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# Project Base Course Preparation of Psychological Scale

# Body Image Scale

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**Abstract**

*Body Image* is a person's subjective perception of their physical appearance, which is influenced by internal and external factors. When a person receives judgments about himself from others, it will affect a person's judgment of himself. This study was conducted because in early adult women who are overweight, body perception can affect their level of self-satisfaction and mental health. By involving 118 respondents with the criteria of early adult women who are overweight in this study to test the reliability of the Body Image measuring tool (scale). The results of the validity and reliability test show that 10 items are tested to be valid with high reliability. However, the RMSEA, SRMR, and GFI values indicate that the measurement model needs to be further refined to ensure conformity with the data obtained.

**Keywords:** Body Image Scale, Body Image, Overweight

## Introduction

The body is an important aspect for a person in his life. The body is the main thing that a person sees, generally judged by its physical appearance (Yolanda et al., 2021). When a person receives judgments related to himself from others, it will affect a person's assessment of himself (Sumanty et al., 2018). Self-assessment or *Body Image* refers to the complexity of an individual's perception, judgment, and feelings about their own physical appearance. So that this covers various aspects of physical appearance, including body size, body shape, facial features, and other physical attributes (Prawono, 2015).

The ideal body that a woman has is a benchmark in determining her weight. Most women are more confident when they have a good body slim and thin because

according to him with a slender body will be seen well (Sumanty et al., 2018). So when the weight increases, women will look for ways to get their weight back to ideal. The mindset that defines self-beauty is created from different perceptions of physical changes experienced by a person, especially women who feel dissatisfied with certain body parts that make them compare with others (Maulani, 2019). Body Image will show a person's satisfaction with their body parts and physical shape as a whole. Thus, Body Image can be grouped into two types, namely first, positive Body Image, where a person tends to be satisfied with himself, respect himself, take good care of his body, and have confidence (Astini & Gozali, 2021).

Body Image scale measurement is a method to evaluate and measure a person's perception of their own physical appearance. One of the Body Image measurement scales that is commonly used in psychology and related science research is the Multidimentional Body-Self Relations Quesionnaire (MBSRQ) which is a measurement scale developed by Cash. According to Cash (2004) this scale evaluates various dimensions of Body Image, including satisfaction, dissatisfaction, self-judgment, and emotional investment in physical appearance. However, Multidimentional Body-Self Relations Quesinnaire (MBSRQ) has been adapted by Khairani et al. (2012) from Cash's theory which is arranged based on aspects of Body Image, namely: evaluation of appearance, orientation of appearance, satisfaction with body parts, anxiety of becoming obese and categorization of body size.

The importance of studying the Body Image phenomenon because it can help individuals to understand how individual body perceptions are formed and develop affect various aspects of life, including mental health, physical health, interpersonal relationships, media and cultural influences, individual empowerment, and advocacy and social change (Putra, 2015). A person may think that their self-image is a negative form that will be a disturbance in the aspect of

self-image satisfaction that will continue to lead them to more serious mental health problems, such as anorexia nervosa and bulimia nervosa (Saepudin et al., 2022).

The problematicization of the Body Image scale is an acknowledgment of some of the weaknesses or challenges associated with the use of the scale in research or clinical practice. And some of the problems that can arise are subjectivity, inability to capture complex experiences, incompatibility between theory and measurement, limitations in validity and reliability (Purbaningtyas & Satwika, 2021).

This study aims to identify the impact of negative body image by knowing the level of anxiety associated with negative perceptions of the body. To test the reliability of the Body Image measuring device (scale) in the Body Image study in early adult women who are overweight.

**Literature Review**

Cash stated that body image is an individual's experience in the form of perception of his or her body shape and weight, as well as behaviors that lead to the evaluation of the individual's physical appearance (in Ramanda et al., 2019). Meanwhile, Thompson et al. (1999) stated that Body Image is an evaluation of body size, body weight or other aspects of the body that lead to a person's physical appearance. Body Image itself can cause positive and negative impressions, this is appropriate for a person in responding to and considering the Body Image they have.

Burn (in Husna, 2013) argues that Body Image is the image that a person has of himself as a physical being, so that Body Image is often associated with physical characteristics, including general appearance, body size and weight, figure and body shape and body details. Body Image itself is a person's view to assess whether he is satisfied with his body shape or not, this is not only part of the body

but the entire appearance and physique that a person has which includes the state of the face, smoothness of the skin, skin color, height and weight. When a woman's body size or shape is far from the ideal word, the woman no longer likes her own body size or shape.

Based on the theories above, it can be concluded that Body Image is a view of a person in assessing himself that focuses on body shape, body size, appearance, facial condition, skin smoothness, skin color, height and weight where this can look attractive if a person thinks that his body is positive and can also look unattractive if someone considers that his body is negative.

Aspek Body Image

Cash (2004) states that there are 5 aspects of Body Image, namely:

a. Appearance evaluation

Judgment of the body, feelings of attraction or unattractiveness, comfort of the overall appearance.

b. Appearance orientation

Measure a person's attention to their appearance and a person's efforts to improve it.

c. Body area satisfaction

A person's satisfaction or dissatisfaction with certain body parts such as face, hair, thighs, hips, legs, waist, abdomen, muscle appearance, weight, or height, as well as overall appearance.

d. Anxiety of becoming obese (Overweight Preocupation)

Describes anxiety about obesity and awareness of weight that is displayed through real behaviors in daily activities, such as the tendency to diet to lose weight and limit eating.

e. Self-classified weight

How a person looks, perceives, and assesses their weight.

The measurement of Body Image uses a measuring tool that has been adapted by Khairani et al. (2012) which is proposed from the Cash theory and uses a Likert scale questionnaire. This scale consists of 14 questions with a reliability of 0.696. Each item is provided with 5 categories of answer choices, namely SS (Very Appropriate), S (Appropriate), N (Neutral), TS (Not Appropriate), STS (Strongly Inappropriate). Respondents were asked to choose one of the available alternative answers. For favorable scores, SS (Very Suitable) is worth 5, S (Appropriate) is worth 4, N (Neutral) is worth 3, TS (Not Appropriate) is worth 2, and STS (Very Not Appropriate) is 1. As for the unfavorable scores, SS (Very Suitable) is worth 1, S (Appropriate) is worth 2, N (Neutral) is worth 3, TS (Not Suitable) is worth 4, and STS (Very Not Conforming) is worth 5.

**Research Methods**

This research method involves a quantitative approach with a survey research design, where the sample consists of early adult women who are overweight. The Body Image measuring tool developed specifically for this population consisted of 13 items that were evaluated using the discriminatory power method to distinguish different levels of body dissatisfaction, and Confirmatory factor Analysis (CFA) was used to validate the factorial structure of the measuring device. The data was collected using an independent questionnaire, with statistical analysis using JASP for discrimination and CFA, including reliability tests, validity tests. The aim was to test the validity and reliability of the Body Image measurement tool, especially for overweight women, and to understand the factors that affect their self-perception.

**Table.1 Blue Print Body Image Scale**

| No. | Aspects | *Favorable* | *Unfavorable* | Total |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 1 | Performance evaluation | 9 | 4, 11 | 3 |
| 2 | Appearance orientation | - | 1 | 1 |
| 3 | Satisfaction with parts body | 12, 10 | 2, 8 | 4 |
| 4 | Anxiety of becoming obese | - | 3 | 1 |
| 5 | Size categorization body | 5, 7 | 6, 13 | 4 |
| | **Total** | **7** | **8** | **13** |

The results of this study show that the Body Image research instrument developed by the researcher has good validity and reliability, and provides an accurate picture related to Body Image in early adult women who are overweight.

**Results and Discussion**

The results of this study show that the Body Image research instrument developed by the researcher has good validity and reliability, and provides an accurate picture related to Body Image in early adult women who are overweight.

**Uji Korelasi**

| No | P-Value | No | P-Value | No | P-Value |
|---|---|---|---|---|---|
| 1 | 0.057 | 6 | <.001 | 11 | <.001 |
| 2 | 0.935 | 7 | 0.051 | 12 | <.001 |
| 3 | <.001 | 8 | <.001 | 13 | <.001 |
| 4 | <.001 | 9 | <.001 | | |
| 5 | <.001 | 10 | <.001 | | |

**Table. 2 Body Image Validity**

It can be seen from Table.2 the results of the validity test above were obtained from a questionnaire with 1 variable and consisting of 13 items and had been filled in by 118 respondents, it is known that 10 items were tested to be valid because the P-Value results showed a figure of <.001 where the items can be said to be valid if the significance value is <0.05. However, there are 3 items that are invalid because the P-Value value shows a number above 0.05, namely in item 1 which has a P-Value of 0.057, in item 2 which has a P-Value of 0.935, and in item 7 which has a P-Value of 0.051.

**Uji Reliabilitas**

**Frequentist Scale Reliability Statistics**

| Estimate | Cronbach's α | Average interitem correlation |
|---|---|---|
| *Point estimate* | 0.849 | 0.345 |
| 95% CI lower bound | 0.806 | 0.263 |
| 95% CI upper bound | 0.884 | 0.421 |

**Table.3 Gauge Reliability**

It can be seen from Table.3 It is known that the results of the reliability test on Body Image using Alpha Cronbach >0.60, with the point estimate on Alpha Cronbach having a higher value than the base value, which is 0.849 > 0.60 so that the results prove that the items in the questionnaire related to Body Image are declared reliable. With high reliability criteria because of p>0.800. In Table.3, it is known that items that tend to be less consistent are found in items 1, 2, and 7. So if the three items are included in the calculation, then the reliability value is in the medium category, which is 0.769.

**Component Loadings**

| | RC1 | *Uniqueness* |
|---|---|---|
| V6 | 1.422 | 0.557 |
| V3 | 1.342 | 0.577 |
| V4 | 1.271 | 0.769 |
| V8 | 1.247 | 0.793 |
| V11 | 0.919 | 0.728 |
| V5 | 0.652 | 0.989 |
| V10 | 0.407 | 0.898 |
| V9 | | 0.880 |
| V12 | | 1.263 |
| V13 | | 0.992 |

*Note.* Applied rotation method is promax.

**Table.4 Measurement of Aitem Uniqueness**

In Table.4 above shows the uniqueness value for each statement item. An item can be said to be uniqueness if the value is ≥0.6. Based on the results of the analysis of the main components with the promax rotation method, it was found that V6 had the highest loading on the RC1 component with a value of 1,422 and a uniqueness of 0.557, followed by the V3 with a load of 1,342 and a uniqueness of 0.577. The V4 and V8 have a loading of 1,271 and 1,247, respectively, with a uniqueness of 0,769 and 0,793. Furthermore, V11, V5, and V10 showed loading of 0.919, 0.652, and 0.407, as well as uniqueness of 0.728, 0.989, and 0898. Meanwhile, the V9, V12, and V13 display high uniqueness of 0.880, 1.263, and 0.992, without significant loading on the RC1 components. These findings show that the variables V6, V3, V4, and V8 have a strong influence on the main

components of RC1, while V9, V12, and V13 exhibit high levels of unique variance that are not explained by these components.

**Path Diagram**

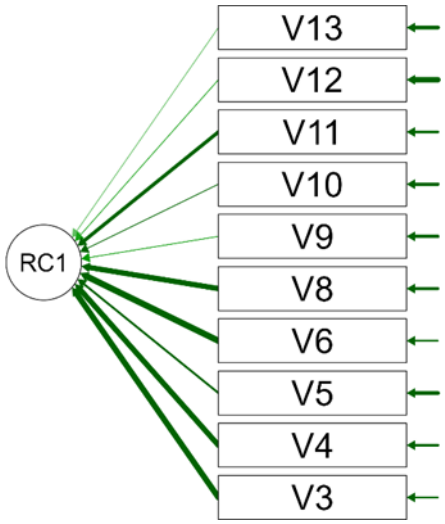


**Diagram.1 Uniqueness Measurement Items**

The diagram above illustrates the relationship between variables (V3 to V13) and RC1 components based on the analysis of the main components. The length and thickness of the line indicate the loading magnitude of each RC1 component variable. The variables V6, V3, V4, and V8 show the strongest connection with RC1, which is illustrated by a thicker line, indicating a higher load. While the V13, V12, and V9 are connected by thinner lines, indicating a weaker or lower loading relationship on the RC1. This indicates that V6, V3, V4, and V8 are the main contributors to the variance described by the RC1 component, while V13, V12, and V9 contribute minimally to the variance.

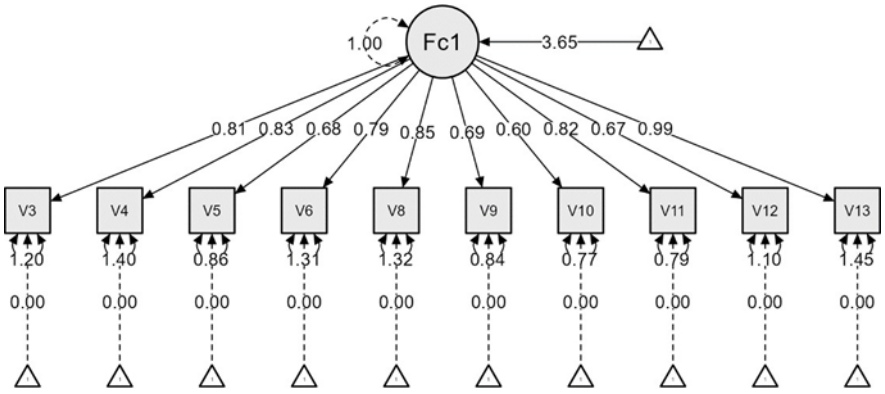


**Diagram.2 Model Plot**

The diagram above shows a path chart depicting the relationship between the indicator variable (V3 to V13) and the latent factor Fc1. The numerical coefficients along the arrow line indicate the magnitude of the factor loading of each variable to Fc1. The highest factor loading is seen in V3 (0.81), V4 (0.83), V5 (0.68), V6 (0.79), V8 (0.85), V9 (0.69), V10 (0.60), V11 (0.82), V12 (0.67), and V13 (0.99).

The numbers below each variable (0.00) represent the unique variance or error of each variable, indicating that the entire variance of the variables is fully explained by fc1. This suggests that Fc1 is a very significant factor explaining the variability in the data, with V13 having the most dominant contribution (highest loading factor 0.99) to fc1, while V10 and V9 having the lowest contribution to Fc1, although still significant. This indication confirms that Fc1 is able to represent the correlation between these variables very well.

**Other fit measures**

| Metric | Value |
|---|---|
| Root mean square error of approximation (RMSEA) | 0.228 |
| RMSEA 90% CI lower bound | 0.205 |
| RMSEA 90% CI upper bound | 0.252 |

| | |
|---|---|
| RMSEA p-value | 0.000 |
| Standardized root mean square residual (SRMR) | 0.311 |
| Hoelter's critical N (α = .05) | 23.694 |
| Hoelter's critical N (α = .01) | 26.781 |
| Goodness of fit index (GFI) | 0.816 |
| McDonald Fit Index (MFI) | 0.318 |
| Expected cross validation index (ECVI) | 3.021 |

**Table. 5 Measurement Fit Indicator**

Table 5 above shows that the RMSEA is at a value of 0.228, which indicates that there is a rejection of the parameters of the measurement model made by the researchers, because the RMSEA value should not exceed 0.08. Then the SRMR value is at 0.311, this shows that this value is higher than the SRMR standard value of 0.05. Then, the GFI value above shows that the value is at 0.816, this indicates that there is a rejection of the minimum and maximum values.

The results of the validity test on the questionnaire related to Body Image in early adult women who were overweight, consisting of 13 items and filled out by 118 respondents, showed that 10 items were tested valid because the P-Value was below 0.001 which means much smaller than the significance threshold of 0.05. This indicates that these items are statistically relevant and can be used to measure the variable in question. However, there are three invalid items, namely item 1 with a P-Value of 0.057, item 2 with a P-Value of 0.935, and item 7 with a P-Value of 0.051. This invalidity shows that these items do not have a strong enough relationship with the variables being measured, so they need to be re-evaluated or even removed from the questionnaire to improve the quality of the measurement.

According to psychometric theory, validity is the extent to which a measuring instrument measures what is supposed to be measured, which is a critical element

in ensuring the accuracy and relevance of research results (Taber, 2018). This validity is also in line with the concept of construct validity emphasized in psychological theory, which demands that the measuring instrument is not only statistically accurate but also theoretically capable of reflecting the psychological construct being measured (Rust & Golombok, 2021). Especially in the context of Body Image in early adult women who are overweight, the validity of the measuring tool is very important to identify accurate body perception and its impact on psychological well-being, where a person views his Body Image positively, the impact will also be positive on himself.

The results of the reliability test using Alpha Cronbach showed a very good value, which was 0.849 which was higher than the baseline value of 0.60. This shows that the questionnaire has a high internal consistency (Tavakol & Dennick, 2011). However, if three invalid items (item 1, item 2, and item 7) are included in the calculation, the reliability value will decrease to 0.769 which is included in the medium category. And in the results of data processing, it was obtained that the RMSEA value of 0.228 shows rejection of the measurement model because the value far exceeds the maximum limit of 0.08. The SRMR value of 0.311 also exceeded the standard limit of 0.05 which shows that this model is not in accordance with the data obtained. And the GFI value of 0.816 shows a rejection of the minimum and maximum value criteria, which indicates that this model needs to be further refined.

In the context of psychological research, reliability is an indicator of confidence that measurement results can be replicated under similar conditions. High reliability indicates that the instrument is consistent in measuring the same construction, while validity ensures that the constructed being measured is what it is supposed to be measured (Nunnally & Bernstein, 1994). The classical theory of the test also emphasizes the importance of a combination of reliability and validity to obtain an accurate and reliable measuring tool (Kline, 2012). In the

context of Body Image in early adult women who are overweight, high reliability and validity ensure that the measure can consistently and accurately reflect the perception of the body and its psychological impact (Cash & Smolak, 2011).

## Conclusion

The results of the validity test on the Body Image questionnaire in early adult women who were overweight showed that 10 out of 13 items were tested to be valid with a P-Value of <0.001, indicating strong statistical relevance. However, three items showed invalidity with a P-Value of >0.05 which indicated a weak relationship with the variables measured. Re-evaluation or removal of these items is necessary to improve the quality of measurement. The results of the reliability test showed high internal consistency with an Alpha Cronbach value of 0.849. However, if invalid items are included, the reliability value decreases to 0.769, where the value is included in the medium category. High reliability signifies that the measuring tool is consistent in measuring the same construction, while validity ensures that what is measured is what it should be. Then, RMSEA, SRMR, and GFI values that do not reach the standard limit indicate a rejection of the measurement model, indicating that this model needs to be further refined.

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