RELATIONSHIP BALANCED NUTRITION KNOWLEDGE AND PHYSICAL ACTIVITY WITH NUTRITIONAL STATUS THROUGH BODY MASS INDEX (BMI) METHOD IN ADOLESCENTS AT MTSN 1 TRENGGALEK

Nabila Permatasari Widodo[1], Atik Sri Wulandari[2*], Harsono Wiradinata[3]
[1,2,3]Medical Faculty of Wijaya Kusuma University, Surabaya
Jalan Dukuh Kupang XXV/54 Surabaya

*Email: atik.wulandari31@gmail.com

Abstract

Nutrition is a contribution to the health and development of a person. Good nutrition can build a strong immune system, prevent disease and improve health. However, there are still quite a lot of nutritional problems in Indonesia, especially among adolescents in Indonesia. UNICEF data for 2021 states that around a quarter of adolescents aged 13-18 years in Indonesia are stunted, 9% of adolescents are thin or have a low body mass index, while another 16% of adolescents are overweight and obese. This problem of nutrition can be solved one way by knowing what factors can affect a person's nutritional status. The purpose of this study was to analyze the relationship between knowledge about balanced nutrition and physical activity with nutritional status through the body mass index method. The research is observational with a cross sectional research design. The research population consisted of 200 students at MTsN 1 Trenggalek, Trenggalek Regency, with a sample of 117 respondents, which was determined using a systematic random sampling method. The variables consist of the level of knowledge of balanced nutrition and physical activity as independent variables while the dependent variable is nutritional status with the body mass index as the measurement medium. The results showed that there was a relationship between knowledge of balanced nutrition and nutritional status through the body mass index method (p=0.009), and there was a relationship between physical activity and nutritional status through the body mass index method (p=0.021). From the results of data analysis it can be concluded that knowledge of balanced nutrition and physical activity has an effect on nutritional status through the method of measuring Body Mass Index (BMI) in teenage students at MTsN 1 Trenggalek

Keywords: *knowledge of balanced nutrition, physical activity, body mass index (BMI)*

INTRODUCTION

Nutrition is one of the factors that can determine the quality of human resources. The food consumed daily must contain nutrients as needed, to support optimal growth and be able to prevent various types of diseases, prevent poisoning, and can accelerate the healing process of diseases to help human survival. (UNICEF, 2021).

Adolescents in Indonesia are currently facing three nutritional burdens including undernutrition, overnutrition and micronutrient deficiencies (UNICEF, 2021). UNICEF data for 2021 states that around a quarter of adolescents aged 13-18 years in Indonesia are stunted, 9% of adolescents are thin or have a low body mass index, while another 16% of adolescents are overweight and obese. In addition, about a quarter of young women experience *anemia*. Nutritional problems in adolescents are influenced by several factors, some of which are due to changes in diet.

One of the causes of changes in eating patterns in adolescents is a lack of nutritional knowledge. If adolescents' nutritional knowledge is in the poor category, adolescents' efforts in

choosing nutritious foods will also decrease (Suyasmi et al., 2018). This is supported by Florence's research. (2017) that there is a strong relationship between nutritional knowledge and nutritional status. In addition to dietary factors and nutritional knowledge, physical activity factors can also affect body mass index (BMI) in adolescents. Teenagers with a high-energy diet and physical activity lead to a lifestyle that tends to sit or stay in one place, such as watching TV and playing online games, especially now that they have entered the era of globalization where many things can be done via a smartphone while sitting. will tend to have a high BMI. (Suyasmi et al., 2018). On the other hand, adolescents who consume less high-calorie foods and consume less energy, because they do not like the food served or have quite busy school activities tend to have a low or less body mass index (BMI). BMI is a simple index of weight for height that is used to classify overweight and obesity in adults. BMI is defined as a person's weight in kilograms divided by the square of the height in meters (kg/m). The ideal BMI is one representation of ideal nutrition.

Previously there were several studies on the relationship between knowledge of balanced nutrition and nutritional status through the body mass index method, namely by Salim, Andi 2012 regarding "Description of Balanced Nutrition Behavior on the Nutritional Status of Adolescents in Madrasah Aliyah Negeri Mamuju Regency", by Mariam, Siti 2016 "Deep Nutrition Reproductive Health", by Mayang Sari E, Rafiony A regarding "Knowledge About Guidelines for Balanced Nutrition and Dietary Patterns for Students of Sman 1 Pontianak", and by Veronika AP, Puspitawati T, Fitriani A regarding "Associations Between Nutrition Knowledge, Protein Energy Intake and Nutritional Status of Adolescents". According to the results of these studies and observations, the higher a person's level of knowledge about balanced nutrition, the better his nutritional status.

In addition there are also several studies on the relationship between physical activity and nutritional status through the body mass index method, namely by Suryana & Fitri, Y 2017 with the title "Relationship between physical activity and BMI and body fat composition", by Fitri Y, Mulyani NS, Fitrianingsih E , & Suryana S 2016 concerning "The effect of providing physical activity (aerobic exercise) on blood pressure, BMI and RLPP in obese women", and by Angrraini 2014 entitled "Relationship between levels of physical activity and nutritional status in preschool-aged children". According to the results of these studies and observations, there is a relationship between physical activity and a person's nutritional status and health.

Therefore, researchers want to investigate further about the relationship between nutritional knowledge and nutritional status through the Body Mass Index (BMI) method and the relationship between physical activity and nutritional status through the Body Mass Index (BMI) method at MTsN 1 Trenggalek, this is because they have never there is research on these 2 variables in related schools. Besides that, for nutrition problems on a national scale, the 2021 UNICEF data still shows that there are many nutritional problems in adolescents in Indonesia.

MATERIAL AND METHODS

A. Research Methods

This study used an observational method with a cross-sectional research design. In measuring using the observational method conducted interviews and recording. In the cross-sectional design, the researcher observes or measures variables at certain times. The observed subjects were only observed once and the measurement of subject variables was carried out at the time of the examination. So, in a cross-sectional study the researchers did not follow up on the measurements taken. Where the independent variable data is knowledge of balanced nutrition and physical activity and the dependent variable is nutritional status through the Body Mass Index method.

B. Population and Sample

The research population consisted of 200 students at MTsN 1 Trenggalek, Trenggalek Regency, with a sample of 117 respondents, which was determined using a systematic random sampling method.

RESULTS
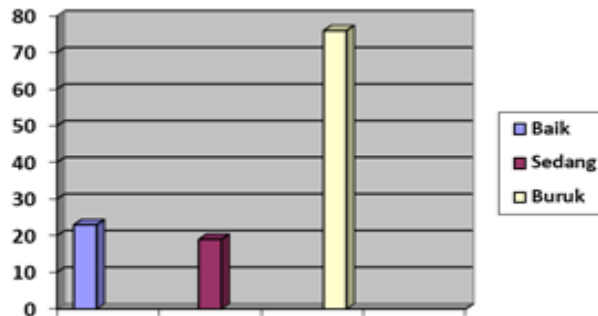
Picture 1. Respondents Balanced Nutrition Knowledge Level

Most of the respondents had poor knowledge about balanced nutrition 64.41%, good 19.49%, moderate 16.10%.
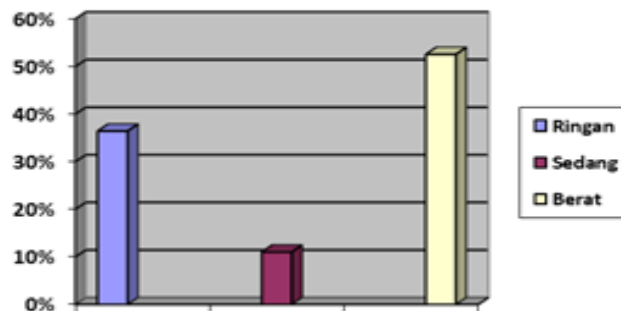
Picture 2. Respondents' Physical Activity

The percentage of the majority of respondents having physical activity in the heavy category was 52.55%, light was 36.44%, moderate was 11.01% and the percentage of respondents' physical
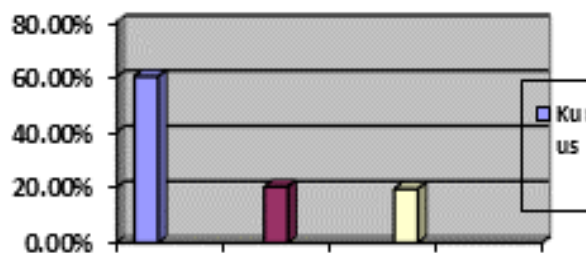
activity was measuring students' physical activity for 24 hours within 7 consecutive days using the Physical formula Activity Level (PAL).

Picture 3. Nutritional status using Body Mass Index (BMI) measurement media

Respondents who had a thin Body Mass Index (BMI) level of 60.16%, normal 20.33%, 19.49% of respondents had a Body Mass Index (BMI) that was overweight and 0% had an Obese BMI.

DISCUSSION

A. Relationship between Knowledge of Balanced Nutrition and Nutritional Status through the Body Mass Index (BMI) Measurement Method

Descriptively, like the data that has been presented, it was found that most adolescents had poor knowledge about balanced nutrition 64.41%, both 19.49% and moderate 16.10% and respondents who had a Body Mass Index (BMI) level of respondents who had the level of body mass index (BMI) that is thin is 60.16%, normal is 20.33%, 19.49% of respondents have a body mass index (BMI) that is overweight and 0% has BMI obesity. It can be seen from this correlation that the lack of knowledge of balanced nutrition in teenagers at MTsN 1 Trenggalek is comparable to the majority of teenagers at MTsN 1 Trenggalek having a thin Body Mass Index.

Analytically, there is a relationship between knowledge of balanced nutrition and nutritional status through the method of measuring Body Mass Index (BMI) based on table V.4, it is known that the significance value or Sig. (2-tailed) of 0.021 because Sig (2-tailed) 0.021 ≤ of 0.05, it can be concluded that Ha is accepted and H0 is rejected, meaning that there is a relationship between knowledge of balanced nutrition on nutritional status through the method of measuring body mass index in adolescents at MTsN 1 Trenggalek .

B. The Relationship between Physical Activity and Nutritional Status through Body Mass Index (BMI) Measurement Methods at MTsN 1 Trenggalek

Descriptively, like the data that has been presented from the results of research at MTsN 1 Trenggalek, the majority of respondents had physical activity in the heavy category of 52.55%, light as much as 36.44%, moderate 11.01% and respondents who had a high level of Body Mass Index (BMI).) were thin as much as 60.16%, normal 20.33%, 19.49% of respondents had a body mass index (BMI) that was overweight and 0% had an obese BMI.

It can be seen from this correlation that most of the teenagers at MTsN 1 Trenggalek have strenuous physical activity comparable to the majority of teenagers at MTsN 1 Trenggalek having a thin Body Mass Index.

Analytically, based on table V.4, it is known that the significance value or Sig. (2-tailed) of 0.021 because Sig (2-tailed) 0.021 ≤ of 0.05, it can be concluded that Ha is accepted and H0 is rejected, meaning that there is a relationship between physical activity and nutritional status through the method of measuring body mass index in adolescents at MTsN 1 Trenggalek.

C. The Relationship between Physical Activity and Nutritional Status through Body Mass Index (BMI) Measurement Methods at MTsN 1 Trenggalek

Descriptively, like the data that has been presented from the results of research at MTsN 1 Trenggalek, the majority of respondents had physical activity in the heavy category of 52.55%, light as much as 36.44%, moderate 11.01% and respondents who had a high level of Body Mass Index

(BMI).) were thin as much as 60.16%, normal 20.33%, 19.49% of respondents had a body mass index (BMI) that was overweight and 0% had an obese BMI.

It can be seen from this correlation that most of the teenagers at MTsN 1 Trenggalek have strenuous physical activity comparable to the majority of teenagers at MTsN 1 Trenggalek having a thin Body Mass Index.

Analytically, based on table V.4, it is known that the significance value or Sig. (2-tailed) of 0.021 because Sig (2-tailed) 0.021 ≤ of 0.05, it can be concluded that Ha is accepted and H0 is rejected, meaning that there is a relationship between physical activity and nutritional status through the method of measuring body mass index in adolescents at MTsN 1 Trenggalek.

CONCLUSION

1. From the results of the study, respondents who had a lean Body Mass Index (BMI) level of 60.16%, normal 20.33%, 19.49% of respondents had a Body Mass Index (BMI) that was overweight and 0% had an Obese BMI .

2. From the results of the study, it was found that most of the respondents had poor knowledge about balanced nutrition (64.41%), moderate (16.10%) and good (19.49%).

3. The percentage of the majority of respondents having mild physical activity was 36.44%, while 11.01% and the percentage of heavy physical activity was 52.55%.

4. Analysis of significance value or Sig. (2-tailed) of 0.009 because Sig (2-tailed) 0.009 ≤ of 0.05, it can be concluded that Ha is accepted and H0 is rejected, meaning that there is a relationship between balanced nutritional knowledge and nutritional status through the body mass index (BMI) measurement method in adolescents at MTsN 1 Trenggalek.

5. Analysis of significance value or Sig. (2-tailed) of 0.021 because Sig(2-tailed) 0.021 ≤ of 0.05, it can be concluded that Ha is accepted and H0 is rejected, meaning that there is a relationship between physical activity and nutritional status through the method of measuring body mass index in adolescents at MTsN 1 Trenggalek.

REFERENCES

Angrraini, L. (2014). Hubungan tingkat aktivitas fisik dengan status gizi pada anak usia prasekolah. Skripsi, sarjana tidak diterbitkan. Universitas Negeri Semarang, Semarang.

Fitri Y, Mulyani NS, Fitrianingsih E, & Suryana S. (2016). Pengaruh pemberian aktifitas fisik (aerobic exercise) terhadap tekanan darah, IMT dan RLPP pada wanita obesitas. Aceh Nutrition Journal. Volume 1(2):105-110.

Florence, A. G. 2017. Hubungan Pengetahuan tentang Pencegahan Dismenore dengan Kejadian Dismenore pada Remaja Putri di SMKN 3 Bandung. Tugas Akhir. Politeknik Kesehatan Kemenke. Bandung.

Mariam, Siti. 2016. Gizi Dalam Kesehatan Reproduksi. Jakarta: Salemba Medika.

Mayang Sari E, Rafiony A. Pengetahuan Tentang Pedoman Gizi Seimbang Dan Pola Makan Siswa Sman 1 Pontianak. Pontianak Nutr J. 2020;3(1):1.

Salim, Andi. 2012. Gambaran Perilaku Gizi Seimbang Terhadap Status Gizi Remaja Di Madrasah Aliyah Negeri Kabupaten Mamuju. Skripsi.

Suryana & Fitri, Y. (2017). Hubungan aktivitas fisik dengan imt dan komposisi lemak tubuh. Jurnal AcTion: Aceh Nutrition Journal. 2(2): 114-119.

Suyasmi, N. M., Citrawathi, D. M., & Sutajaya, I. M. (2018). Hubungan Pola Makan Aktivitas Fisik Pengetahuan Gizi Dengan Indeks Massa Tubuh (IMT). Jurnal Pendidikan Biologi