build muscle.*

Regular exercise makes people with HIV/AIDS feel better. Its help to relieve stress and stimulates the appetite. Simple activities, such as taking regular walks, help keep muscles strong. The body uses muscles to store energy and protein that the immune system can draw upon when required.

*Step 4: Drink at least eight cups of fluid (water and other beverages) a day.*

This is particularly important if you've had diarrhoea, vomiting or night sweats, which cause water loss (anonymous, 2007).

*Step 5: Avoid alcohol* (wine, beer, cider, alcoholic coolers, whiskey, rum, gin, vodka, cane). It can cause depression, interfere with medications and lead to reduced food intake and hence weight loss (Fanta, 2001).

*Step 6: Get the essential vitamins and minerals.*

In a 1993 publication, from Tufts university, a general recommendation was made, "supplements of vitamins

and minerals, especially vitamins A (as -carotene), E, C, riboflavin, B6, and B12, and the minerals zinc and selenium, should be part of any oral regimen” (Gorbach *et al.*, 1993).

Vitamin A helps keep the linings of the skin, lungs and gut healthy. Infections increase loss of vitamin A from the body. Good sources: dark green, yellow, orange and red fruits and vegetables, such as spinach, broccoli, pumpkin leaves, green peppers, sweet potato, squash, pumpkin, carrots, yellow peaches, apricots, paw-paws, mangoes. Animal sources include: liver, butter, cheese, eggs (Anonymous, 2007). In Blantyre, Malawi, daily supplementation with vitamin A (10 000 IU), beginning at 18–28 weeks of gestation of women with HIV, was associated with increased birth weight, increased weight and length at six weeks, and reduced rates of infant anemia at six weeks (Kumwenda, 2002).

Vitamin B-group is necessary to keep the immune and nervous system healthy. Good sources: white beans, potatoes, meat, fish, chicken, watermelon, maize, grain, nuts, avocado, broccoli, green leafy vegetables. Vitamin C helps with recovery from infections. Good sources include: citrus fruits (oranges, grape fruit, lemons), guavas, mangoes, tomatoes, potatoes. While Vitamin E protects cells and aids resistance to infection. Foods containing vitamin E are green leafy vegetables, vegetable oils, peanuts and egg yolks (Anonymous, 2007). The second six year study was from Johns Hopkins University, the initial analysis found that “the highest levels of intake (from food and supplements) of vitamins C and B1 and niacin were associated with a significantly decreased progression rate to AIDS”, and “the progression rate to AIDS was also decreased in subjects in the highest quartile of intake for vitamins B1, B2, B6, and C” (Tang *et al.*, 1993).

Selenium, iron and zinc are important mineral because it helps to activate the immune system. Good sources of selenium include whole grains such as wholemeal bread, maize and millet and dairy products such as milk, yoghurt and cheese. Meat, fish, poultry, eggs and other protein-rich foods are also good sources, as are peanut butter, dried beans and nuts. Good iron sources are green leafy vegetables, seeds, whole-grain products, dried fruit, sorghum, millet, beans, alfalfa, red meat, chicken, liver, fish, seafood and eggs. While good zinc sources include meat, fish, poultry, shellfish, whole-grain cereals, maize, beans, peanuts and milk and dairy products (Anonymous, 2007).

## CONCLUSIONS

HIV/AIDS epidemic have affected human health and threatened national, social and economic progress. Therefore, the effort of preventing and overcoming of HIV/AIDS should be done effectively, totally and continual. Besides that, improving quality of life of PLWHA (people living with HIV/AIDS) is essential to maintain health and prolong lives of them.

Malnutrition is a major and early problem in HIV infection. People living with HIV/AIDS must establish and keep adequate nourishment in the earliest stage of HIV infection as possible. Because, HIV attacks the immune system and the early stages of infection a person shows no visible signs of illness. But, many signs of AIDS will become apparent later, including weight loss, fever, diarrhoea and opportunistic infections. Weight loss or wasting becomes a serious problem and diarrhoea occurs more often and lasts longer. With good nutrition the development of this stage is slower and the person can survive for longer.

WHO (2005) stated that adequate nutrition cannot cure HIV infection but is essential to maintain a person’s immune system, to sustain healthy levels of physical activity, and for optimal quality of life. Adequate nutrition is also necessary to ensure optimal benefits from the use of antiretroviral treatment, which is essential to prolong the lives of HIV-infected people and prevent transmission of HIV from mother to child.

Thereby, Nutrition can assist in mitigating the impacts of HIV/AIDS at the individual, household and community. A good nutrition is one of the simplest way of helping people live with HIV/AIDS to improve the life quality and life expectancy.

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