Antiretroviral Knowledge, Adherence, Feeding Patterns, And Nutritional Status Among People Living With Hiv/AIDS (Plwha) In Kupang (Cross Sectional Study)

Maria Sambriong
Health Polytechnic of Kupang
Email: mariasambriong68@gmail.com

Abstract

Background: Acquired Immune Deficiency Syndrome (AIDS) is a disease caused by the Human Immunodeficiency Virus (HIV). This is infections cannot be cured but can be controlled by the antiretroviral treatment. Research shows that some patients with HIV/AIDS are experiencing undernutrition. That’s influenced by symptoms of the disease, difficulties dietary, and duration of antiretroviral treatment. Objectives: The aim of the study was to analyze a correlation of knowledge with nutritional status, adherence with nutritional status, knowledge with feeding patterns, and also analyze the correlation among knowledge, feeding patterns, and adherence with nutritional status. Methods: The study was an observational with the cross-sectional design carried out at the Seroja VCT Clinic of the central of Kupang. We have made to analysis univariate, bivariate with Chi-Square and multivariate using Logistic Regression. Result: The results showed that antiretroviral knowledge associated with nutritional status (p = 0.001). Adherence to nutritional status has a relationship (0.001). Antiretroviral knowledge with feeding patterns has a relationship (p-value = 0.001). Conclusion: In this study, two things related to nutritional status were knowledge and adherence to antiretroviral treatment. While the antiretroviral knowledge prediction model, feeding patterns, adherence to antiretroviral treatment with nutritional status shows that feeding patterns have the greatest influence with nutritional status among people living with HIV/AIDS. Suggestions: This study is useful for the managers of the Health Public to make an evaluation of the efforts to treatment to people with HIV/AIDS in the community.

Keywords: Antiretroviral, Adherence, Feeding patterns, Nutritional status

*Correspondence: mariasambriong68@gmail.com
Present Address: East Nusa Tenggara - Indonesia

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INTRODUCTION

AIDS (Acquired Immune Deficiency Syndrome) is a collection of symptoms of a disease caused by a virus called HIV (Human Immunodeficiency Virus) which is characterized by symptoms of the decreased immune system. Infection of the virus will affect nutritional status and immune status because it specifically affects nutritional status due to increased energy requirements, reducing food intake, and affecting nutrient absorption and metabolism. If the intake of nutrients is inadequate or does not meet their needs due to HIV infection, it will cause chronic nutritional deficiencies in patients (Divson, 2005).

A study by Fields-Gardner and Fergusson (2004), said that the use of certain antiretroviral drugs has side effects that can be exacerbated if the drug is consumed without food and poor nutrition can hamper the ability of the drug. Adherence to antiretroviral therapy (ART) is the key to the successful treatment of HIV infection because ongoing ART can suppress HIV until undetected, reduce the risk of drug resistance, improve quality and survival, improve overall health and reduce the risk of HIV transmission.

The proportion of patients with HIV, who have low levels of adherence is still significant and can cause very poor in public health problems (Bitew, at.all, 2014). A study in Northern Ethiopia showed a significant relationship between the incidence of malnutrition (BMI <18.5 kg / m2) with the patient not adherence to antiretroviral therapy. Several other studies have shown that people with HIV / AIDS who experience malnutrition (BMI <18.5) are those who are not adherence to antiretroviral therapy. The report by The Ministry of Health, 2016 was in the province of East Nusa Tenggara, there were 2,240 cases of HIV and 1,935 of AIDS cases. The Research Center of Atmajaya University explained that the prevalence of adherence antiretroviral treatment for developing countries including Indonesia is below 95%, which is around 45% - 70%.
METHOTS

This was an observational design, cross-sectional study carried out from October to November 2017. The populations are 884 people with HIV/AIDS living in the City of Kupang. The samples were taken by consecutive sampling at 2 areas there are the Seroja Voluntary Counseling and Testing Clinic and the Tanpa Batas Foundation. A total sample of at least 165 people aged 18 years and over and currently taking ARV for at least 2 months. The populations are 884 people with HIV/AIDS and living in the City of Kupang. The samples were taken by consecutive sampling at 2 areas there are the Seroja Voluntary Counseling and Testing Clinic and the Tanpa Batas Foundation. A total sample of at least 165 people aged 18 years and over and currently taking ARV for at least 2 months.

The data collection process was assisted by 3 enumerators consisting of; a manager of the Seroja VCT Clinic and two counselors from the Tanpa Batas Foundation. It was also assisted by a number of personnel from the Peer Support Groups. Interviews were conducted after the respondent agreed and signed informed consent. The respondent’s weight and height data were taken from the register book at the last visit to the clinic. Data analysis was carried out univariately, bivariate using the Chi-Square test, whereas multivariate with predictive models, the analysis used with multiple logistic regression.

RESULTS

Background Characteristics

The number of respondents who were successfully recorded and willing to be interviewed was 136 people consisting of various professions with the most number of men being 88 people (64.7%). Most of the status of being married or ever married as many as 80 people (58.8%). The type of work, most of the subjects are entrepreneurs and employees of 64 people (47.1%). The respondents who had antiretroviral therapy for less than 5 years totaled 65 people (47.8%). The CD4 count of the subjects at most with the less 350 cells / µL was 91 people (66.9%). Most of the subjects had suffered opportunistic
infections by 81 people (596%). The characteristics of the subject of knowledge of ARV therapy were good with a number of 119 people (87.5%). The dietary of subjects according to the nutritional adequacy rate at most had good categories of 105 people (77.2%). Majority of subjects are adherence to ARV treatment namely 135 people (99.3%). The highest nutritional status of the subjects were 109 people (80.1%) is good.

The amount of carbohydrate intake is the same where at a good level the number is 74 people (53%), and the poor level of carbohydrate consumption is 64 people (47%). The protein intake in this study was seen to be at the lowest level of 106 people (77.9%). The fat intake was also seen that all subjects were at the level of less that is 136 people (100.0%).

The Age of Subject
This Table 1 shows that the age average of the subjects was 33.37 years with a minimum value of 21 years and a maximum value of 54 years.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>136</td>
<td>21</td>
<td>54</td>
<td>33.37</td>
<td>7.084</td>
</tr>
</tbody>
</table>

Table 2 shows the knowledge of moderate level and malnutrition status is 9 people (3.4%), and moderate knowledge and good nutrition of 8 people (13.6%). Good knowledge and malnutrition were 18 people (23.6%). The good knowledge and good nutritional status were 101 people (95.4%). Analysis with Chi-square showed a significant correlation between knowledge and nutritional status (p = 0.001).
Table 2. Correlations between knowledge and nutritional status

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Nutritional Status</th>
<th>Total</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less</td>
<td>Good</td>
<td>n</td>
</tr>
<tr>
<td>Moderate</td>
<td>9</td>
<td>8</td>
<td>17</td>
</tr>
<tr>
<td>Good</td>
<td>18</td>
<td>101</td>
<td>119</td>
</tr>
<tr>
<td>Jumlah</td>
<td>27</td>
<td>109</td>
<td>136</td>
</tr>
</tbody>
</table>

Correlations adherence and nutritional status

The data in the Table 3 shows that subjects who were not adherence and malnutrition is one person (0.2%), and the subjects who did not adherence and good nutritional status were none (0.8%). The subjects who were adherence and malnutrition were 26 people (26.8%), while the subjects who were adherence and good nutrition status were 109 people (108.2%). The results of the chi-square analyze between antiretroviral adherence and nutritional status showed an association significant (0.001).

Correlations knowledge and dietary patterns

Table 4, it can be seen that there are 9 subjects who have moderate knowledge and poor dietary patterns are (52.9%). Moderate knowledge and good dietary patterns are 8 people (47%). Good knowledge and dietary patterns are 19 people (16.0%), and good knowledge and good dietary patterns totaling 100 people (84.0%). The Chi-square analyze results between knowledge and dietary patterns show there is a correlation (p-value = 0.001).

Table 4. Correlations between knowledge and dietary patterns

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Dietary Habit</th>
<th>Total</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less</td>
<td>Good</td>
<td>n</td>
</tr>
<tr>
<td>Moderate</td>
<td>9</td>
<td>8</td>
<td>17</td>
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<tr>
<td>Good</td>
<td>19</td>
<td>100</td>
<td>119</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>108</td>
<td>136</td>
</tr>
</tbody>
</table>
Correlations between knowledge, dietary patterns, adherence and nutritional status

In Table 5, it can be seen that the results of using multiple logistic regression with predictive models show that dietary patterns have the greatest effect on the nutritional status of PLWHA, evidenced by the value of exp. B (103,841). In this study, the results of multiple logistic regression with predictive models between knowledge of ARV therapy, dietary patterns, adherence to taking ARVs and nutritional status showed that dietary patterns had the greatest effect on the nutritional status of PLWHA as evidenced by the value of exp. B (103,841).

Table 5. Correlations between knowledge, dietary patterns, adherence and nutritional status

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficients</th>
<th>Exp. B</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>1,139</td>
<td>3.25</td>
<td>0.225</td>
</tr>
<tr>
<td>Dietary patterns</td>
<td>4,643</td>
<td>103,841</td>
<td>0.001</td>
</tr>
</tbody>
</table>

DISCUSSION

The general opinion states that moderate knowledge will motivate individuals to behave healthily. Without knowledge, a person has not basic for making decisions and determining action on the problem. That knowledge includes understanding about the antiretroviral therapy, adherence to therapy, side effects, and duration of treatment. With the high level of knowledge, it is expected that PLWHA will carry out ARV therapy according to the rules recommended by doctors (Nasronudin and Margarita, 2007).

In this study, the knowledge about antiretroviral therapy was obtained by PLWHA through counseling provided by doctors and nurse in VCT clinics so that most PLWHA have good knowledge. The results of the Chi-square analyses showed a significant correlation between knowledge of antiretroviral therapy and the nutritional status of PLWHA. This is supported by the proportion of respondents who have good knowledge
with good nutritional status. The number is greater than respondents with less or moderate knowledge and underweight status. A study by Matulessy (2007) that the patients should be given counseling of them first before they starting an ARV therapy. These counseling in the form of everything about antiretroviral therapy, food, and nutrition which needed. This counseling is very necessary for the patient because they are to find out interactions between antiretroviral and foods. Like that the effect of food on the medicinal efficacy, effect of the medicine on the utilization of nutrients, the side effect of medicine and food consumption. Also the side effects of medicine due to drugs and consumption of certain types of food. Some antiretroviral cause badly side effects when was combined with certain foods. For example, consuming alcoholic beverages with didanosine can cause pancreatitis which very dangerous and can cause death.

Nutritional counseling has an influence on increasing the knowledge, attitudes, and practices of PLWHA in choosing full energy and cheap. So that the PLWHA are able to anticipate symptoms of infection. All of them have to protect their self by consuming some foods that are appropriate for their need and illness. The selection of the quality of foods including macronutrient and micronutrient very important to help improve nutritional status in that the quality of life of the patients will be better (Almatsier, 2007). In this study, another possibility that caused the nutritional status of the subject is good because most of them have been undergoing therapy for more than one year. So that they have adapted to the side effects of antiretroviral. The patients are also given some supplements to increase their endurance, so PLWHA no longer suffer from a opportunistic infections that often attack the immune that caused in a weight loss of the patients.

Adherence is the most important factor in achieving virological success from antiretroviral treatment. To be able to suppress viral replication to the fullest, at least the patients must achieve 90% - 95% to adherence, which means 90% - 95% of all the doses must be taken
on time (Cambiano, 2010). Adherence is also supported by several factors including the role of the counselor, and the psychosocial factors which include social support by their family members and the knowledge about HIV and treatment. In addition to the role of a good counselor, PLWHA who are taking ARV treatment at the VCT clinic also get well support by families. Where the family will take the medication from the clinic when the patient unable to attend, also the family will control they’re taking medicine. Taylor (2006), says that family support is assistance can be given for the other families members in the form of the things, services, information, and advice, which makes the patients will feel loved, valued and the wellbeing. Family support is needed in determining adherence to treatment. If family support is given to patients with HIV / AIDS it will motivate these patients to be obedient in their treatment and take the medicine

The result analyzes Chi-square between antiretroviral adherence and nutritional status of PLWHA have a significant relationship. The study also showed that the number of respondents who adhered to taking antiretrovirals was higher than those who did not. Meanwhile, most of the respondents who comply, the nutritional status is good. The results of the study of Mariz and colleagues in 2011, was showed that respondents who malnutrition were those who had not taken antiretrovirals. This means that if the respondent is diligent to taking medicine and adherence to treatment, then their nutritional status will be good, as found in this study. Most of PLWHA has also been undergoing treatment for more than one year and they have a CD4 count of ≥ 350 cells / μL. So that it is already in a safe position rarely exposed to opportunistic infections that caused a weight loss. This study it was found that one subject did not take the medicine more than 3 times a month. It is not adherence but because as the medicine stock in the hospital that was depleted. It is expected that health workers always attention to the supply of antiretroviral both in clinics and in hospitals.

Fikawati and Syafiq (2007) says that food intake is influenced by two things, namely internal factors, and
external factors. Internal factors are the factors from within the humans, can be in the form of emotions or psychic habits. Meanwhile, external factors are the factors from outside humans, such as the availability of food in the environment and socioeconomic conditions that affect the level of purchasing of food. Food patterns are a description of the frequency, type and amount of food consumed daily by people and are characteristic of a particular group of people. Food consumption is a major factor in meeting one’s nutritional needs. Thus it is expected that diverse food consumption can improve the nutritional quality of one’s food (Fikawati and Syafiq, 2007).

Hartono (2006), says that in AIDS there will be an increase in the rate of metabolism due to fever, infection, cancer and/or reactions caused by the medicine. Impaired of the nutrient absorption will occur secondary to intestinal infections, a medicine used, low albumin levels, gastrointestinal cancer, and AIDS enteropathy. All this, if left untreated, will quickly become malnutrition, muscle thinning and decreased quality of life. The state of easy tired, sores in the mouth and throat, depression, anxiety, nausea, vomiting, swallowing disorders, taste sensation disorders and out of breath add to the poor nutrition intake. Inadequate nutrient intake, especially protein and calories, will reduce quickly the weight of patients. The results of the chi-square showed a correlation between knowledge and the diet of PLWHA. Adequate nutrition cannot treat an infection of HIV but can maintain and enhance the immune system to maintain a healthy level of physical activity and optimal quality of life. Knowledge about ARV treatment is obtained by patients through counseling by doctors and nurses in clinics or hospitals where he takes medicine. Educations or counseling in clinics and hospitals by doctors and nurses is a means to increase knowledge of PLHIV so that it must be carried out routinely.

Someone infected by HIV/AIDS needs a foods intake of a healthy and balanced diet. Diet for patients with HIV is good as an effort to maintain nutritional status also boost to the
immune system. The virus of HIV can weaken the immune system so that a patient needs lots of carbohydrates, proteins, fats, vitamins, and minerals to help a fight the disease. In addition, the diet for patients also intended to help cure the symptoms and complications of HIV. Usually, people with HIV/AIDS have weight problems that continue to decrease. The problems of infection, and also diarrhea. This is supported by the results of research that respondents with good dietary patterns showed good nutritional status as many as 144 people (86.6%).

A study shows that the nutritional status of people with HIV/AIDS can be influenced by biological factors, demographic factors, behavioral factors, and clinical factors. Biological factors include albumin levels, hemoglobin status, and T-CD4 counts. Demographic factors consist of the age, gender, race, steady partner, living in the city or village, literacy, education, employment, low income. Clinical factors include an antiretroviral treatment, duration of HIV (from being diagnosed), AIDS status, opportunistic disease (at least 3 months), lymphoma status, the status of diabetes, and cirrhosis status. Behavioral factors include smoking, sedentary lifestyle, alcohol consumption, and drug consumption (Mariz. Al al, 2011).

CONCLUSIONS
By the results of the research described earlier, conclusions can be drawn as knowledge shows a significant correlation with nutritional status, adherence to antiretroviral treatment has a significant correlation with nutritional status. Furthermore, diet does not have a significant correlation with antiretroviral adherence. Statistical test results using multiple logistic regression with predictive models between knowledge, dietary patterns, adherence to taking an antiretroviral with nutritional status shows that dietary patterns have the greatest effect on nutritional status. The health workers in the clinic still attention to changes in the nutritional status of people with HIV/AIDS both undernutrition and overweight, by continuing to motivate clients to manage their diet well. The next researcher to conduct research with
quantitative and qualitative methods so that more in-depth results are obtained and accurate.

REFERENCES


