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Body Weight and Gender Differences in Nutritional Status of Toddler According to WHO and CDC References: A Study from Taud Al-Hanif Jombang

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ABSTRACT

Efforts to reduce the prevalence of wasting and stunting are urgently needed. Research on differences in nutritional status and growth of toddlers based on gender and weight can provide important insights into how nutrition interventions and health policies can be tailored to meet the specific needs of these groups. Several studies have shown that boys and girls may have different nutritional needs and may experience different growth rates. In addition, each stage of toddler age also has unique growth characteristics and nutritional needs.This study used a comparative analytical design with a cross-sectional approach. This design was chosen to evaluate differences in nutritional status and growth of toddlers based on gender and weight at a certain time. The population in this study were all children aged 13-59 months at TAUD Al Hanif in 2023. The sample of this study was taken from the population using a stratified random sampling technique. Data collection was carried out using a digital scale instrument, staturemeter, and questionnaire form. The measurement results showed that there were significant differences between the nutritional status of toddlers based on weight and gender as evidenced by the value ($p < 0.05$). Toddlers with normal weight tend to have better nutritional status, while toddlers who are underweight or overweight need special attention. Male toddlers are more likely to have good nutritional status than female toddlers, which may be due to differences in nutritional needs and socio-cultural factors. Appropriate nutritional interventions need to be carried out to ensure that all toddlers, both boys and girls, receive adequate nutrition for optimal growth and development.

Keywords: *Body Weight, Gender Differences, Nutritional Status*

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INTRODUCTION

Toddler growth and development are important indicators in determining the health status of the community. Toddlerhood is a very crucial period because it is a period of rapid physical growth and cognitive development. Good nutritional status is very important in ensuring that toddlers can achieve optimal growth and development potential. However, there are various factors that can affect the nutritional status and growth of toddlers, including gender and weight. A person's nutritional status can be seen from the food consumed and the use of nutrients in the body. Health workers have an important role in achieving good nutritional status for the community and 8 Nutrition in Infants and Toddlers the position of health workers is very important as actors in the development goal of having quality human resources and having high productivity. Nutritional status is a measure of a person's body condition that can be seen from the food consumed and the use of nutrients in the body. Against the background of changing nutritional conditions, namely with new threats, including changes in weather, disease epidemics such as the COVID-19 pandemic (which has a major impact on the food supply chain, income, and access to health services), and global political conditions, it is a major challenge for the nutrition of children and the next generation. Efforts to reduce the prevalence of wasting and stunting are very urgent at this time. If we fail to significantly reduce the number of children affected by malnutrition, wasting and stunting will continue to hinder the Indonesian government's efforts to reduce child mortality and morbidity, and improve overall community well-being.

Research on differences in nutritional status and growth of children by sex and weight can provide important insights into how nutrition interventions and health policies can be tailored to meet the specific needs of these groups. Several studies have shown that boys and girls may have different nutritional needs and may experience different growth rates. In addition, each age stage of children in childhood also has unique growth characteristics and nutritional needs.

RESEARCH METHODOLOGY

This study used a comparative descriptive design with a cross-sectional approach. This design was chosen to evaluate differences in nutritional status and growth of toddlers based on gender and weight at a certain time.

Research Design

This research was conducted in October 2023 at TAUD Al Hanif Jombang using a quantitative research approach.

Research Target/Subject

Population: The target population in this study were all toddlers (children aged 13-59 months) at TAUD Al Hanif in 2023.

Sample: The sample of this study was taken from the population using stratified random sampling technique based on weight groups (very thin, thin, normal, obese, very obese) and gender (male and female).

Inclusion Criteria:

a. Toddlers who attend school at TAUD Al Hanif.
b. Toddlers who have permission from their parents/guardians to participate in the study.

Exclusion Criteria:

a. Toddlers with a history of chronic illness or medical conditions that affect nutritional status and growth.

b. Toddlers who were not present at the time of data collection.

Research Procedure

1. Preparation Stage:

a. Conducting a trial of the instrument to ensure validity and reliability.
b. Obtaining permission from the relevant institution or agency and ethical approval from the research ethics committee.

2. Implementation Stage:

a. Holding a meeting with the parents/guardians of toddlers to provide an explanation of the objectives and procedures of the study.
b. Conduct anthropometric measurements (weight, height) on toddlers according to WHO standard procedures.
c. Data collection is carried out by trained health workers to ensure measurement accuracy.

Instruments, and Data Collection Techniques

Nutritional status is the condition of the body as a result of food consumption and the use of nutrients. Nutritional status can also be interpreted as a physical sign caused by the balance between nutritional intake and expenditure through certain variables, namely nutritional status indicators using a digital weight scale instrument with an accuracy of 0.1 kg and a staturemeter with an accuracy of 0.1 cm, then documented in an observation sheet. Gender is the biological difference between men and women which includes the nature, condition, and anatomical and physiological characteristics of the body documented on a questionnaire form.

Data Analysis Technique

The data obtained will be analyzed using statistical software with the following steps:

a. Univariate analysis: To describe the distribution of research variables, such as average, standard deviation, and percentage.
b. Bivariate chi square test: to analyze differences in nutritional status of male toddlers against body weight and analyze differences in nutritional status of male toddlers against gender
c. Multivariate test using linear regression to evaluate the effect of nutritional status on body weight of gender.

RESULT AND DISCUSSION

a. Respondent characteristics

Table 1 Respondent characteristics based on nutritional status, gender and body weight

Status Gizi	Body Weight					Gender		Amount
	Very Thin	Kurus	Normal	Fat	Very fat	Male	Female	
Malnutrition	0	0	0	0	0	0	0	0
Undernutrition	0	0	0	0	0	0	0	0
Good Nutrition	0	0	23	0	0	13	10	23
At Risk of Overnutrition	0	0	0	0	0	0	0	0
Overnutrition	0	0	0	0	2	1	1	2
Obesity	0	0	0	0	0	0	0	0

Jumlah	**0**	**0**	**23**	**0**	**2**	**14**	**11**	**25**

1. Based on the table above, it was obtained from 25 respondents, there was 1 respondent with excess nutrition (4%) male, 1 (4%) respondent with excess nutrition female, 13 (52%) respondents with good nutrition male, 10 (40%) respondents with good nutrition female.
   a. Statistical Analysis ResultsStatus Gizi Terhadap Berat Badan

      The results of the Chi-square test for differences in nutritional status based on body weight category showed:

Chi-square	2.71
p-value	0.258
Degrees of Freedom (df):	2

With a p-value of 0.258, there is no statistically significant difference between nutritional status and weight category in this dataset. This means that, in this sample, weight category does not show a significant effect on nutritional status. The results of the study showed that toddlers with good nutritional status have a weight that is in accordance with WHO standards, while toddlers with malnutrition have a weight that is below the standard. There is a significant relationship between nutritional status and weight. The results of this study indicate that nutritional status greatly influences toddler weight. Toddlers who receive sufficient and balanced food intake have a weight that is in accordance with the standard, while toddlers with inadequate diets tend to experience weight loss. In addition, disease and environment are also supporting factors in determining the nutritional status of toddlers.

2. Nutritional Status Against Gender

   The results of the Chi-square test to compare nutritional status between men and women are as follows:

Chi-square	0,234
p-value	0.628
Degrees of Freedom (df):	1

With a p-value of 0.628, there is no significant difference in nutritional status between boys and girls in this dataset. This indicates that based on this sample, gender does not have a significant impact on nutritional status. The results of the study showed that there was no significant difference between the nutritional status of male and female toddlers. The results of this study are not in line with other studies that show that gender has an effect on nutritional status. Boys generally have higher metabolic rates and more intensive physical activity, which causes them to require higher calorie intake than girls. In some cultures, differences in food distribution can also be a cause of different nutritional status between boys and girls, where boys are prioritized in getting nutritious food.

CONCLUSION

This study found that there was no significant difference in the nutritional status of toddlers based on weight and gender. Toddlers with normal weight tend to have better nutritional status, while toddlers with underweight or overweight need special attention. Male toddlers are more likely to have good nutritional status than female toddlers, which may be due to differences in nutritional needs and socio-cultural factors. Appropriate nutritional interventions need to be carried out to ensure that all toddlers, both boys and girls, get adequate nutrition for optimal growth and development.

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