



Effect of Body Image on Unhealthy Diet Practices in Female Adolescents

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Abstract

Unhealthy diet practices have been widely observed among female adolescents. However, these practices can have negative health consequences, as they contribute to malnutrition and increase the incidence of eating disorders among adolescents, necessitating prevention measures targeting factors that promote unhealthy diet

practices among adolescents. This study aims to analyze the effect of body image on unhealthy diet practices among female adolescents. This case-control study was conducted at seven public high schools in Medan on 62 female adolescents in both the case and control groups. Samples were selected using simple random sampling. Data were analyzed using logistic regression. Study results showed that body image significantly affects unhealthy diet practices among female adolescents, with those having negative body image being 5.991 times (95% CI: 2.756–13.022) more likely to engage in unhealthy diet practices compared to those with positive body image. It is recommended that schools develop educational interventions integrated into the curriculum or extracurricular programs aimed at fostering a healthy body image and promoting healthy, evidence-based diet methods.

Keywords: Body image, Female Adolescents, Unhealthy diet practices

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Introduction

Adolescence is a critical period in individual development and a crucial phase for the establishment of health behavior that determines future disease risk (Heslin & McNulty, 2023). A particular concern is eating patterns and tendencies among adolescents related to dietary behavior (Syarifullah & Pranata, 2024). Diet practice is defined as actions that involve regulating and establishing eating patterns for various purposes, such as losing or maintaining weight or improving health (Oktrisia et al., 2021). Healthy diet practice refers to adjusting food intake to meet energy (calorie) needs and ensuring a balanced nutrient intake, accompanied by increased physical activity (Contreras et al., 2024), while unhealthy diet practice involves various eating-related actions that negatively impact health, such as drastically reducing food intake, skipping or reducing meal times, or avoiding certain nutrient-rich foods (e.g., carbohydrates or fats); following diets promising rapid results (e.g., losing >1 kg in a week); consuming only one type of food or nutrient (e.g., protein or specific fruits); and using weight-loss products such as weight-loss medications or pills (Zhao et al., 2024).

Unhealthy diet practices have been widely observed and reported, particularly among female adolescents. In a study by Cordero et al. (2022), it was observed that 59.9% of female adolescents in Central America engage in unhealthy dieting. Meanwhile, Vander Wal (2012) found that 46.6% of adolescent girls in the United States intentionally skipped meals, 16% fasted, 12.9% restricted one or more types of food, 8.9% used diet pills, and 6.6% intentionally vomited food. A study conducted in Indonesia also showed that 52.9% of adolescents engage in unsafe dieting (Putra et al., 2021). Sulistyan et al. (2016), in their study, also explained that 92.2% of adolescents in Indonesia who are currently or have ever been on a diet engage in unhealthy diet practices, such as reducing the frequency of meals (23.8%), avoiding certain types of food such as carbohydrates or fats (15.9%), consuming just one type of food (9.9%), and using weight loss products (4.6%) or taking weight loss pills (1.3%).

Unhealthy diet practices among adolescents can have negative health consequences because they trigger a cycle of chronic dieting through excessive compensatory behaviors or sudden cessation of dieting, leading to nutritional imbalances. This phenomenon contributes to the three major nutrition-related burdens faced by adolescents in Indonesia: malnutrition, obesity, and micronutrient deficiencies (UNICEF, 2021). Additionally, unhealthy diet practices may increase the incidence of eating disorders, such as anorexia nervosa and bulimia nervosa. These disorders can have severe consequences for adolescent health, including hindering physical growth, disrupting psychosocial development, causing nutritional deficiencies, and impairing cognitive function (Neumark-Sztainer et al., 2006). Unhealthy diet practices have even been reported as the second-largest risk factor contributing to premature death from non-communicable diseases



(WHO, 2024). This underscores the importance of preventing factors that increase unhealthy diet practices among female adolescents.

Various factors have been linked to the increase in dieting practices among adolescents, such as exposure to information on social media and peer influence, that create a new standard for body shape, thereby affecting adolescents' mindsets, attitudes, and behaviors, as well as their self-confidence (Terence et al., 2024). Public figures (influencers) or content promoting the “body goals” trend have led teenagers to increasingly focus on their physical appearance. The visualization of ideal body standards on social media shapes their perceptions when evaluating their own body image. Body image is a multidimensional concept comprising an individual's attitudes, perceptions, and evaluations of their appearance, resulting in varying assessments. This includes positive body image—where an individual feels satisfied, proud, accepting, comfortable, and confident with their body shape—and negative body image, where an individual feels dissatisfied and believes their body does not align with their desired standards (Normate et al., 2017). They may even compare themselves to others perceived as role models within their social environment. Female adolescents are generally more prone to negative body image because they experience faster physical and psychological changes than males, making them more sensitive to others' judgments about their body size and shape. They also place greater emphasis on the meaning and value of beauty, further intensifying their focus on body image (Millenia & Kurniawan, 2022).

Preliminary survey findings conducted on female adolescents in seven public high schools in Medan show that 94% of female adolescents on a diet engage in unhealthy dieting practices, such as restricting or avoiding foods that are important nutrients, such as carbohydrates or fats (52.7%); reducing meal times, such as skipping breakfast, lunch, or dinner (28.9%); consuming only one nutrient, such as protein alone (e.g., chicken breast), fiber alone (vegetables/fruits), or carbohydrates alone (6.6%); and using weight-loss products such as diet pills, tea, or other weight-loss beverages (4.7%). Most of their reasons for dieting were to achieve an ideal body shape (61.2%), with social media influencers serving as the standard for an ideal body (60%). Due to the high number of female adolescents practicing unhealthy dieting practices and having their own standards for an ideal body, this study aims to identify the effect of body image on unhealthy dieting practices among female adolescents in Medan.

Methods

This is a quantitative analytical observational study with a case-control design. The sample size was calculated using the formula of Lemeshow et al. (1990), resulting in 62 cases and 62 controls. The samples were taken from seven public high schools in Medan, representing 30% of



the 21 public high schools in Medan. Samples were selected using simple random sampling. Cases were randomly selected from a list of female adolescents identified as having unhealthy diet practices, while controls were randomly selected from a list of female adolescents not currently on a diet, based on a preliminary survey, with the number of samples proportionally distributed from each school where the study was conducted.

The dependent variable in this study was unhealthy diet practices, measured during the preliminary survey using a questionnaire based on items from the American Dietetic Association (ADA) and British Dietetic Association (BDA) regarding the types and patterns of eating practiced and the reasons for them over the past month. Unhealthy diet practices were further categorized into engaging in unhealthy diets (cases) and not engaging in diets (controls). Meanwhile, the independent variable is body image, measured using the Multidimensional Body Self-Relation Questionnaire Appearance Scale (MBSRQ-AS), which includes assessments of five subscales: appearance evaluation, appearance orientation, body part satisfaction, fear of gaining weight, and body size categorization (Cash, 2016). Body image was further categorized into positive and negative body image. The effect of body image on unhealthy diet practices was analyzed using logistic regression with a significance level of 95%, or statistically significant if $p < 0.05$.

Results

The results of the analysis based on the research data collection will be explained as follows.

Table 1. Respondent Characteristics

Characteristics	Cases		Controls	
	n = 62	%	n = 62	%
Age				
15 years	26	41.9	26	41.9
16 years	27	43.5	30	48.4
17 years	8	12.9	6	9.7
18 years	1	1.6	0	0
Nutritional status				
Underweight	0	0	7	11.3
Normal	42	67.7	55	88.7
Overweight	15	24.2	0	0
Obese	5	8.1	0	0

Table 1 shows that most respondents in the case group were aged 16 years (43.5%) and 15 years (41.9%). The control group was also dominated by respondents aged 16 years (48.4%) and



26 years (41.9%). The majority of female adolescents in the case group had normal nutritional status (67.7%) and were overweight (24.2%), while a small proportion were overweight (24.2%) and the rest were obese (8.1%). In the control group, most female adolescents had normal nutritional status (88.7%), and the rest were underweight (11.3%).

Tabel 2. Effect of Body Image on Unhealthy Diet Practices in Female Adolescents

Body image	Cases		Control		OR (95% CI)	p
	n=62	%	n=62	%		
Negative	43	69.4	17	27.4	5.991 (2.756-13.022)	<0.001
Positive	19	30.6	45	72.6		

Based on the results of the analysis as shown in Table 2, it was found that body image significantly affects unhealthy diet practices in female adolescents ($p < 0.001$). Female adolescents with a negative body image are 5.9 times more likely to engage in unhealthy diet practices than those with a positive body image.

Discussion

Body image is a multidimensional construct that reflects an individual's perceptions, thoughts, feelings, and behaviors regarding their body size, shape, and structure, which is formed through complex interactions between psychological, social, and cultural factors. Body image plays a crucial role in shaping attitudes and behaviors, particularly in decision-making related to diet and weight control, especially during adolescence when self-identity is still developing and sensitivity to social evaluation increases (Ribeiro-Silva et al., 2018). Body image is considered the center or internal factor of psychological issues leading to eating disorders and unhealthy diet practices, especially among adolescent girls (Cash, 2016). The findings of this study suggest that body image significantly affects unhealthy diet practices among female adolescents. Female adolescents with negative body image are 5.9 times more likely to engage in unhealthy diet practices compared to those with positive body image, indicating that dissatisfaction with body shape can drive female adolescents to take extreme measures to control their weight, even through unhealthy or risky methods.

These findings are consistent with a study by de Santana et al. (2016), who also mention that negative body image, which describes dissatisfaction with one's body, particularly feeling overweight, has a significant relationship with the tendency to engage in extreme or unhealthy weight control behaviors. Adolescents who perceive themselves as overweight are nearly three times more likely to engage in extreme weight control behaviors compared to those without such perceptions. Duarte et al. (2021) also noted in their study that adolescents who feel dissatisfied



with specific body parts or experience weight-related anxiety are more likely to engage in unhealthy diet practices.

Another study by Jankauskiene & Baceviciene (2019) also found that teenage girls with higher body mass indexes and those who overestimated their weight reported higher levels of body dissatisfaction, a desire to be thin, physical and social anxiety, eating disorders, and lower self-esteem, which are positively associated with unhealthy diet practices, such as less frequent breakfast consumption. In a study conducted by Niswah et al. (2021), it was explained that body image is one of the most important determinants in the formation of eating behavior and physical activity. Prima & Sari (2013) also showed in their study that there is a positive correlation between body dissatisfaction and the tendency toward unhealthy diet practices. Meanwhile, another study by Salsana & Sugiasih (2021) also stated that body image is one of the most important predictors of high intensity of unhealthy diet practices with a significant linear relationship, indicating that the more negative a teenage girl's body image is, the worse her diet practices will be.

However, research by Zayyani & Leonardi (2024) shows a negative correlation between body image and diet practice in young adult women who follow fitspiration content on social media. This suggests that the more positive the perception of the body, the less likely one is to engage in extreme dieting. The sociocultural model of eating pathology posits that pressure to achieve an ideal body type can lead young women to internalize certain beauty standards, such as the belief that a thin body is the ideal body type. When they feel they do not meet these standards, it triggers dissatisfaction that drives the desire to change their body shape through various means, including unhealthy dieting, which can lead to the development of eating disorders (Brytek-Matera & Czepczor, 2017). The cognitive behavioral model of body image (Cash, 2016) also states that negative cognitive schemas about the body (e.g., "I feel my body shape is not ideal" or "I am unattractive") can form the basis of maladaptive behaviors such as skipping breakfast or engaging in extreme food restriction. These thought patterns are formed through social experiences, social comparisons, and the internalization of unrealistic beauty standards (Baker et al., 2019). Female adolescents are generally more vulnerable to internalizing narrow and unrealistic beauty standards in the social media. As a result, they tend to compare themselves (social comparison) with models, influencers, or ideal figures who are often manipulated, so that when it is difficult or impossible to achieve these standards, they become dissatisfied with their bodies (Schaefer et al., 2019).

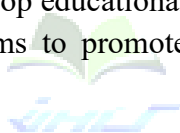
The findings of this study are also supported by the health belief model theory (Rosenstock et al., 1988), which states that individuals will take health actions if they perceive a serious threat, in this case, fear of having a body that is considered less than ideal or anxiety about becoming overweight, and if they believe that the action will provide benefits, such as dieting to achieve their desired body shape. Unfortunately, many adolescents do not consider the risks or side effects of



such extreme dieting (perceived risk). This imbalance in perception between threat and benefit is what leads to unhealthy diet practices among adolescent girls. The more negative the body image, the higher the tendency for individuals to engage in strict and even harmful eating control (Manurung, 2021). Conversely, healthy body image interventions have been shown to significantly reduce risk factors associated with eating disorders, internalization of thinness, and perceived pressure from the media, particularly among adolescent girls. Positive intervention effects are also observed in protective factors related to the development of eating disorders in adolescents, such as increased self-esteem, prevention of mental disorders, and reduced desire to be thin (Svantorp-Tveiten et al., 2022).

Conclusion and Recommendation

The findings of this study suggest that there is a significant effect between body image and unhealthy diet practices in female adolescents, whereby female adolescents with a negative body image are more likely to engage in unhealthy diet practices than female adolescents with a positive body image. Schools are expected to develop educational interventions that can be integrated into the curriculum or extracurricular programs to promote a healthy body image and encourage healthy, evidence-based diet methods.



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