

DESCRIPTION OF THE NUTRITIONAL STATUS OF ADOLESCENTS IN SIDOARJO ISLAMIC MIDDLE SCHOOL

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Abstract. Indonesia faces multiple nutritional problems, namely undernutrition and overnutrition. Many impacts will be experienced by adolescents when experiencing malnutrition. This study aims to predict health problems in adolescents by measuring nutritional status. The research method used is descriptive. The population in this study were all Sidoarjo Islamic Middle School students. The sample in this study amounted to 60 teenagers. The sample technique used is purposive sampling. Data collection was carried out by calculating BMI, after that assessing nutritional status using the Z-score formula according to the anthropometric table. The results showed that 57% of adolescents in Sidoarjo Islamic Middle School had normal nutritional status and 43% experienced nutritional problems, namely 23% had obesity nutritional status, 15% had overweight nutritional status and 5% had thinness nutritional status. From the results of this study it can be concluded that there are still teenagers who have nutritional problems. It is expected that adolescents will pay more attention to the intake of food consumed to prevent experiencing nutritional problems, both undernutrition and over nutrition because during adolescence a balanced nutritional intake is needed to support growth and development. Balanced nutrition that is given regularly can increase concentration in the learning process.

Keywords: Nutritional status, Adolescents

1 INTRODUCTION

Nutrients are substances that are contained in food and are needed by the body for metabolic processes, starting from the process of digestion, absorption of food in the small intestine, transportation by the blood to reach targets and produce energy, body growth, maintenance of body tissues, biological processes, disease healing, and body immunity (Roniwati, 2020) (Wang et al., 2021). Nutritional status is a condition caused by a balance between intake of nutrients from food and the body's need for nutrients (M.Par'i et al., 2017) (T. B. Rahayu, 2020). Adolescence is a stage between childhood and adulthood. This term denotes the period from the onset of puberty until maturity is reached, usually from age 14 in boys and age 12 in girls (Ahyani & Astuti, 2018). The adolescent phase is a very important and very crucial developmental phase for adolescents, beginning with the maturity of the physical organs or sexual condition so that they are able to produce. Adolescents with an age range of 12-21 years are one of the most crucial stages of development in human life (Rahmawati et al., 2022). At this time, individuals begin to leave their role as children and try to develop themselves as unique individuals and not depend on their parents (Ajhuri, 2019).

Assessment of nutritional status in Indonesia based on Body Mass Index (BMI/U) in adolescents aged 13-15 years, it is known that undernutrition status is 8.7% (very thin 1.9% and underweight 6.8%), overnutrition status is 16% (fat 11.2% and obese 4.8%). While the nutritional status in East Java based on Body Mass Index (BMI/U) in adolescents aged 13-15 years in East Java, it is known that undernutrition status is 7.2% (very thin 1.5% and thin 5.7%), overnutrition status is 19.3% (fat 13.3% and obese 6.0%) (Kementrian Kesehatan Republik Indonesia, 2019). Sidoarjo ranks 2nd highest in East

Java Province with the proportion of central obesity at the age of ≥ 15 years (Kesehatan Badan Penelitian dan Pengembangan Kesehatan Puslitbang Humaniora dan Manajemen Kesehatan, 2018).

Indonesia is currently facing multiple nutritional problems. The double nutrition problem in question is the problem of undernutrition that has not been completely resolved and the problem of excess nutrition (Diana & Tanziha, 2020). The problem of undernutrition that is a challenge is the problem of protein energy deficiency (KEP), the problem of anemia, the problem of disorders due to iodine deficiency (GAKI) and the problem of vitamin A deficiency. Meanwhile, the problem of excess nutrition is the problem of obesity which is often found and causes mortality (M.Par'i et al., 2017)(Sarma et al., 2021).

Many impacts will be experienced by adolescents when experiencing malnutrition, such as adolescents who are malnourished or too thin will affect reproduction, especially for young women who will one day experience pregnancy and childbirth which have the potential to increase the risk of experiencing pregnancy and childbirth complications (Margiyanti, 2021)(Hafiza, 2020). Meanwhile, adolescents who are overweight or obese will have a higher risk of developing degenerative diseases, such as hypertension, diabetes mellitus, coronary heart disease and others (Kemendikbud, 2019) (Saputri et al., 2021). Adolescence is a vulnerable period because during this period there is an acceleration of growth and development that requires more energy intake. Changes in lifestyle and eating habits require adjustments in food intake (Ningtyias et al., 2020) (Capra et al., 2021).

The need for each type of nutrient differs according to age group. The nutritional needs of adolescents are relatively large, because adolescents are still experiencing a period of growth. In addition, adolescents generally carry out higher levels of physical activity compared to other ages, so they need more nutrients. Biologically their nutritional needs are aligned with their activities. Adolescents need more protein, vitamins and minerals per unit of energy they consume than prepubertal children (Proia et al., 2021) (Sartika et al., 2020). There are differences in nutritional needs between men and women, which are due to differences in hormonal characteristics and muscle differences between men and women. This of course will affect the metabolism in the body so that nutritional needs are also different (Festy, 2018). The problem of nutrition is a multidimensional problem because it is influenced by many interrelated factors, one of which is the economic factor. Economic factors are related to a person's ability to meet their food needs so that they will also be indirectly related to nutritional status (A. Rahayu et al., 2018). Eating disorders caused by a negative body image also often occur in adolescents. Basically eating disorders or eating disorders are mental disorders that interfere with eating behavior and cause sufferers to have excessive concern about body weight and shape (Kemendikbud, 2019) (Jebeile et al., 2021).

Food consumption affects a person's nutritional status. Good nutritional status or optimal nutritional status occurs when the body obtains enough nutrients to be used efficiently, thus enabling physical growth, brain development, work ability and general health at the highest possible level (Prado et al., 2020). Malnutrition occurs when the body experiences a deficiency of one or more essential nutrients. Overnutrition occurs when the body obtains nutrients in excessive amounts, causing toxic or harmful effects (A. Rahayu et al., 2019).

Given the importance of nutritional status in adolescents to support their growth and development, the researcher is interested in examining the description of the nutritional status of adolescents at Sidoarjo Islamic Middle School.

2 RESEARCH METHODS

This research is a descriptive research. This research was conducted at Sidoarjo Islamic Middle School in March 2023. The population in this study were all students of Sidoarjo Islamic Middle School. The sample in this study amounted to 60 adolescents. The sample technique used is purposive sampling. Data collection techniques in this study were carried out by measuring the height and weight of the respondents. After that calculate the Body Mass Index (BMI) of the respondent. After finding the results of BMI then assessing nutritional status using the Z-score formula adjusted to the anthropometric table. The data collection instrument used a height meter, weight scales and respondent demographic data. The results of this study will be presented in a frequency distribution table.

3 RESULT AND DISCUSSION

3.1 Result

The results of a study conducted in March 2023 on 60 adolescents obtained the following result:

Table 1. Frequency Distribution of Adolescents by Age at Sidoarjo Islamic Middle School, March 2023

| No | Age | N | % |
|--------|--------------|----|-----|
| 1 | 12 years old | 3 | 5 |
| 2 | 13 years old | 22 | 37 |
| 3 | 14 years old | 16 | 27 |
| 4 | 15 years old | 17 | 28 |
| 5 | 16 years old | 2 | 3 |
| Amount | | 60 | 100 |

Source: Primary data March 2023

Based on table 1 it shows that Sidoarjo Islamic Middle School youth aged 12 years are 5%, 13 years old are 37%, 14 years old are 27%, 15 years old are 28% and 16 years old are 3%.

Table 2. Frequency Distribution of Adolescents by Gender at Sidoarjo Islamic Middle School, March 2023

| No | Gender | N | % |
|--------|--------|----|-----|
| 1 | Male | 32 | 53 |
| 2 | Female | 28 | 47 |
| Amount | | 60 | 100 |

Source: Primary data March 2023

Based on table 2 shows that of the 60 respondents, 53% were male, and 47% were female.

Table 3. Frequency Distribution of Adolescent Nutritional Status Based on BMI/U at Sidoarjo Islamic Middle School, March 2023

| No | Nutritional Status | N | % |
|--------|--------------------|----|------|
| 1 | Thinness | 3 | 5% |
| 2 | Normal | 34 | 57% |
| 3 | Overweight | 9 | 15% |
| 4 | Obese | 14 | 23% |
| Amount | | 60 | 100% |

Source: Primary data March 2023

Based on table 3 shows that out of 60 adolescents, 57% have normal nutritional status, 23% have obese nutritional status, 15% have overweight and 5% have thinness.

Table 4. Frequency Distribution of Adolescent Nutritional Status by Age at Sidoarjo Islamic Middle School, March 2023

| Age | Nutritional status | | | | Amount |
|-----|--------------------|----------------|---------------|---------------|--------------|
| | Thinness | Normal | Overweight | Obese | |
| 12 | 0 (0%) | 2 (66,67%) | 0 (0%) | 1 (33,33%) | 3 (100%) |
| 13 | 2 (9,09%) | 10 (45,45%) | 3 (13,64%) | 7 (31,82%) | 22 (100%) |
| 14 | 1 (6,25%) | 7 (43,75%) | 3 (18,75%) | 5 (31,25%) | 16 (100%) |
| 15 | 0 (0%) | 13 (76,47%) | 3 (17,65%) | 1 (5,88%) | 17 (100%) |
| 16 | 0 (0%) | 2 (100%) | 0 (0%) | 0 (0%) | 2 (100%) |

Source: Primary data March 2023

Based on table 4, it was found that out of 3 people aged 12 years, 66.67% had normal nutritional status, 33.33% had obese nutritional status. Adolescents aged 13 years out of 22 people, 45.45% had normal nutritional status, 31.83% had obese nutritional status, 13.64% had overweight status and 9.09% had thinness nutritional status. Out of a total of 16 young people aged 14 years, 43.75% had normal nutritional status, 31.25% had obese nutritional status, 18.75% had overweight nutritional status and 6.25% had thinness nutritional status. Teenagers aged 15 years with a total of 17 people, 76.47% had normal nutritional status, 17.65% had overweight nutritional status and 5.88% had obese nutritional status. Adolescents aged 16 years with a total of 2 people, as much as 100% have normal nutritional status.

Table 5. Frequency Distribution of Adolescent Nutritional Status by Gender at Sidoarjo Islamic Middle School, March 2023

| Gender | Nutritional status | | | | Amount |
|--------|--------------------|----------------|---------------|---------------|--------------|
| | Thinness | Normal | Overweight | Obese | |
| Male | 2 (6,25%) | 16 (50%) | 6 (18,75%) | 8 (25%) | 32 (100%) |
| Female | 1 (3,57%) | 18 (64,29%) | 3 (10,71%) | 6 (21,43%) | 28 (100%) |

Source: Primary data March 2023

Based on table 5, it was found that for the male gender, totaling 32 people, 50% had normal nutritional status, 25% had obese nutritional status, 18,75% had overweight nutritional status and 6,25% had thinness nutritional status. Meanwhile, for the female sex, totaling 28 people, 64,9% had normal nutritional status, 21,43% had obese nutritional status, 10,71% had overweight nutritional status and 3,57% had thinness nutritional status.

3.2 Discussion

Description of nutritional status based on BMI/U in adolescents at Sidoarjo Islamic Middle School.

Based on the results of the research conducted, it was found that Body Mass Index (BMI/U) in adolescents at Sidoarjo Islamic Middle School showed that out of 60 adolescents, 57% had normal nutritional status, 23% had obese nutritional status, 15% had overweight nutritional status and 5% had thinness nutritional status. This is in line with research conducted by (Ita Putri K, 2019), the results showed that the nutritional status of adolescents at SMP Advent Lubuk Pakam was mostly in the normal (good) category of 68.8%, the nutritional status of overweight 15.5%, the nutritional status of obese 6.6%, the nutritional status of thinness 6.6% and the nutritional status of severely thinness 2.2% (Gulo, 2019). From the results of research that has been done, it was found that most adolescents have good nutritional status. Good nutritional status (normal) indicates that the quality and quantity of food meets the body's needs. Good nutritional status occurs when the body obtains enough nutrients to be used efficiently, thus enabling physical growth, brain development, work ability and general health at the highest possible level (Pujiati et al., 2015). The good nutritional status of adolescents cannot be separated from the role of parents. Parents' awareness of fulfilling good and balanced nutrition for their children makes children grow and develop well according to their age (de Buhr & Tannen, 2020). Adolescents who have malnutrition can be caused by inappropriate selection of foods consumed (Maehara et al., 2019). Meanwhile, adolescents who have more nutrition and obesity can be caused by too much consumption of foods that contain excess carbohydrates.

Description of nutritional status based on age in adolescents at Sidoarjo Islamic Middle School.

Based on the research that has been done, it was found that out of 3 people aged 12 years, 66.67% had normal nutritional status, 33.33% had obese nutritional status. Adolescents aged 13 years out of 22 people, 45.45% had normal nutritional status, 31.83% had obese nutritional status, 13.64% had overweight nutritional status and 9.09% had thinness nutritional status. Out of a total of 16 young people aged 14 years, 43.75% had normal nutritional status, 31.25% had obese nutritional status, 18.75% had overweight

nutritional status and 6.25% had thinness nutritional status. Teenagers aged 15 years with a total of 17 people, 76.47% had normal nutritional status, 17.65% had overweight nutritional status and 5.88% had obese nutritional status. Adolescents aged 16 years with a total of 2 people, as much as 100% have normal nutritional status. This is not in line with research (Yolanda Syahfiri, dkk. 2019), the results showed that the nutritional status of very thin was the highest at the age of 15 years, namely as much as 11%, the highest nutritional status was thin at the age of 16, namely as many as 33%, the highest normal nutritional status was at the age of 16, as many as 67%, the nutritional status of obese was highest at the age of 12, as much as 27%, and the nutritional status of obesity was highest at the age of 15, as much as 22% (Syahfitri et al., 2017).

In this study, adolescents aged 14 years had more nutritional problems, namely over nutrition and obesity by 50%. There are various causes of overnutrition in children. In general, it can be caused by excess food energy or due to insufficient energy expenditure or both, as is often found in children in families with good socioeconomic status, as well as a sedentary lifestyle. Nutrition has more to do with the influence of various factors, including sufficient or excess purchasing power, the availability of high-energy and low-fiber foods such as several types of fast food which are now mushrooming in big cities (Suharsa & Sahnaz, 2016) (Hirvonen et al., 2020).

Most of today's teenagers lack physical activity, because at this time they prefer to play with their gadgets, especially those that can be used to access anything easily. Besides that, there are also many teenagers who like to consume sweet and oily foods which are sold in the school cafeteria. Sweet foods contain lots of calories which can cause a person to be overweight and to become obese (Lin & Li, 2021) (Masood & Moorthy, 2023).

Description of nutritional status based on gender in adolescents at Sidoarjo Islamic Middle School.

In the research that was conducted, out of 60 adolescents it was found that of the male gender, totaling 32 people, 50% had normal nutritional status, 25% had obese nutritional status, 18.75% had overweight nutritional status and 6.25% had thinness nutritional status. Meanwhile, for the female sex, totaling 28 people, 64.29% had normal nutritional status, 21.43% had obese nutritional status, 10.71% had overweight nutritional status and 3.57% had thinness nutritional status. This is not in line with research (Yolanda Syahfiri, dkk. 2019), the results showed that the percentage of severely thinness nutritional status was highest in the female sex as many as 3 people (2%), the highest thinness nutritional status in the female sex was 7%, the highest normal nutritional status was in the male sex as much as 3%, the overweight nutritional status was the highest in the female sex as much as 26% and the obese nutritional status was the highest in the male sex as much as 15% (Syahfitri et al., 2017).

At the time of adolescence the perception of body image is very important so that their physical appearance looks better so that teenagers try to increase attention to their body shape (Fernández-Bustos et al., 2019) (Rodgers et al., 2020) (Gattario & Frisé, 2019). Teenagers will also do various ways to get the ideal body shape so that they look attractive (Salsabilla et al., 2018).

Women have the highest good (normal) nutritional status compared to men, which can be caused by their perception that they want to have ideal body proportions. Therefore, they really maintain their diet so that their bodies remain ideal, not experiencing thinness and obesity.

4 CONCLUSIONS AND SUGGESTIONS

4.1 Conclusion

Based on the results of research on the nutritional status of adolescents conducted at Sidoarjo Islamic Middle School, it can be concluded as follows:

1. (Body Mass Index) BMI/U shows that out of 60 adolescents, 57% have normal nutritional status, while 43% have nutritional problems (23% obese, 15% overweight nutritional status, 9% thinness nutritional status).
2. Based on the results of research on the nutritional status of adolescents according to age, it showed that adolescents aged 12 years, 66,67% had normal nutritional status, 33,33% had obese nutritional status, adolescents aged 13 years, 45,45% had normal nutritional status and the remaining 54,55% had nutritional problems (31,82% obese, 13,64% overweight, 9,09% thinness) 43,75% of adolescents aged 14 years have normal nutritional status and 56,25% have nutritional problems (31,25% obese, 18,75% overweight, 6.25% thinness), 76,47% of 15 year old adolescents had normal nutritional status and 23,53% had nutritional problems (17,65% overweight, 5.88% obese). Adolescents aged 16 years, namely 100%, have normal nutritional status.
3. Based on the results of research on the nutritional status of adolescents according to gender, it was found that male sex, namely as much as 50% had normal nutritional status and the remaining 50% had nutritional problems (25% obese, 18.75% overweight, 6.25% thinness). While female, 64.29% had normal nutritional status and the remaining 35.71% had nutritional problems (21.43% obese, 10.71% overweight, 3.57% thinness).

4.2 Suggestion

1. For further researchers

Future research should be able to develop research on the causes of nutritional problems experienced by adolescents, especially adolescents with overweight problems which, if left unchecked, can cause various health problems in the future.

2. For educational institutions

It is hoped that the school will work closely with the nearest health center to provide counseling on fulfilling balanced nutrition in adolescence to support growth and development considering that there are still many adolescents who experience nutritional problems.

3. For adolescents

It is expected that adolescents will pay more attention to the intake of food consumed to prevent experiencing nutritional problems, both undernutrition and over nutrition be-

cause during adolescence a nutritious and balanced food intake is needed to support growth and development. Good nutrition that is given regularly can increase concentration in the learning process.

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