



The relationship between body image perception and eating patterns

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ABSTRACT

Background: Perception of body image and eating patterns in adolescents are two important aspects of health that play a significant role in their development. Body image reflects an individual's perception of their physical appearance, while eating patterns refer to their daily food consumption habits. Female students in high school (SMA) often experience pressure to meet beauty standards set by social media, peers, and other factors. The quantity and quality of food and drinks consumed can impact nutritional intake and overall health of individuals and society.

Objectives: To determine the relationship between perceived body image and eating patterns among female SMAS Kesuma Bangsa Londut students.

Methods: This research was conducted at SMAS Kesuma Bangsa Londut in January-February 2024 on female students. The research used a cross-sectional design method. Data collection was carried out using a Body Image questionnaire based on the theory of Thomas F. Cash 1989, the Multidimensional Body-Self Relations Questionnaire-Appearance Scale (MBSRQ-AS) theory, and an eating pattern questionnaire (Food Frequency Questionnaire). Data were analyzed using the Chi-Square test to determine the relationship between two variables in the same category.

Results: The research results show that there is a significant relationship between body image and eating pattern (p -value = 0.001, OR = 6.514, 95% CI = 1.979-21.442).

Conclusions: There is a significant relationship between body image and eating patterns among adolescent girls at SMAS Kesuma Bangsa Londut. It is hoped that students can manage their eating patterns better by consuming a variety of foods and drinks so that they provide good benefits for their health.

KEYWORD: adolescent girls; body image; eating patterns; perception

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INTRODUCTION

Teenagers are individuals aged between 10 and 18 years old. Adolescent health efforts aim to prepare teenagers to become healthy, intelligent, qualified, and productive adults and to participate in maintaining and improving their health. The Indonesian Ministry of Health emphasizes that adolescent health is strongly influenced by a healthy eating pattern and regular physical activity (1).

Nutritional problems that often occur in adolescents include anemia, obesity, and undernutrition due to pursuing body goals with an improper eating pattern. Perceptions of body image and eating pattern in adolescents are two very important aspects of health in their development. Body image reflects an individual's view of their physical appearance, while eating pattern refers to daily food consumption habits that can affect overall health. Adolescents, especially high school students, often experience pressure to achieve beauty standards set by social media, peers, and other factors.

Body image is a component of self-concept that is influenced by cognitive growth and physical development. Thus, it can be said that body image is a collection of conscious and unconscious attitudes of individuals towards their bodies, including past and present perceptions, as well as feelings about the size, function, appearance, and potential that individuals have physically (2).

Body image is a complex construct formed from beliefs, thought patterns, perceptions, behaviors, and feelings. The way a person sees themselves and their body affects their health, mental health, and relationships with others. Eating disorders are psychiatric diseases that can occur due to genetic factors or environmental influences. Common eating disorders include anorexia nervosa, binge-eating disorder (BED), and bulimia nervosa (3).

Body image is very important for women, especially during adolescence, which is a period of significant change. This is a time when the transition from childhood to adolescence occurs, and often adolescents look up to idols for inspiration in terms of appearance and body shape. Additionally, paying attention to appearance is seen as a way to attract the opposite sex. In contrast to adolescent men,

changes in body shape are more satisfying for them when muscle mass increases (4).

There are two dimensions to the understanding of body image: one related to one's own experience of the body and the other to other people's (social) judgments about the physical appearance of the body, including shape, size, and weight. The second dimension shows that the body is evaluated and continuously monitored socially. There is an inequality where the ideal body image is emphasized more for women than for men. Women become accustomed to paying more attention to their bodies than men, including regarding the ideal body image that must be achieved (5).

Eating pattern is a way or effort to regulate the amount and type of food intake to maintain health, nutritional status, and prevent or help cure diseases (6). Eating pattern is the most important behavior that can affect the state of nutrition. This is because the quantity and quality of food and beverages consumed will affect nutritional intake, which in turn impacts individual and community health. Optimal nutrition is essential for normal growth, physical development, and intelligence in infants, children, and all age groups. Good nutrition helps maintain a normal or healthy body weight, reduces susceptibility to infectious diseases, increases work productivity, and protects against chronic diseases and premature death (7).

There are many factors that affect nutritional status, namely the eating pattern consumed. If the daily eating pattern is less diverse, there will be an imbalance between the input and nutritional needs required for a healthy and productive life (8). Based on the results of research conducted by researchers on 101 female students, it showed that 23 female students (52.3%) had a positive body image with a good eating pattern, 21 female students (47.7%) had a positive body image with a bad eating pattern, 17 female students (29.8%) had a negative body image with a good eating pattern, and 40 female students (70.2%) had a negative body image with a poor eating pattern (9).

The purpose of this study was to determine the relationship between body image perception and eating pattern in high school students of Kesuma Bangsa Londut. The results of this study

are expected to provide a deeper understanding and insight into the factors that can affect the health and well-being of adolescents, who are still easily influenced by social and environmental factors during adolescence.

MATERIALS AND METHODS

This study uses a correlational descriptive design method with a cross-sectional approach where data concerning independent variables or risks and dependent variables or consequent variables will be collected at the same time (10). This research was conducted at SMAS Kesuma Bangsa Londut, Kualuh Hulu District, North Labuhanbatu Regency. The study was conducted in January-February 2024.

The sample, according to (11), is a part of the number and characteristics possessed by the population. The sample size is a step to determine the size of the sample taken in carrying out a study. The formula used to determine the sample size is the Lemeshow formula. Based on the results of the calculation of the number of samples, the number of samples obtained was 155,653, rounded to 155 samples to represent the population in this study.

Data collection was carried out using the Body Image questionnaire based on the theory of Thomas F. Cash (1989), the Multidimensional Body-Self Relations Questionnaire-Appearance Scale (MBSRQ-AS), and a eating pattern

questionnaire (Food Frequency Questionnaire). The use of the MBSRQ-AS was tailored to meet the researchers' needs, as it is an assessment tool for appearance scales to obtain scores based on the perceptions of each female student.

Data analysis in this study is divided into univariate analysis and bivariate analysis. Univariate analysis aims to explain or describe the characteristics of each research variable. Bivariate analysis is conducted on two variables that are thought to be related. The results of this statistical test were analyzed using the Chi-Square test, which is useful for testing the relationship between two categorical variables, variable X and variable Y (10).

RESULTS AND DISCUSSIONS

Univariate Analysis

The results of data collection from 155 respondents, who ranged in age between 15 and 19 years, are presented in Table 1. The table shows the frequency distribution of respondents' age categories, with the majority of respondents being 16 years old (43.9%) and the fewest respondents being at least 19 years old (1.3%). Based on the results of **Table 1**, a picture of the characteristic of respondents in the adolescent category emerges. At this age, adolescents are very brave to take risks to achieve what they want, such as engaging in extreme diets in order to attain a good and ideal body.

Table 1. Characteristics of Subjects

Characteristics	Frequency Dustribution	
	n	%
Age (years)		
15	34	21.9
16	68	43.9
17	41	26.5
18	10	6.5
19	2	1.3
Body Image		
Positive	13	8.4
Negative	142	91.6
Eating Patterns		
Good	36	23.2
Bad	119	76.8

The data showed that many female students had a negative body image, with 142 respondents accounting for 91.6%, while only 13 respondents, accounting for 8.4%, had a positive body image, it shows that many respondents have a negative body image, indicating that the majority of respondents are less satisfied with their body shape. Body satisfaction in adolescents can be influenced by many factors, ranging from peers, social media/culture, TV ads/magazine covers, and others. This is what causes most adolescents to have a negative body image, even though they already have an ideal body according to age and body mass index calculations.

The results of data from 155 respondents were categorized based on the distribution of respondents' frequency into good eating pattern and bad eating pattern. The majority of respondents had a bad eating pattern, with 119 respondents accounting for 76.8%, while 36 respondents had a good eating pattern, accounting for 23.2%. the majority of

respondents have a poor eating pattern, illustrating a lack of concern for what respondents consume. In adolescence, most of them tend to prefer foods and drinks with a sweet taste, leading to a preference for snacks and less concern about their eating pattern.

Bivariate Analysis

In **Table 2**, the results from 155 respondents were analyzed to examine the relationship between body image and eating pattern. The majority of respondents reported having a negative body image coupled with a poor eating pattern, with 114 respondents falling into this category. Only 5 respondents reported having a positive body image despite having a poor eating pattern.

Based on **Table 4**, the majority of respondents have a negative body image and a poor eating pattern. This indicates that respondents are less satisfied with their bodies and less concerned about their eating pattern.

Figure 1. The Relationship between Body Image and Eating Pattern in Adolescent Girls at SMAS Kesuma Bangsa Londut

Body Image	Eating Patterns				Total		P Value	OR (CI 95%)
	Good		Bad		n	%		
	n	%	n	%				
Positive	8	61.5	5	38.5	13	8.4	0.001*	6.514 (1.979-21.442)
Negative	28	19.7	114	80.3	142	91.6		
Total	36	23.2	119	76.8	155	100		

*) analyzed using Chi Square Test

However, there are also respondents who have a positive body image and a good eating pattern, illustrating that there are still respondents who are satisfied with their bodies and care about their eating pattern.

Adolescent Girls Age Category

Based on the results of research conducted at SMAS Kesuma Bangsa Londut, **Table 1** shows that the respondents were adolescent girls aged 15 years, with 34 students (21.9%); adolescent girls aged 16 years, with 68 students (43.9%); adolescent girls aged 17 years, with 41 students (26.5%); adolescent girls aged 18 years, with 10 students (6.5%); and adolescent

girls aged 19 years, with 2 students (1.3%) Adolescence is a time when a person begins to gradually change and care about their appearance, including their body shape and other aspects that are important to them. This is done to provide self-satisfaction and to attract the opposite sex. Adolescent girls are often more prone to changing their desires frequently, but this is a way for them to explore themselves and establish their identity and confidence. It is not uncommon for many adolescent girls to set goals to go on extreme eating pattern in order to achieve the ideal body, and to cut and dye their hair as a way to boost their self-confidence.

Body Image of Adolescent Girls

Based on research conducted at SMAS Kesuma Bangsa Londut, **Table 2** shows the results of research on body image in adolescent girls at SMAS Kesuma Bangsa Londut. It is known that the majority of respondents who have a negative body image are 142 female students (91.6%). This can be seen from the answers to the questionnaire statement where as many as 51% prefer statement number 12, which is "I use any care product that is useful regardless of the shape and type." This happens because the majority of adolescent girls want an ideal, slim, and attractive body shape.

Basically, all humans are created as well as possible, but not infrequently we still encounter many adolescent girls who lack confidence in their appearance, either due to slightly dark skin color, less than ideal height, or body shape that they think is not good (12). Many adolescent girls assume that beauty standards for women must be white, tall, and have an ideal body. This leads teenagers to adopt a single standard that applies to all. Adolescence is a time of puberty for children, so it is not uncommon for them to envy their friends' appearances and even receive mocking words from friends as motivation to change (13).

Most subjects with negative body image consider body image to be unimportant (70.0%). Adolescents' perception and evaluation of body image are influenced by several conditions. First, there are changes in cognitive functions in adolescents who are able to define and reinterpret their theories about the body in new and different ways (14). Changes in cognitive function can be influenced by physical changes. Physical changes that occur in adolescents can affect the psychological development of adolescents, including self-concept in forming body image, which is a person's assessment of body shape and size. Second, physical and cognitive changes occur frequently with increasing issues of conformity with peers or peer groups. In addition to peer influence, family also influences the emergence of body image disturbance (15).

Adolescent Girls Eating Pattern

Based on research conducted at SMAS Kesuma Bangsa, **Table 1** shows the results of a study on the eating pattern of adolescent girls at SMAS Kesuma Bangsa Londut. Out of 155 female students, it was found that 119 female students (76.8%) had a poor eating pattern. This can be observed from the students' responses on the questionnaire statement sheet, where 16.3% more frequently chose statement number 7, which is "I consume chicken meatballs >1x a day." Adolescent girl often consume chicken meatballs more than once a day at school and outside of school.

This evaluation can help the school monitor and improve the eating pattern of female students to support their growth and development. Maintaining a healthy diet eating pattern et can have a positive impact on students at school. This is particularly important during adolescence when the body is still growing and developing (16).

The Determinants of Quality Adolescents Survey in the Globalization Era: The Case of Medan City conducted by the LIPI Population P2 research team in 2017 also explored information related to respondents' eating pattern. Eating pattern is one of the important aspects studied in this research, especially the eating pattern of adolescent girls. This is because of the crucial role of a healthy eating pattern in adolescent girls as one of the factors in preparing themselves so that when they grow up, they have adequate nutrition to become a healthy generation of mothers (17).

Bad eating habits that stem from unhealthy family eating habits ingrained since childhood may persist into adolescence. Adolescents may eat without understanding the importance of various nutrients and the consequences of not meeting their nutritional needs on their health (18).

A poor eating pattern can have a serious impact. If the eating pattern is not improved, it can lead to various health problems, including being underweight due to lack of intake, overweight due to excess food consumption, and other eating pattern related health issues. Therefore, it is crucial to maintain a balanced

eating pattern to ensure proper body intake. In addition to eating pattern, engaging in physical activity is also important to promote a strong and healthy body (19).

The Relationship between Body Image and Eating pattern in Adolescent Girls

Based on **Table 4** of statistical test results in this study using Chi-Square, which shows that the p-value results of $0.001 < 0.05$, H_0 can be accepted and H_a rejected. This means that there is a relationship between body image and eating pattern in adolescent girls at SMAS Kesuma Bangsa Londut. The analysis of the risk amount yielded an odds ratio (OR) value of 6.514 with a confidence interval of 1.979-21.442. This indicates that respondents with a negative body image (either good or bad) had a 6.514 times greater risk compared to those with a positive body image (either good or bad).

Based on the results of research conducted by researchers on 155 female students, it showed that 8 female students (61.5%) had a positive body image with a good eating pattern, 5 female students (38.5%) had a positive body image with a bad eating pattern, 28 female students (19.7%) had a negative body image with a good eating pattern, and 114 female students (80.3%) had a negative body image with a poor eating pattern.

Based on **Table 2**, it can be seen that there are 5 female students who have a positive body image but have a bad eating pattern. This indicates that these 5 female students are satisfied with their appearance and accept their body shape but do not care about their eating pattern. Consuming diverse foods with the appropriate number of servings can provide good benefits to the body. This bad eating pattern is caused by many female students who do not understand the importance of maintaining a healthy eating pattern, so most of them consume only the foods and drinks they like without considering the impact on their health and shape. Additionally, there were 28 female students with a negative body image but had a good eating pattern. This means that some female students were not satisfied with their body shape, but their food intake consisted of a variety of foods in the right portions.

Table 2 shows the very high level of dissatisfaction of SMAS Kesuma Bangsa Londut students with their body image. There are many factors that cause high negative body image, such as culture, peers, and one of them can be caused by social media. Social media can have a negative impact that makes adolescents perceive body image based on what they see. On social media, many people display ideal body shapes, which are often imitated and followed by adolescents. What they see becomes a desire that must be achieved. Not infrequently, teenagers resort to various methods such as eating pattern, reducing food intake, increasing physical activity, and other measures to achieve the desired ideal body (20). However, this does not rule out the possibility of obtaining different results in various locations with varying numbers of respondents. Therefore, this research can hopefully serve as a reference and evaluation material for respondents and the school.

Nutritional problems in adolescence are important not only because adolescence is an important period to form one's own views and socio-cultural relationships, but also because the onset of puberty results in body changes (21). In addition to the cognitive and psychological development of adolescents who are prone to depression due to body image problems, modern lifestyles are also a risk factor for nutritional problems in adolescents. A practical lifestyle is considered to have many benefits but also raises new problems, namely the increasing number of overweight individuals, commonly known as obesity. Previous research has shown that there are negative consequences of depression and obesity on work, somatic health, and lifestyle (15).

Factors related to the body image of health workers include gender, food consumption behavior, and interpersonal relationships. Age and medical conditions do not show a relationship with body image. The dominant factor influencing body image in health workers at Meuraxa Hospital in Banda Aceh City is consumption behavior (22).

The results of the research analysis provided a general picture of body image among active Instagram users. Interpersonal experience factors were found to be the most

significant factor affecting body image in active Instagram users at SMA Negeri 1 Kutacane, accounting for 39.93% of the total. Frequency analysis showed a high effect on 24 people (33.5%), a moderate effect on 28 people (39%), and a low effect on 20 people (27.9%). According to the research analysis, physical characteristics were the second most influential factor on body image in active Instagram users at SMA Negeri 1 Kutacane, accounting for 37.49% of the total. Frequency analysis revealed a high effect on 22 people (30.7%), a moderate effect on 32 people (44.5%), and a low effect on 18 people (25.2%) (23).

CONCLUSIONS AND RECOMMENDATIONS

Based on the research conducted and the results obtained from the Chi-Square test, a significant relationship between body image and eating pattern in adolescent girls at SMAS Kesuma Bangsa Londut has been identified. The study revealed that the majority of adolescent girls at SMAS Kesuma Bangsa Londut have a negative body image, indicating a strong desire for an ideal, slim, and attractive body. Additionally, many of these adolescent girls frequently consume certain foods, such as chicken meatballs, more than once a day. The study also found that adolescent girls at SMAS Kesuma Bangsa Londut have a diverse age distribution, with the majority being 16 years old. Furthermore, the test results indicated that the eating pattern of these adolescent girls tends to be poor, and there is a correlation between negative body image and unhealthy eating pattern habits. Conversely, adolescent girls with a positive body image are more likely to have a healthy eating pattern.

It is expected that students will regulate their eating pattern better by consuming a variety of foods and drinks to meet the intake of micronutrients such as vitamins and minerals, as well as macronutrients such as carbohydrates, fats, and proteins, as stated in the contents of MyPlate. This will help meet energy needs to carry out daily physical activities. Consuming a variety of foods will ensure the body receives adequate nutritional intake. A balanced eating pattern, combined with sufficient physical activity, can also help maintain an ideal body weight.

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