

# Relationship Between Body Image and Eating Behavior Among High School Female Adolescents

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## Relationship Between Body Image and Eating Behavior Among High School Female Adolescents

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### ABSTRACT

**Background:** Physical and psychological alteration during adolescence could determine adolescents' nutritional status, especially for female adolescents. The Indonesian Ministry of Health estimated about 26.5% of female adolescents aged 12 – 18 years in South Sumatera Province were at risk of chronic energy deficiency in 2017. One of the direct predictors which affect nutritional status is eating behavior. The research aims to describe perceived body image and eating behavior of high school female adolescents and find the correlation between these variables.

**Method:** The research applied a cross-sectional design and chose respondents purposively with inclusion criteria i.e., female adolescents at 1<sup>st</sup> and 2<sup>nd</sup> grade from four different high schools in Palembang. About 138 respondents completed the questionnaires of body image and eating behavior. The data were analyzed using a chi-square test on SPSS Application.

**Results:** The majority of respondents (55.80%) were not satisfied with their own body shape. Above 15% were on a diet. However, the respondents' perception of body image was mostly classified as positive (54.35%), and they also had good eating behavior (56.52%). Body image significantly impacted eating behavior ( $p = 0.035$ ). Those with positive body image are possibly at 2.210 times chances of having good eating behavior (95%CI: 1.112 – 4.391). Female adolescents have to build self-appreciation, not only based on their physical appearance. The health nutritionists should work together with the government to facilitate them to practice healthy eating behavior which may improve their nutrition status.

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### INTRODUCTION

Montessori defines adolescence between 12-18 years old as the stage of exploring one's personality and social sensitivity.<sup>1</sup> During this period, adolescents raise awareness of their environment by showing off their characteristics to make friends. Nonetheless, the environment becomes something that identifies one's personality. Others' opinions towards them are considered important, and they try hard to fulfill what others want to see. Hence, thinking over it may raise a problem on how adolescents respect themselves.

Body shape and people judgment are one of the main issues contended throughout adolescence. The viewpoint that someone and/or others have about their body shape is called body image. Grogan (2016) classifies body image into four areas: global satisfaction, affection, cognition, and behavior.<sup>2</sup> In short, perceived body image is how people see (perceptual), feel (affective), believe (cognitive), and act (behavior) based on their appearance.

Female adolescents are more concerned about body image than male ones.<sup>3</sup> Hence, they might suffer from more depressive symptoms, such as a very strict diet, slimming medication consumption, fasting, excessive exercise, and even surgery. If they ignore the symptoms for long time, it can lead to a vicious cycle of malnutrition resulting in chronic energy deficiency, stunting, and decreased well-being.

Every country has struggled in combatting stunting over the years, including Indonesia. Based on the Monitoring Data of Nutritional Status (PSG) released by the Indonesian Ministry of Health, 29.6% of children under five years old were stunted in 2017.<sup>4</sup> This trend is predicted to increase in line with a mounting percentage of short and very short female adolescents compared to previous years. Moreover, 32% of female adolescents suffer from chronic energy deficiency. The problem becomes more complicated as overnutrition, globally known as the second malnutrition burden, comes to exist. Both under and overnutrition are

included in the priority issues of the six Global Nutrition Targets to be achieved by 2025.<sup>5</sup>

UNICEF has pointed out that inadequate dietary intake is one of two factors that directly causes undernutrition.<sup>6</sup> Nowadays, dietary habits are influenced by increasing socioeconomic degrees which encourage the consumption of fast-food, sweet, salty, and oily food; this contributes to increased obesity rates. On the other hand, female adolescents frequently practice unhealthy eating behavior in order to look "ideal". For example, they reduce portion sizes, skip mealtimes (usually breakfast or dinner), and resist hunger.<sup>7</sup> Recent studies have discovered a significant correlation between body image and eating behavior among adolescents. In 2020, Hadiyuni, Purwani, and Nugrohowati who studied college students found that negative body image encourages bad eating behavior.<sup>8</sup> Conversely, Sulistyan, Huryati, and Hastuti found that body image distortion is not significantly correlated with eating disorders among female adolescents.<sup>10</sup> Considering these divisive results from related studies, this study intended to describe the perceived body image and eating behavior of high school female adolescents in Palembang and analyze the correlation between these variables.

#### METHOD

This study utilized a cross-sectional design that measured both variables at the same time, and it purposively sampled 141 respondents according to some inclusion criteria: female adolescents at 1<sup>st</sup> and 2<sup>nd</sup> grade from four selected high schools in Palembang, South Sumatera, Indonesia. Three of them were excluded since they did not answer all of the questionnaires. Primary data were collected through a questionnaire which consist of 15 questions about body image and 11 questions about eating behavior. Body image was assessed by how they valued body shape, how others appreciated their shape, and the importance of having an ideal shape. Furthermore, eating behavior was observed from how often they did every described item. The response to every question is rated on the Likert scale (four options) per variable. Body image is classified into two groups: positive body image with a score of 42 or above (median) and good eating behavior with a score of 34 or above (median). The correlation between variables was analyzed through chi-square test on the SPSS application. This study has been approved by the Health Research Ethics Committee of the Faculty of Public Health, Universitas Sriwijaya with the approval number 358/UN9.FKM/TU.KKE/2019.

#### RESULTS AND DISCUSSION

Table 1 reported that respondents came from two public (58.70%) and two private schools (41.30%). Their

age varied from 13 to 17 years with the most common age being 15 years old and below (60.14%).

**Table 1.** Respondents' characteristics

Characteristics	n	%
<b>Age</b>		
15 years old and under	83	60.14
Over 15 years old	55	39.86
<b>Type of school</b>		
Public	81	58.70
Private	57	41.30
<b>Experience with menstruation</b>		
Yes	138	100.00
<b>Experience with diet</b>		
Ongoing	23	16.67
Past 1 month	4	2.90
Never	111	80.43
<b>Consumption of slimming products</b>		
Yes	4	2.90
No	134	97.10

In general, nearly half of the respondents were less satisfied with their body shape. Respondents' reflection of weight was largely ideal (44.20%); most perceived their height as "short" or "very short" (38.41%). About 52.17% agreed that they did not feel comfortable with their current body size. (see table 2)

Everyone has their own opinion about their body, but sometimes others reveal their views as well which can be positive or negative. They are based on their perception and feelings of shape, size, and appearance. Female adolescents are highly concerned about their face, skin, muscularity, fitness, and strength.<sup>10</sup> One driving factor that plays a role in forming body image is the influence of mass media which frequently presents models and artists with perfect body shapes as the gold beauty standard.<sup>11</sup> If someone's physical appearance does not fit these standards, body dissatisfaction arises. Women and female adolescents who feel that they are fat and overweight are usually unhappy with this condition and wish to reduce their weight.<sup>12</sup> Furthermore, with limited knowledge and understanding, they might try instant and unhealthy diets.

Earlier studies believed that the female students' self-esteem went along with their body image.<sup>13,14</sup> Body image and self-esteem directly influence each other in terms of feelings, thoughts, and behavior.<sup>15</sup> As long as body image is positive, they will appreciate and love themselves more. Besides their own opinion, adolescents have a need for others' appreciation in their adolescent development.<sup>16</sup> The social environments of their inner family (father, mother, or

sister) and peers are sources of body judgment.<sup>17</sup> Therefore, positive appraisal given by family and friends could influence their body image.

**Table 2.** Respondents' opinions about their body shape

Category	n	%
<b>Self-appraisal on weight</b>		
I am very fat	6	4.35
I am fat	39	28.26
My weight is ideal	61	44.20
I am thin	27	19.57
I am very thin	5	3.62
<b>Self-appraisal on height</b>		
I am tall	29	21.01
My height is ideal	56	40.58
I am short	50	36.23
I am very short	3	2.18
<b>Satisfaction with body shape</b>		
Very satisfied	7	5.07
Satisfied	50	36.23
Less satisfied	70	50.72
Dissatisfied	7	5.07
Do not know	4	2.90

Based on table 3, the female adolescents were very motivated to have a body shape like a supermodel (75.36%), and they agreed they were more confident when having a slim body (56.52%); that was the reason for 16.67% of the

female adolescents going on diet. Nevertheless, over half the respondents (81.16%) did not think their appearance was a big deal. Most of them believed that family (86.23%) and friends (93.48%) would not mind if their weight increases.

Eating behavior responses were divided into four options that describe the frequency of the action within a week (always: 6-7 times, often: 4-5 times, sometimes: 1-3 times, and never: not doing at all). Most respondents only had breakfast sometimes. They did not consume fruits and vegetables more than three times a week. Almost half of the respondents also skipped lunch. A positive point is most of them never limited their food serving, only consumed mineral water, or had one serving of rice to lose weight (see Table 4).

That female adolescents often skip their breakfast commonly occurs. Yushinta and Adriyanto found that about 50.5% of 93 high school female adolescents did not eat any breakfast.<sup>18</sup> Some reasons are intention to diet, school rules of eating fast food, a lack of appetite, and late night meal consumption,<sup>18,19</sup> affecting the nutritional status. The study also found that 38% of participants indicated abnormal body mass index (under or overweight). Many female adolescents may not know why they should have breakfast within two hours after waking up. The American Heart Association (2017) has written that high blood pressure, high cholesterol, and heart disease risks could be decreased by eating breakfast regularly.<sup>19</sup> In addition, breakfast also prevents one from overeating the rest of the day.

**Table 3.** Respondents' answers to perceived body image questionnaire

Perceived body image	Strongly Agree n (%)	Agree n (%)	Disagree n (%)	Strongly Disagree n (%)
I am worried about not having friends if I do not look attractive	8 (5.80)	35 (25.36)	77 (55.80)	18 (13.04)
I feel less attractive than my friends	6 (4.35)	39 (28.26)	80 (57.97)	13 (9.42)
I feel uncomfortable with my current body size	20 (14.49)	52 (37.68)	52 (37.68)	14 (10.14)
I still feel fat even though my friends say I am not	11 (7.97)	45 (32.61)	54 (39.13)	28 (20.29)
I am worried if someone says I am getting fat	24 (17.39)	37 (36.81)	51 (39.96)	26 (18.84)
Having a slim body like a supermodel is my dream	51 (36.96)	53 (38.41)	33 (23.91)	1 (0.72)
I feel more confident if I have a thin body	15 (10.87)	63 (45.65)	57 (41.30)	3 (2.17)
I am afraid that I will gain weight even if only a little	17 (12.32)	38 (27.54)	67 (48.55)	16 (11.59)
My family does not like when I have a meaty body	5 (3.62)	14 (10.14)	85 (61.59)	34 (24.64)
My close friends do not like when I have a meaty body	3 (2.17)	6 (4.35)	95 (68.84)	34 (24.64)
Teachers will pay more attention to me if I am thin	0 (0)	7 (5.07)	79 (57.25)	52 (37.68)
I will have more friends if I am thin	2 (1.45)	7 (5.07)	82 (59.42)	47 (34.06)
My friends stay away from me when I am fat	1 (0.72)	2 (1.45)	78 (56.52)	57 (41.30)
I feel healthier if my body is thin	9 (6.52)	33 (23.91)	81 (58.70)	15 (10.87)
I have no problem with my appearance	47 (34.06)	65 (47.10)	21 (15.22)	5 (3.62)



**Table 4.** Respondent's answer to eating behavior questionnaire

Eating behavior	Always n (%)	Often n (%)	Sometimes n (%)	Never n (%)
I get breakfast in the morning (from 6 until 8 AM)	52 (37.68)	20 (14.50)	61 (44.20)	5 (3.62)
I eat a complete meal (rice, vegetables, and one side dish) for lunch everyday	59 (42.75)	39 (28.26)	37 (26.81)	3 (2.18)
I eat fruits everyday	17 (12.32)	40 (28.98)	79 (57.25)	2 (1.45)
I eat vegetables everyday	32 (23.19)	42 (30.44)	57 (41.30)	7 (5.07)
I eat a complete meal (rice, vegetables, and one side dish) for dinner everyday	37 (26.81)	35 (25.36)	56 (40.58)	10 (7.25)
I skip breakfast	8 (5.80)	34 (24.64)	53 (38.40)	43 (31.16)
I skip lunch	2 (1.45)	19 (13.77)	68 (49.27)	49 (35.51)
I cut the frequency and portion of my food in order to lose weight	14 (10.15)	22 (15.94)	45 (32.61)	57 (41.30)
I will eat when my friends eat	15 (10.87)	30 (21.74)	53 (38.40)	40 (28.99)
For a whole day, I only drink water in order to lose weight	0 (0)	6 (4.35)	14 (10.15)	118 (85.5)
For a whole day, I only eat one serving of white rice to lose weight	3 (2.18)	5 (3.62)	39 (28.26)	91 (65.94)

**Table 5.** Relationship between perceived body image and eating behavior

Perceived body image	Bad eating behavior	Good eating behavior	P-value	PR (95% CI)
Negative	34 (56.67)	29 (37.18)	0.035*	2.210
Positive	26 (43.33)	49 (62.82)		(1.112 – 4.391)

\*Significance level at 95%

The current results are similar to other studies on eating fruits and vegetables as a healthy behavior. Based on the Global School-Based Student Health Survey in 2015, more than 75% of junior and high school female adolescents in Indonesia ate less than five fruit and vegetable servings (categorized as bad), consumed fast food once or more times in a single day (56.17%), and drank carbonated beverages almost every day (57.44%).<sup>20</sup> Adolescents are in the developing phase and more interested in appetizing foods which contain high fat and glucose.<sup>21</sup> However, the Indonesian Ministry of Health Regulation Number 41 about balanced nutrition guide for 10-19-year-old adolescents suggest eating a variety of food that contains energy, protein, and micronutrients, e.g., green vegetables and colored fruits.<sup>22</sup> Based on Tumpeng Gizi Seimbang (TGS), adolescents are recommended to consume about 34 bowls (around 75 grams each) of vegetables and eight glasses of mineral water a day. The Joint FAO recommends fruits and vegetables containing fiber, protein, and micronutrients. A minimum consumption of 400 grams a day will help prevent chronic diseases, including obesity.<sup>23</sup>

Table 5 shows about 75 respondents (54.35%) had positive body image, but only 49 of them had good eating behavior. The correlation value between body image and

eating behavior has proven to be significant ( $p < 0.05$ ). In other words, by having a positive body image, someone is 2.21 times more likely to practice good eating behavior.

Eating behavior in this study was not gradually recalled within 24 hours and seven days a week with detailed information of what and how much participants ate for every single meal. This study only intended to identify general trends in female adolescents' eating behavior patterns. Further research can be done to obtain a clearer picture of female adolescents' eating behavior by using food recall and food frequency questionnaires (FFQ).

## CONCLUSION

Based on this study, most high school female adolescents appreciate their bodies positively. By having a positive body image, female adolescents are 2.21 times more likely to engage in good eating behavior than those with a negative one. Intervention for the cognitive and affective areas, which construct body image, should be addressed to initiate behavioral changes in eating behavior.

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