# THE RELATIONSHIP BETWEEN OBESITY, BODY IMAGE, AND SELF-ESTEEM IN ADOLESCENT

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## Abstract

Obesity has a negative impact on the physical and psychological health of adolescents. One of the major health risks associated with obesity is the increased likelihood of developing chronic diseases such as diabetes mellitus, cancer, and heart disease. Psychologically, disorders of self-concept—such as body image issues and low self-esteem—often accompany obesity. This study aims to examine the relationship between obesity, body image, and self-esteem among adolescents at SMPN 25 Pekanbaru. A correlational design with a cross-sectional approach was used. The research was conducted from November 1, 2024, to February 7, 2025. The subjects were 50 eighth-grade adolescents who were classified as obese, selected using a total sampling technique. Body image was measured using the Multidimensional Body Self-Relations Questionnaire-Appearance Scale (MBSRQ-AS), and self-esteem was measured using the Self-Liking/Self-Competence Scale-Revised (SLCS-R). The results showed that nearly half of the adolescents were in Obesity Class I (42%), more than half had a positive body image (58%), and self-esteem was evenly distributed between low and high (50% each). Statistical analysis indicated a significant relationship between obesity and body image ($p = 0.001$), as well as between obesity and self-esteem ($p = 0.015$). In conclusion, there is a significant association between obesity and both body image and self-esteem in adolescents at SMPN 25 Pekanbaru. Future research may benefit from incorporating educational interventions or media to support adolescent health.

Keywords: Obesity, Body Image, Self-Esteem, Adolescents

## 1. INTRODUCTION

Adolescence is the transition from childhood to adulthood, which begins at the age of 10–13 and ends at the age of 18–22 [1]. The lifestyle and lifestyle of teenagers today has great potential to trigger obesity [2]. Obesity can lead to feelings of inferiority and mental disorders, especially in cases of discrimination against other adolescents [3]. Obesity in adolescents is still a global health issue because it has an impact on the physical and psychological aspects of adolescents [4].

The World Health Organization (WHO) reports that the prevalence of obesity continues to increase significantly in various countries, including Indonesia [5]. The prevalence of obesity in adolescents aged 13-15 years is 4.8%, and 16-18 years old is 4.0%. The prevalence of obesity in adolescents by gender is 13-15 years old, 5.3% for males, 4.3% for females and 3.6% for females for 16-18 years, for females 4.5%. The prevalence of obscenity was based on those living in urban and rural areas, urban 13-15 years old, urban 5.9%, rural 3.6%, urban 16-18 years old 4.8% and rural 3.1% [6].

Obesity can cause various disorders in the body, especially in the subcutaneous tissues, around the organs, and sometimes infiltrate into the organs [7]. Obesity has a detrimental impact on adolescent health and psychology. One of the adverse effects of obesity on health is the risk of developing chronic diseases such as diabetes mellitus, cancer, and heart [4]. The impact of obesity

shows the urgency of adolescent psychological aspects such as body image and self-esteem which play an important role in the formation of self-identity in adolescents.

Psychologically, self-concept disorders, such as body image disorders and self-esteem disorders, are conditions that often appear along with obesity. Teenagers face problems with their view of the ideal body. The formation of adolescent self-image is an important part of identity formation, which is a psychological crisis. Body image is an individual's perception of physical appearance based on an ideal image of a person's desired appearance. Teenagers are considered to have a positive body image if they can feel satisfied with their physical appearance at that time [8].

High self-esteem is described by a person who accepts and values mistakes, defeats, and failures as something valuable and important to him/her. A person with high self-esteem will show positive traits towards others, such as the ability to bounce back and the ability to cope with stress. On the other hand, a person with low self-esteem will easily feel anxious and useless [8].

Previous research has shown that obesity is associated with negative perceptions of the body and low self-esteem, but there is still a research gap in understanding the mechanisms of this relationship holistically among Indonesian adolescents. Most previous studies have focused on medical aspects or prevalence without examining the psychological dimension in depth or integrating a strong theoretical approach [1].

This study uses the framework of the Self-Discrepancy Theory by Higgins in 1987 which explains that the mismatch between actual appearance and ideal appearance can trigger dissatisfaction with the body and lower self-esteem [9]. In addition, the concept of Social Comparison Theory (Festinger (1954) is also relevant to explain how adolescents compare their bodies to social standards or peers, which can worsen self-perception [10].

Based on the preliminary study that has been conducted, with direct observation and interviews with students at SMPN 25 Pekanbaru, out of 10 students, 60% of them are overweight, feel unconfident in their bodies, some students feel cornered, ridiculed, and considered bad in the eyes of their peers and feel ashamed to have a fat body, judge themselves to have physical deficiencies, they feel treated unfairly because they have a fat body. And the other 40% who are not overweight, often compare their bodies to others, are insecure in seeing friends who are more perfect in terms of body and face, consider friends better than themselves, find it difficult to make friends. The purpose of this study is to find out the relationship between obesity and body image and self-esteem in adolescents, so that it can make a theoretical and practical contribution to the development of more comprehensive adolescent health interventions.

## 2. METHODOLOGY

The type of research used is quantitative research with the research design used is a correlation design using *a cross-sectional* study approach. This research was carried out at SMPN 25 Pekanbaru. The population taken in this study is students in grade VIII at SMPN 25 Pekanbaru who are obese as many as 50 people. The sample in this study was 50 students who were obese. The sample technique used is *total sampling,* because the respondents are homogeneous and have the same characteristics. The instruments used in this study were *the multidimensional body selfrelation questionnaire appearance scale (MBSRQ-AS)* and *the self-liking/self-competence scale revised version* (SLCS-R). **The Multidimensional Body-Self Relations Questionnaire Appearance Scale (MBSRQ-AS)** to measure body image, with high construct validity (Cronbach's alpha > 0.80) and has been adapted in the context of Indonesian culture [11]. **Self-Liking/Self-Competence Scale-Revised (SLCS-R)** to measure self-esteem, with adequate reliability (Cronbach's alpha > 0.85) [12].

Data analysis uses the Chi Square Test which is a type of non-parametric comparison test carried out on two variables, where the data scale of the two variables is ordinal. This research has received

an ethical feasibility letter from the ethics commission of the State Umbrella Health Institute No.142/IKES PN/KEPK/II/2025.

## 3. RESULTS

### A. Univariate Analysis

This analysis was carried out to determine the frequency distribution of each variable, namely gender, age, BMI, body image, and self-esteem. The results of the univariate analysis in this study can be seen in the following description:

#### a. Age

**Table 1. Average Age of Respondents**

| Variabel | N | Mean | Median | SD | Min-Max |
|---|---|---|---|---|---|
| Teenage (13-15 years) | 50 | 13.74 | 14.00 | 0.723 | 13-15 |

Based on the results of the analysis, it was found that the average score of respondents was in their middle teens.

#### b. Gender

**Table 2. Distribution of Respondents by Gender**

| No | Category | Frequency (n) | Presentase (%) |
|---|---|---|---|
| 1. | Man | 34 | 68 |
| 2. | Woman | 16 | 32 |
| | **Total** | **50** | **100** |

Based on the results of the analysis, it showed that out of 50 respondents, more than half were men.

#### c. BMI

**Table 3. Distribution of Respondents based on BMI**

| No | Category | Frequency (n) | Presentase (%) |
|---|---|---|---|
| 1. | Risk of Obesity | 16 | 32 |
| 2. | Obesity I | 21 | 42 |
| 3. | Obesitas II | 13 | 26 |
| | **Total** | **50** | **100** |

Based on the results of the analysis, more than half of the respondents were obese I.

#### d. Body Image

**Table 4. Distribution of Respondents based on Body Image**

| No | Category | Frequency (n) | Presentase (%) |
|---|---|---|---|
| 1. | Negative | 21 | 42 |
| 2. | Positive | 29 | 58 |
| | **Total** | **50** | **100** |

Based on the results of the analysis, it shows that more than half experience a positive body image.

e. **Self-Esteem**

**Table 5. *Distribution of Respondents based on Self-Esteem***

| No | Category | Frequency (n) | Presentase (%) |
|---|---|---|---|
| 1. | Low | 25 | 50 |
| 2. | High | 25 | 50 |
| | **Total** | **50** | **100** |

Based on the results of the analysis, it shows that adolescents with low self-esteem and high self-esteem are the same number.

B. Bivariate Analysis

The bivariate analysis used in this study is *the Chi-Square test.* The results of *the Chi-Square test* were used to determine the relationship between obesity and body image and self-esteem in adolescents at SMPN 25 Pekanbaru. The results of the *chi-square test* are said to be effective if *the p value* < 0.05. The results of *the chi-square* test obtained in this study are as follows:

**Table 6. The Relationship of Obesity to Body Image**

| BMI | Body | | Image | | | | *P-Value* |
|---|---|---|---|---|---|---|---|
| | Negative | % | Positive | % | Total | % | |
| Risk of Obesity | 5 | 31.3 | 11 | 68.8 | 16 | 100 | |
| Obesity I | 5 | 23.8 | 16 | 76.2 | 21 | 100 | 0.001 |
| Obesitas II | 11 | 84.6 | 2 | 15.4 | 13 | 100 | |
| Total | 21 | 42 | 29 | 58 | 50 | 100 | |

Based on the results of the analysis, data was obtained that almost all adolescents experienced negative body image in the obesity IMT II category as many as 11 people (84.6%) and almost all adolescents experienced positive body image in the obesity IMT category I as many as 16 people (76.2%). The results of the statistical test obtained a *P-value* of 0.001, so it can be concluded that there is a significant relationship between BMI and body image.

**Table 7. *The Relationship of Obesity to Self-Esteem***

| BMI | Self | | Esteem | | | | *P-Value* |
|---|---|---|---|---|---|---|---|
| | Low | % | High | % | Total | % | |
| Risk of Obesity | 6 | 37.5% | 10 | 62.5% | 16 | 100% | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Obesity I | 8 | 38.1% | 13 | 61.9% | 21 | 100% | 0.015 |
| Obesitas II | 11 | 84.6% | 2 | 15.4% | 13 | 100% | |
| Total | 25 | 50% | 25 | 50% | 50 | 100% | |

Based on the results of the analysis, data was obtained that almost all adolescents experienced low self-esteem in the obesity II BMI category as many as 11 people (84.6%) and more than half of adolescents experienced high self-esteem in the obesity BMI category I as many as 13 people (61.9%). The results of the statistical test obtained a *P-value* of 0.015, so it can be concluded that there is a significant relationship between BMI and self-esteem.

**PEMBAHASAN**

1. **Hubungan Obesitas dengan Citra Tubuh**

The results of the statistical test obtained a *P-value* of 0.001, so it can be concluded that there is a significant relationship between obesity and body image. This is in line with the theory of Self-Discrepancy where there is a difference between the real self and the ideal self which triggers dissatisfaction with the body [9].

Based on research conducted by Hidayatullah (2022) with the title "The Relationship of Obesity to Body Image Disorders, Self-Esteem and Self-Acceptance in Adolescent Girls at SMA Negeri 1 Sampang", respondents with low body image were 32 (78%), with medium body image 6 (15%), with high body image 3 (7%), Adolescent girls who are obese tend to often get negative assessments from their surroundings related to their physical appearance, and the fear of negative judgments from others. So that to eliminate negative judgments from the environment related to the physical, therefore the respondents go on a diet to get an ideal body [13].

Compared to the research of Kelen et al. (2020) at Frater Makassar High School, it was found that severely obese adolescents had a higher negative body image. However, differences in social environment and levels of health awareness can affect outcomes. In this study, some adolescents with obesity I still had a positive body image, possibly due to self-acceptance or social support [14].

Researchers assume that obesity can affect an individual's body image, increasing the risk of mental and emotional disorders, poor eating behavior and physical activity, and that social and cultural factors such as media and peer groups can affect adolescent body image.

2. **The Relationship of Obesity to Self-Esteem**

The results of the statistical test obtained a *P-value* of 0.015, so it can be concluded that there is a significant relationship between obesity and self-esteem. Adolescents with obesity II tend to have low self-esteem. This is in line with the theory of Self-Discrepancy where there is a difference between the real self and the ideal self which triggers dissatisfaction [9].

A study by Nurahmad & Widyana (2024) also found that obesity does not always have a negative impact on self-esteem. This shows the importance of mediating factors such as social support and personality. However, the results of this study support the idea that the increase in obesity rates is directly proportional to the decrease in self-esteem [15]. Research by Sumiyati & Irianti (2021) also shows that being overweight can affect self-perception and lower adolescent self-confidence [4].

Researchers assume that obesity can affect adolescent self-esteem such as negative stigma can affect the development of self-identity as well as social and cognitive factors such as media and peer groups and influence poor eating behavior and physical activity.

The limitation of this study lies in the small sample size and involving only one school, so the generalization of the findings is limited. Moreover, the cross-sectional approach cannot explain the causal relationship between variables.

## 4. CONCLUSIONS

Based on the results of the study, there was a significant relationship between obesity and adolescent body image and self-esteem at SMPN 25 Pekanbaru. This study emphasizes the importance of an interdisciplinary approach in understanding the impact of obesity on adolescent psychological aspects. The practical implication of this study is the need for an intervention program that not only targets weight loss, but also reinforces adolescents' positive body image and self-esteem. Theoretically, these results reinforce the relevance of the theory of Self-Discrepancy and Social Comparison in the context of adolescent obesity. The results of this study support the need for school-based interventions that target improving healthy body awareness, not just appearance. Peer group-based interventions or psychosocial counseling can be effective strategies in improving the mental and physical health of obese adolescents.

## ACKNOWLEDGEMENTS

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