

## THE RELATIONSHIP BETWEEN EATING DISORDERS AND NUTRITIONAL STATUS IN ADOLESCENTS

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### Abstract

**Background:** The changes that occur during adolescence can lead to various issues, including nutritional status problems. Some indirect causes of nutritional problems are related to eating disorders. Eating disorders are psychiatric syndromes characterized by deviant eating patterns associated with psychological characteristics related to food, body shape, and weight. **Purpose:** The aim of this study is to determine the relationship between eating disorders and nutritional status among students of SMAN 4 Maros, Maros District in the year 2023. **Methods:** This research is an observational study that observes phenomena or events occurring in the research subjects, using a cross-sectional design. The population of this study consists of 281 students, with a sample size of 165 student respondents from SMAN 4 Maros District. **Results:** The results of the study indicate that there is a relationship between eating disorders and nutritional status among students of SMAN 4 Maros District, with a p-value of  $0,00 < 0,05$  **Conclusions:** The conclusion drawn from this research is that eating disorders are related to the nutritional status of adolescents in SMAN 4 Maros, Maros District in the year 2023. This study suggests that students of SMAN 4 Maros should adopt healthy eating behaviors to prevent eating disorders.

**Keywords:** Adolescent, Eating Disorder, Indonesia, Nutrition Status, Nutritional Risk Screeni

### Introduction

Teenagers are individuals who experience growth and development in various aspects, including physical, cognitive, and socio-emotional aspects. In the physical aspect, adolescents have an interest in physical appearance. This is due to the occurrence of puberty at the beginning of adolescent development which results in physical changes <sup>(1)</sup>. The picture of body image in adolescent girls, amounting to 45.20% and men 35%, so that the desire to lose weight occurs more in girls 37.60% than men 37% <sup>(2)</sup>. This encourages adolescents with obesity to improve physical appearance, especially body weight <sup>(3)</sup>.

Disturbances to body image perception can affect a person experiencing nutritional problems. This is caused by eating patterns that are carried out to maintain body shape in accordance with the perception of the expected body image. Anxiety about body shape makes adolescents deliberately not eat which leads to eating disorders <sup>(4)</sup>. Eating disorders are psychological and medical disorders that cause serious abnormalities in eating behavior to control body weight or commonly referred to as a mental disorder that can affect adolescents <sup>(5)</sup>. Eating disorders such as anorexia nervosa (AN), bulimia nervosa (BN),

binge eating disorder (BED) and eating disorders not otherwise specified (EDNOS) are problems associated with impaired body image perception among adolescents <sup>(2)</sup>.

There is a link between eating disorders and adolescent nutritional stress, although they are different conditions. Eating disorders can cause serious nutritional problems in adolescents. For example, in anorexia nervosa, an individual often refuses to eat or significantly reduces food intake, which can result in deficiencies of essential nutrients such as protein, vitamins and minerals <sup>(6)</sup>. Similarly, bulimia nervosa, where an individual experiences cycles of binge eating and then engages in vomiting behavior or the use of laxatives to eliminate the food that has been eaten, can interfere with adequate nutrient absorption. In binge eating disorder, adolescents often consume large amounts of food in a relatively short period of time, which can lead to nutrition and health problems <sup>(7)</sup>.

Eating disorders may be one of the factors contributing to adolescent nutritional status, as persistent eating disorders may interfere with the absorption, utilization or intake of adequate nutrients. In addition, psychological issues underlying eating disorders, such as low self-esteem, body dissatisfaction or emotional stress, can also affect daily eating patterns and nutritional status balance <sup>(8)</sup>.

Nutrition in adolescents is something that must be considered, many impacts will be experienced by adolescents when experiencing malnutrition <sup>(9)</sup>. Based on Riskesdas data, the prevalence of obese adolescents aged 13-15 years in Indonesia is 20% and obese adolescents aged 16-18 years is 13.6%. The prevalence of obese adolescents in Indonesia has increased compared to 2013, the prevalence of obesity in adolescents aged 13-15 years increased by 0.4% while the prevalence of obese adolescents aged 16-18 years increased by 2.2% <sup>(10)</sup>. Nutritional status in adolescents must always be considered because adolescents are still in a state of growth and self-formation that may change the state of their nutritional status <sup>(11)</sup>.

Based on the explanation above, it shows that attention to body image is very strong in adolescence. Teenagers make various efforts to get an ideal body so that it looks attractive. One of these efforts is dieting. Restricting the consumption of certain types of food or having uncontrolled dietary habits with the aim of getting an ideal body (slim) often occurs in adolescents. Excessive dieting by limiting food consumption will cause eating disorders that will also affect nutritional status in adolescents <sup>(12)</sup>.

## Methods

The type of observational research is to make observations of phenomena or events that occur in research subjects and the research design is cross sectional. This research was conducted at SMA Negeri 4 Maros, Pakalu, Kalabbirang Village, Bantimurung District, Maros Regency, South Sulawesi in February - March 2023. The population of this study were 281 students, the number of samples in this study were 165 samples taken by random sampling, which met the inclusion and exclusion criteria. Inclusion criteria in this study include: 1. Samples are male and female, 2. Samples aged 16-18 years, 3. There is no communication disorder 4. In good physical and mental health, 5. Willing to be a research sample. Exclusion criteria in this study are students who are not present when the research is conducted. Anorexia Nervosa variables (eating disorders) were measured using a questionnaire measuring tool, namely Anorexia nervosa questionnaire as many as 20 questions, by giving a score to each question in the questionnaire, namely: 1 = never, 2 = rarely, 3 = several times, 4 = often, 5 = always, the assessment was carried out on a Likert scale. Nutritional status is measured by calculating z - score according to body mass index according to age (IMT / U) then the z - score results will be determined by looking at the IMT / U classification based on the 2010 Ministry of Health Anthropometry SK book.

Data collection on eating disorder variables (anorexia nervosa) and nutritional status variables was carried out using a questionnaire regarding height and weight measurements. Processing and presentation of data using a computer using the SPSS 21 program which includes data entry, editing, coding, and data analysis.

## Results

### Univariate Analysis

**Table 1. Distribution of Respondents' Characteristics Based on Age of Adolescents, and Based on Class in Adolescents at SMAN 4 Maros Maros Regency in 2023**

Variable	n	(%)
<b>Age</b>		
16 years old	80	48,50
17 years old	85	51,50
<b>Total</b>	<b>165</b>	<b>100</b>
<b>Gender</b>		
Male	91	55,15
Female	74	44,85
<b>Total</b>	<b>165</b>	<b>100</b>
Variable	n	(%)

Based on Table 1, it can be seen that the age of respondents 16 years was 80 people with a percentage of (48.50%), while the age of respondents 17 years was 85 people with a percentage of (51.50%). Then, based on table 1. Then it can be seen that the percentage of male gender is 91 respondents (55.15%) and female gender is 74 respondents (44.85%).

**Table 2. Distribution of Respondents Based on Eating Disorders in Adolescents, and Based on Class in Adolescents at SMAN 4 Maros Maros Regency Year 2023**

Variable	(n)	(%)
<b>Eating disorders</b>		
Eating disorders	73	44,2
No eating disorders	92	55,8
<b>Total</b>	<b>165</b>	<b>100</b>

Based on the results of Table 2, it can be concluded that adolescents who experience eating disorders are 73 (44.2%) while adolescents who do not experience eating disorders are 92 (55.8%). This means that adolescents do not experience eating disorders.

### Bivariate Analysis

**Table 3 Relationship between Eating Disorders and Nutritional Status in Adolescents of SMAN 4 Maros Maros Regency Year 2023**

Eating disorders	Nutrition Status						Total		<i>p</i> (value)
	Skinny		Normal		Fat		n	%	
	n	%	n	%	n	%			
Eating disorders	31	42,50	25	34,20	17	23,30	73	100	0,00
No eating disorders	20	21,70	56	60,90	16	17,40	92	100	
Total	51	30,90	81	49,10	33	20,00	165	100	

Based on table 3, it can be concluded that adolescents who experience eating disorders with thin nutritional status are 31 people (42.5%), experience eating disorders with normal nutritional status as many as 25 people (34.2%), and experience eating disorders with obese nutritional status as many as 17 people (23.3%). While those who did not experience eating disorders with thin nutritional status were 20 people (21.7%), did not experience eating disorders with normal nutritional status as many as 56 people (60.9%), and did not experience eating disorders with fat nutritional status as many as 16 people (17.4%). The results of statistical tests using chi-square obtained a value of  $p=0.00 < 0.05$  which means there is a relationship between eating disorders with nutritional status in adolescents of SMAN 4 Maros Maros Regency Year.

## Discussion

Eating disorders are a syndrome associated with aberrant eating behavior with psychological characteristics related to eating, body shape and weight. Eating disorders occur when a person reduces food intake to the extreme, this can affect a person's nutritional status <sup>(13)</sup>.

Based on the results of the study, it was found that there was a relationship between eating disorders and nutritional status in adolescents. This is in line with research conducted in Semarang with 59 adolescent respondents that there is a relationship between eating disorder and nutritional status, namely 67.8% of adolescents who experience eating disorder and 27.5% are included in the underfat nutrition category <sup>(14)(15)</sup>. Supported by research <sup>(16)</sup>, that there is a significant relationship between eating disorder and nutritional status in adolescents with a p value  $< 0.01$ . Another study conducted by <sup>(17)</sup>, that there is a significant relationship between eating disorders and body mass index in students of the University of Peshawar Pakistan with a p-value = 0.00 <sup>(17)</sup>. Similar results were also stated by research <sup>(18)</sup> which suggested that there was a relationship between eating disorders and nutritional status in adolescent girls at the Ayodya Pala Studio with a p-value = 0.000.

A person with an eating disorder will feel inferior and think that other people's bodies are more ideal than their own. In addition, many people perceive weight loss as a way to be accepted by others around them (friends and family) and this belief often leads to eating disorders that impact a person's nutritional status <sup>(15)</sup>. An imbalance between food intake and energy expenditure can result in weight gain and body composition changing from thin to fat or vice versa <sup>(19)</sup>.

Poor eating patterns are related to eating from fullness rather than the amount consumed and some adolescents skip meals which leads to poor eating behavior such as eating more and faster than usual <sup>(20)</sup>. Nutritional status is strongly influenced by a person's eating behavior. This shows that healthy eating behavior will meet the body's nutritional needs and produce good nutritional status <sup>(21)</sup>. Undernutrition in adolescents often occurs as a result of limiting food consumption by not paying attention to nutritional content and health, so that it will have a negative impact on nutritional status <sup>(14)</sup>.

Food-related behaviors such as food restriction or overeating, depressive symptoms, and obsessive thoughts about appearance and weight can lead to eating disorders. Nutritional status is strongly influenced by a person's eating behavior. This suggests that healthy eating behavior will meet the body's nutritional needs and result in good nutritional status <sup>(22)</sup>.

Eating disorders of anorexia nervosa and bulimia nervosa are common among adolescents. It is natural for teenagers to pay attention to their physical appearance. However, when it is excessive, it can become obsessive and affect their diet. At first, sufferers usually only try to lose weight or want to form an ideal body, but that desire in the long run will turn into obsessive and uncontrollable <sup>(23)</sup>. In addition to eating behavior, negative body image also causes adolescent girls to make various weight loss efforts in an incorrect way and will later affect their nutritional status <sup>(24)</sup>.

## Conclusion

Based on the results of this study, it can be seen that eating disorders can affect eating behavior, such as extreme food reduction or dieting, consuming excessive food, and feeling depressed and overthinking about body shape and weight. The existence of continuous interference with eating behavior or other behaviors is to control weight and the existence of this behavior can affect physical health.

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