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## Observation of Nutritional Status in Adolescents with HIV/AIDS

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### Abstract

Adolescents with HIV/AIDS (Human Immunodeficiency Virus - Acquired Immunodeficiency Syndrome) continue to increase every year in line with the increase in sex behavior outside of marriage. One of the problems in adolescents with HIV / AIDS is malnutrition status. The purpose of the study was to observe nutritional status in adolescents with HIV / AIDS. The subjects were all adolescents with HIV/AIDS at the Kompeda Surabaya Foundation. The research design in this study is a time series, measuring nutritional status variables at some time using weight parameters according to age. Data collection was carried out on February-April 2022. The measurements were conducted using a bathroom scale. The number of subjects was 150 people with incidental sampling techniques. Inclusion criteria: adolescents diagnosed with HIV/AIDS, living in shelters, allowed by caregivers, ages 12-21, not being hospitalized during the study. Exclusion criteria: died, did not follow complete weight monitoring. During the study none of the subjects resigned nor were excluded from the study. The results of the study found that 90 had normal nutritional status and 60 were abnormal. There is a statistically significant difference in nutritional status between the first and second measurements. Foundation managers need to make efforts by paying more attention to adolescent nutritional intake so that nutritional status can improve.

**Keywords:** Observation, Nutritional Status, Adolescents, HIV/AIDS

### INTRODUCTION

Since it first emerged in the world, one of the fatal illnesses that has spread globally is human immunodeficiency virus and acquired immunodeficiency syndrome (HIV/AIDS). (1-3) The nutritional status of adolescents is a problem in Indonesia that needs the attention of the government. (4) Nutritional status is a condition caused by a balance between the intake of nutrients from food and the required for nutrients needed for the body's metabolism. (5,6)

Indonesia currently has 3 provinces with the highest number of HIV cases, namely DKI Jakarta (60.501 cases), East Java (50,060 cases), West Java (35.529 cases). Data from the Indonesian Ministry of Health in 2018 shows that 8.7% of adolescents aged 13-15 years and 8.1% of adolescents aged 16-18 years are underweight or severely underweight. Meanwhile, the prevalence of overweight and obesity is 16.0% in adolescents aged 13-15 years and 13.5% in adolescents aged 16-18 years.(7)

Nutrition plays a vital role in ado-

lescents because it boosts the body's defenses against infections, provides energy for activities, and contributes to their overall strength and productivity. (8) Malnutrition is often associated with the mortality of many people with HIV/AIDS.(9)

The nutritional status of adolescents with HIV/AIDS is highly dependent on parents and caregivers. Many caregivers do not monitor the nutritional status of the adolescents they care for. (10,11)

This study aims to observe the nutritional status of adolescents with HIV/ AIDS at the Kompeda Foundation Surabaya. This research is useful so that the nutritional status of adolescents at the Kompeda Foundation Surabaya can be monitored and become a consideration for the evaluation of foundation caregivers.

### METHOD

The subjects were teenagers with HIV/AIDS at Yayasan Kompeda Surabaya. Researchers employed a time series research design to measure nutritional status

variables using age-adjusted weight parameters. Weight data collection was carried out in February to April 2022 at the beginning of each month. The instrument used in this study was a *bathroom scale*. The study involved 150 subjects selected through incidental sampling techniques. The inclusion criteria: adolescents with a diagnosis of HIV/AIDS, living at the Kompeda Foundation, allowed by caregivers, aged 12-21 years, not being treated in a hospital during the study. Exclusion criteria: included participants who had passed away or failed to complete the weight monitoring. During the study none of the subjects resigned nor were excluded from the study. Informed consent was obtained from participants before the commencement of the study activities.

Nutritional status data is processed with the z score formula with the following interpretation of the results: malnutrition: < - 3 SD, malnutrition: -3.0 SD to -2.0 SD, good nutrition: -2.0 SD to 2.0 SD, over nutrition: > 2.0 SD<sup>(7)</sup>. To facilitate foundation managers and facilitate monitoring activities, nutritional status is grouped into two categories, normal nutritional status (consisting of good nutrition and overnutrition) and abnormal nutritional status (including poor nutrition and malnutrition).

Nutritional status data were analyzed with chi square tests using the SPSS program. The Ethics Commission of Nahdlatul Ulama University Surabaya issued No. 178/EC/KEPK/UNUSA/2021.

## RESULT

**Table 1.** Characteristics of adolescents

No	Variable	f(%)
1.	Gender	
	Male	86 (57.3%)
	Female	64 (42.7%)
2.	Age (Years)	
	12-15	37 (24.7%)
	15-18	44 (29.3%)
	18-21	69 (46.0%)
3.	Level of education	
	Not educated	44 (29.3%)
	Elementary school	63 (42.0%)
	Primary high school	41 (42.7%)
	Academy	54 (36.0%)
4.	Time of illness (Years)	
	Less than 5	67 (44.7%)
	More than 5	83 (55.3%)

Table 1 reveals that the majority of women fall within the 18-21 age group, with an elementary school education, and a history of illness exceeding 5 years.

**Table 2.** Weight measurement results

Measurement average	Average
First	40,4 kg
Second	40,8 kg
Third	40,6 kg

Table 2 displays the average weight for each of the three measurements conducted.

**Table 3.** The results of the first of nutritional status measurement

Category	f
Normal	90
Abnormal	60
Total	150

**Table 4.** The results of the second of nutritional status measurement

Category	f
Normal	90
Abnormal	60
Total	150

Table 3. and table 4. indicate that the number of respondents in each category of nutritional status grouping are the same.

**Table 5.** Differences in nutritional status

Status gizi	max	min	mean±SD	P value
Normal	90	7.03	5.20	0.000
Abnormal	60	7.01	6.30	

Table 5 with result test difference in nutritional status between the first and second measurements with chi square test obtained p=0.000. This means that there is a difference between the nutritional status of the first and second measurements.

## DISCUSSION

HIV is a virus that attacks the immune system. Acquired Immune Deficiency Syndrome (AIDS) is a condition that a person infected with the HIV virus may experience over time<sup>(12,13)</sup>.

This virus is contagious and causes damage or decline in the immune system by involving CD4 cells<sup>(14,15)</sup>. Given the

high rate of transmission of this virus, it is important to provide anti-retroviral (ARV) treatment as early as possible regardless of CD 4 cell count or symptoms that appear in high-risk groups. (3,16)

Nutritional status is a state of the body resulting from a balance between nutrient intake and needs. The balance is reflected the growth variables, including weight, height/length, head circumference, upper arm circumference, and chest circumference.(7) Nutritional status is the state of the body which is the end result of the balance between nutrients that enter the body.(17)

Nutritional status is influenced by food consumption and the use of nutrients in the body. When the body acquires sufficient nutrients and use them efficiently, it can achieve optimal nutritional status, promoting physical growth, brain development, work ability and general health.(18)

The results showed that there was no difference in nutritional status in children in shelters between the first measurement in February 2022 and the second measurement in April 2022. Based on interviews with several foster children, data was obtained on whether there were children who lacked appetite, eating potluck. The child also looks thin.

According to the factors that affect the nutritional status of children, it is divided into two factors, namely: direct factors and indirect factors. Direct factors are food intake and infectious diseases, while indirect factors are availability and consumption patterns in the household, maternal and child care, health and environmental services, education level, nutritional knowledge and number of family members. Mothers play an important role in the nutritional status of children. The absence of mothers is the cause of low child nutrition. (19)

The intake of micronutrients such as zinc, vitamin A, in people with HIV/ AIDS can affect CD 4 levels.(20) During the study, nutrient intake was given according to the available food.

Nutritional status affects the availability of glucose as an energy source to pro-

duce T lymphocyte cells, resulting in a low number of CD 4 cells. Another impact is the low number of cytokines which results in a weak body defense system so that it is easily infected. (21-23)

The nutritional status of adolescents with HIV/AIDS is influenced not only by nutritional intake, but also by factors such as the body weight at birth, the presence of candidiasis infection, the clinical stage experienced, and how long the consumption of ARV.

## CONCLUSION

The nutritional status of adolescents in NGOs is predominantly in the malnutrition category. Foundation managers need to make efforts by paying more attention to adolescent nutritional intake so that nutritional status can improve.

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