MINH
MALAHAYATI INTERNATIONAL JOURNAL OF NURSING AND HEALTH SCIENCE
ISSN 2620-9152 (Print)
ISSN 2621-4083 (Online)
DOI: 10.33024
Nomor: 79/E/KPT/2023

ARTICLE INFORMATION
Received: December, 11, 2023
Revised: February, 10, 2024
Available online: February, 14, 2024
at : http://ejurnalmalahayati.ac.id/index.php/nursing/index

Knowledge of stunting and balanced diet among nursing students

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Abstract

Background: Stunting is a chronic nutritional issue in children that remains a primary focus for the government to prevent and reduce its prevalence. Various efforts have been made in collaboration with various parties to improve the nutritional status of children aged 0-2 years, pregnant women, and before pregnancy (adolescent girls). The proper food composition for teenagers should adhere to the '*Fill my plate*' principle with a composition of 1/3 staple food, 1/3 vegetables, 1/6 fruit, and the remaining 1/6 containing animal and vegetable protein. Good knowledge about balanced nutrition consumption in adolescent girls is essential to support the prevention of stunting in children in the future.
Purpose: To identify the relationship between knowledge about stunting prevention and the consumption of balanced nutritious food in adolescent girls.
Method: This research is an observational analytical quantitative study with a cross-sectional approach. The population in this study consisted of 95 female first-semester students at the Faculty of Nursing, Muhammadiyah University, Jakarta. The sampling technique used was purposive sampling with criteria being young female respondents aged 16-20 without chronic illnesses. The number of samples was 86. Data analysis used the chi-square statistical test to determine the relationship between knowledge about stunting prevention and the consumption of balanced nutritious food in young women.
Results: The average age of respondents was 18 years, the average score for knowledge about stunting prevention was 26.6, the majority of teenagers had a very good knowledge category, with 65 people (75.5%), and the majority of teenagers consumed balanced nutrition, 48 people (55.8%). The results of the statistical test obtained a p-value of 0.26 (>0.05), which means there is no relationship between teenagers' knowledge about stunting and the consumption of balanced nutrition.
Conclusion: It is hoped that healthcare professionals, especially nurses, can be involved and provide education and other interventions in preventing stunting by supporting young women to consume balanced nutrition.

Keywords: Adolescent; Balanced Nutrition; Knowledge; Stunting Prevention.

INTRODUCTION

Stunting is a chronic health issue in Indonesian children that remains the responsibility of various parties. Stunting is a chronic malnutrition problem characterized by short stature, which generally makes the affected individuals vulnerable to diseases, below-average intelligence, and low productivity (Scheffler & Hermanussen, 2022). If this stunting problem persists, it can lead to economic losses for Indonesia (Susanti, 2022). According to the World Health Organization standards, a region is

DOI: https://doi.org/10.33024/minh.v6i8.13343

considered to have a chronic condition if the prevalence of stunting is still above 20% (Ministry of Health of the Republic of Indonesia, 2018). Based on the Indonesia Nutrition Status Survey conducted by the Ministry of Health, the prevalence of stunting in toddlers in Indonesia reached 21.6% in 2022, a decrease of 2.8 points from the previous year (Ministry of Health of the Republic of Indonesia, 2023). Although there has been a decrease, the figure is still above 20%, requiring ongoing efforts in Indonesia to reduce the prevalence of stunting. The highest prevalence of stunting in toddlers still occurs in East Nusa Tenggara (*NTT*) at 35.3%, followed by West Sulawesi at 35%, and West Papua at 34.6%, while Jakarta is at 14.8% (Annur, 2022). Many factors contribute to the occurrence of stunting in children, including low nutritional intake during the first 1,000 days of life, from conception to two years of age. Additionally, poor sanitation facilities, limited access to clean water, and lack of environmental cleanliness also contribute to stunting. Inadequate cleanliness conditions force the body to fight against sources of disease, hindering nutrient absorption (Ministry of Health of the Republic of Indonesia, 2018). Stunting can be prevented through meeting the nutritional needs of pregnant women, providing exclusive breastfeeding for six months, followed by complementary feeding. Nutritional fulfillment can be achieved through nutritional interventions in mothers before and during pregnancy, as well as interventions in children aged 6 months to 2 years (Ministry of Health of the Republic of Indonesia, 2022). Nutritional interventions in mothers before pregnancy can be initiated during adolescence as part of preconception preparation when adolescents later get married. Adolescents have a significant opportunity to break the cycle of stunting because they are future parents who will give birth to the next generation (Resmiati, 2022).

About 25.7% of adolescents aged 13-15 years and 26.9% of adolescents aged 16-18 years have poor and very poor nutritional status. Subsequently, the data indicates that 8.7% of adolescents aged 13-15 years and 8.1% of adolescents aged 16-18 years have thin and very thin conditions. If this issue persists into adulthood, there will be health problems for the fetus they carry, perpetuating the intergenerational cycle of nutritional problems (Ministry of Health of the Republic of Indonesia, 2018). Nutrition intervention activities for adolescents have begun by promoting Nutritional Action in Schools with three intervention packages: weekly iron supplementation for adolescent girls, physical activity, and consumption of balanced nutritious food (Ministry of Health of the Republic of Indonesia, 2022). Iron supplementation has been carried out based on a good understanding and attitude towards the importance of iron supplementation in preventing stunting (Rizkiana, 2022). To support interventions in adolescent girls, there is a need for understanding of stunting and the importance of consuming balanced food for adolescent girls. Although most adolescents have knowledge about stunting, they still lack understanding of its risk factors and consequences (Winarti & Hartati, 2022). The majority of adolescents have insufficient knowledge before receiving education about stunting (Warasaka, 2021; Riska, 2021). Given the importance of nutritional intake, gender and age can influence knowledge, attitudes, and eating behaviors. In Taiwan, adolescent girls tend to have better knowledge, attitudes, and eating behaviors than boys. Adolescents have better knowledge than adults, but adults generally exhibit better attitudes and eating behaviors than adolescents (Lin, Hang, Yang & Hung, 2011). Nutritional knowledge is a crucial factor influencing the nutritional behavior of individuals, families, and communities. Children do not naturally choose foods with high nutritional value; they need adequate information about balanced nutrition (Demirozu, Pehlivan & Camliguney, 2012).

RESEARCH METHOD

This research is a quantitative study. Data collection was conducted in October-November 2023. This study employs an observational analytic research design with a cross-sectional approach. In a cross-sectional design, the researcher analyzes the relationship between independent variables without applying any treatment or manipulation to the research subjects, and both variables are obtained simultaneously (Dharma, 2013).

This research aims to analyze the relationship between knowledge variables about stunting prevention and the consumption of balanced nutritious food in adolescent girls. The study was

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conducted on first-semester female students in the Faculty of Sports Sciences at UMJ. The sampling technique used in this research was purposive sampling. The criteria for respondents involved in this study were female students without chronic illnesses.

The data collection tool used will be a questionnaire created in Google Form (https://forms.gle/RPxKmVAG4YbZKUFNA) distributed through the WhatsApp social media platform. Data analysis began with univariate data presentation in the form of central tendencies for numeric data (age) and frequency distribution for categorical data (religion, knowledge, description of balanced nutritional consumption). Bivariate analysis employed the chi-square statistical test to determine the relationship between knowledge about stunting prevention and the consumption of balanced nutritious food in adolescent girls.

The questionnaire used to measure adolescents' knowledge about stunting was created by the research team. The knowledge questionnaire consists of 14 statements with true and false answers. For positive statements, a correct answer was scored 2, and an incorrect answer was scored 1. Conversely, for negative statements, a correct answer was scored 1, and an incorrect answer was scored 2. The "*Fill my plate*" questionnaire is created using a balanced nutrition image (Ministry of Health of the Republic of Indonesia, 2018). The knowledge questionnaire has undergone validity testing on 15 respondents with a Cronbach Alpha result of 0.990, exceeding the r-table value (0.514).

RESEARCH RESULT

Table 1. Characteristic of Respondents (N=86)

Variables	Results	95% CI
Age (Mean±SD)(Range)(Year)	(18.4±0.675)(17-21)	18.26-18.5
Knowledge (Mean±SD)(Range)	(26.6±2.021)(22-28)	26.39-26.82

Based on Table 1, the average age of the respondents is 18 years with a standard deviation of 0.67, and the minimum age is 17 years while the maximum age is 21 years. The age of 18 is the end of adolescence before entering early adulthood. The average knowledge score is 26.6, with a standard deviation of 2.021, a minimum score of 22, and a maximum score of 28. The normality test result also shows a skewness value of -2.193 (≤ 2), indicating that the knowledge scores are normally distributed. Therefore, knowledge categorization is based on the mean value. Knowledge is considered good if it is less than or equal to 26.6, and very good if it is equal to or greater than 26.6.

Table 2. The Relationship Between Knowledge Levels and Dietary Pattern

Variables	Dietary Pattern		OR (95%CI)	p-value
	Balanced (n=38)	Unbalanced (n=48)		
Knowledge Levels (n/%)				
Good	12/31.6	9/18.8	0.73-5.41	0.262
Excellent	26/68.4	39/81.2		

Table 2 shows that the majority of adolescents have excellent knowledge about stunting and consume balanced nutrition, totaling 39 individuals (81.2%). Table 2 also indicates that there are still adolescents with excellent knowledge about stunting but do not consume balanced nutrition, and the statistical test results show a p-value of 0.262, meaning there is no significant relationship between adolescents' knowledge about stunting and the consumption of balanced nutritious food.

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Table 3. Knowledge on Balanced Nutrition (N=86)

Consumption of Balanced Nutrition	n/%
Staple food, vegetables, protein dishes and fruits	49/56.9
Staple food, vegetables, and fruits	3/3.4
Staple food, protein dishes and fruits	29/33.7
Staple food and vegetables	2/2.3
Staple food and protein dishes	1/1.1
Protein dishes, vegetables, and fruits	1/1.1
Protein dishes and vegetables	1/1.1

Based on Table 3, the highest number of adolescents consuming balanced nutrition is 49 individuals or 56.9%, who consume staple foods, vegetables, protein dishes, and fruits. Meanwhile, the lowest numbers are 1 person each or 1.1% for adolescents consuming staple foods and protein dishes; protein dishes; vegetables and fruits; and protein dishes and vegetables.

DISCUSSION

According to the Minister of Health of the Republic of Indonesia Regulation Number 25 of 2014, adolescents are defined as individuals aged between 10 and 18 years. This age range is considered a crucial period for physical, cognitive, moral, and creative development in humans, warranting special attention as they enter adolescence. Adolescents are seen as a nation's asset, and it is essential for them to be in good health as they will contribute to the country's development. Early motivation should be provided to encourage them to maintain both physical and mental health. The physical and mental health of adolescents will later impact their readiness for pregnancy if they become pregnant. Adequate nutrition intake through balanced nutrition is necessary to support adolescent physical health (Yuningsih, 2023). Sufficient nutritional intake in adolescents can contribute to preventing stunting in their future children (Abbas, Kumar, Mahmood & Somrongthong, 2021). Well-nourished adolescents will grow into healthy adults, marry, and be ready for a healthy pregnancy (Saleh, 2022). Adequate nutrition for pregnant women helps prevent intrauterine growth retardation (IUGR) in fetuses. IUGR can lead to growth and developmental disorders, increasing the risk of stunting in the baby (Hendrastuti, 2016). There is a connection between the nutritional status of pregnant women and the occurrence of stunting (Warastuti, 2020).

The government is making efforts to reduce the incidence of stunting through various programs. It is hoped that the public will increasingly understand stunting as an issue that needs to be addressed. Many educational media accessible to the public focus on stunting and the consumption of balanced nutrition. The average knowledge score in Table 1 is 26.6, with a maximum score of 28, indicating that respondents have good knowledge about stunting. Knowledge is the result of "knowing" and occurs after individuals sense a specific object (Notoatmodjo, 2014). Sensing occurs through the human sensory organs: sight, smell, hearing, touch, and taste. Most knowledge is gained through sight and hearing. Knowledge is also acquired through education, personal experience, the experiences of others, media, and the surrounding environment. Knowledge is a crucial domain for shaping an individual's actions. Knowledge is needed to stimulate an individual's psyche in cultivating daily attitudes and behaviors and can be considered a stimulus for a person's actions. Adolescents' knowledge about stunting can be obtained from various media, both print and electronic. With advancing technology, it is expected that adolescent girls will have good knowledge about stunting, nutrition, and balanced nutrition consumption as efforts to prevent stunting in Indonesia. The appropriate food composition for adolescents should meet the '*Fill my plate*' principle, with a composition of 1/3 staple food, 1/3 vegetables, 1/6 fruits, and the remaining 1/6 containing animal and plant protein (Firdauzi, 2019).

Consuming balanced nutrition will have a positive impact on the nutritional status of adolescents. The

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nutritional status of adolescents is influenced, among other factors, by their eating habits. As many as 92.1% of adolescents consume insufficient fruits, and 77.1% consume insufficient vegetables (Bahria & Triyanti, 2010). The consumption of balanced nutrition by adolescents in vocational high schools in Kota Bekasi is 55% categorized as poor, with only 6% falling into the excellent category (Danty, Syah & Sari, 2019). In this study, the majority of adolescents consume balanced nutrition in every meal, with a composition of staple foods, vegetables, fruits, and protein dishes totaling 49 individuals (56.9%). This is followed by the consumption of meals with a composition of staple foods, protein dishes, and fruits by 29 individuals (33.7%), without consuming fruits. Some respondents do not consume protein dishes and fruits, and some do not even consume staple foods that are rich in carbohydrates. This imbalance in the consumption of nutritious foods can lead to health problems for adolescents. Nutritional issues in adolescents can negatively impact public health, such as a decrease in learning concentration, the risk of giving birth to low birth weight (LBW) babies, and a decrease in physical fitness (Permiasih, 2017). The birth of LBW babies is closely related to the occurrence of stunting later in life (Sholihah, 2023).

CONCLUSION

The respondents involved in this study have an average age of 18 years. The average knowledge score about adolescent stunting is 26.6, and the majority of adolescents have an excellent knowledge category, totaling 65 individuals (75.5%). Most adolescents consume balanced nutrition, with 48 individuals (55.8%). There is no relationship between adolescents' knowledge about stunting and the consumption of balanced nutrition, with a p-value of 0.26.

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