

# A Study Of Personality And Body Esteem Of Healthy, Overweight, And Obese Adolescents

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## Abstract

The intent of the current research was to study the relationship between personality traits and body esteem among healthy, overweight, and obese adolescents. Healthy adolescents have body mass index (BMI) in the range of 17-24.9; overweight adolescents have body mass index in the range of 25-30 and obese adolescents have body mass index more than 30. Adolescence is a period of growth and changes both physically and psychologically. An overweight adolescent faces many challenges in his/her adolescent years because of various factors. Two such psychological factors are personality and body esteem, which have consequential effect on health-related issues. In the present study, a descriptive survey was conducted using Big Five Personality questionnaire and the Body Esteem scale which was administered among students studying in schools of Jaipur. Data analysis was done using IBM-SPSS software and the results were analyzed using correlation and one-way anova. Results revealed that negative emotionality was less exhibited by healthy adolescents as compared to overweight and obese adolescents. Extraversion, Agreeableness, conscientiousness, open-mindedness, and body esteem had significant relationship with the three groups. The present findings suggest that personality traits and body esteem of an adolescent play an important role in body mass index.

**Keywords:** personality, body esteem, obesity, overweight.

## INTRODUCTION

Globally, obesity is causing serious health concern in many countries including India in the last decade. It is an important yet independent factor for cardiovascular diseases which increases the risk of morbidity in children. Obesity in adolescent years has become widely common specially for those children who do not engage in physical activity and consume more calories than needed. A healthy adolescent has a body mass index range of 17-24.9kg/m<sup>2</sup>.

A person is said to be overweight/ obese when his/her body mass index exceeds 25kg/m<sup>2</sup>. Overweight is when the range of body mass index is 25-30, whereas obesity is when the body mass index exceeds 30. These two well-being aspects have become major health problems across the globe. There are variety of socio-cultural, biological as well as psychological factors associated with overweight and obesity. Socio-cultural factors include sex, racial ethnic identity, socio-economic status, which creates complex relationships between the above-mentioned characteristics. Other factors include biological as well as psychological factors. The factors in latter aspect include personality traits, avoidance of emotions, self-esteem, intolerance to stress, low life satisfaction, poor body esteem, low self-worth, self-criticism, negative core beliefs and binge-eating. Two important factors are personality and body esteem which will be the prime focus of this research. Personality is the dynamic characteristic set of behaviours, cognitions, emotions of a person's ability to focus on characteristics which define oneself. Personality has many theories which indicates how personality affects our behaviour. One of the important theories is the trait theory of personality, which was given by Raymond Cattell, who claimed that an individual's personality comprises of traits which are dynamic in nature. Typically, traits can be classified under 5 categories: Openness, agreeableness, extraversion, neuroticism, and conscientiousness. Each trait is a characteristic feature of an individual's ability. Personality traits contribute to health outcomes mainly through their relationship with risk factors like overweight and obesity. Body weight then contemplates our behaviours and lifestyle and hence paves way in how we identify ourselves and others. Obesity and personality have been significantly linked to each other.

The importance of external appearance towards the body are essential elements of an individual's psychological condition. To fulfil the basic desires and functions of body, an individual's mind goes through cycles of cultural and civilization trends. This leads to extreme tiredness and disturbed attitudes towards body image. Body esteem is defined as the combination of thoughts

and feelings one has about their body. It may range from positive to negative experiences or sometimes both depending on the individual and the situation. Bodies are still perceived as representations, objects, and subjects. Although the perceptions of human bodies have changed from being classified or restricted to manifesting the ideal self within the limits of our culture and society. Obesity and body esteem are on the opposite ends of the continuum. Dissatisfaction with physical appearance leads to disturbance in one's psychological processes. Overweight and obese adolescent undergo patterns of depression, mania, anxiety, and mood swings in various social and personal situations. Not only peers, but the living environment (for example school) in which they go daily, they face undesirability and discrimination due to their weight and looks. The first-generation research mainly compared obese and healthy people which revealed a clear correlation between obesity and negative body-image. It is also obvious that body dissatisfaction rates will increase because of the increase in overweight and obese people. People who struggle with obesity in the beginning experience dissatisfaction with their body image. Comparably, if they lose weight, they will experience improvement in body image. Although if they keep on oscillating between weight gain and weight loss, their dissatisfaction stays intact and constant.

## REVIEW OF LITERATURE

The review of literature suggests that personality as well as body esteem have been significantly associated with body mass index of an adolescent.

Catherine and Rikke (2017) conducted a survey on associations of personality with body mass index and obesity in a large community sample. They found that personality and body mass index were significantly correlated with each other. Although obesity was associated to a lesser extent, the associations were different for males and females. Further literature review suggested that individuals high on neuroticism; low on conscientiousness and agreeableness go through cycles of weight gain. Conscious individuals tend to be leaner and have less weight concerns than impulsive individuals who enjoy taking risks and eat unhealthy food on a regular basis.

Wimmelmann and team (2018) found that extraversion, openness, and agreeableness are more of protective factors which indicate these individuals are careful about their diet and manage unhealthy eating habits in stressful situations. Although opposite results have also been found. Overweight and obese adolescents had high extraversion, agreeableness, and conscientiousness due to some reverse psychology reasons. Overweight and obese adolescents tend to force themselves towards societal pressure of having more friends, being extroverts in nature and being good to everyone. They tend to think that if they don't do so, they will be left alone and will fall into cycles of depression. The lifestyle choices of adolescents who scored high on conscientiousness tend to contribute to their healthy weight. When we see literature for negative emotionality, we witness sheer documentation about the opposition that stress and negative emotions like depression and anxiety results in both increase and decrease in appetite. This has led to anonymity in results.

Stunkard and Mendelson (2019) researched over obese people under three areas of body image disorder. For the first one, they perceive their own bodies as unattractive as well as repulsive. Second, they were surrounded by the belief that they are only seen by the outside people through the prism of their body weight. Third, obese people have difficulty maintaining relationships with opposite sex people. In addition to it, these researchers also distinguished predisposed factors of body image disorders which are:

- The disorders were prevalent in people whose obesity began in childhood and adolescent.
- The prevalence of emotional disorders which are the negative assessment of obesity by people who are important for them.

In the current study, personality traits are correlated with healthy, overweight and obese adolescents.

## METHODOLOGY

The purpose of the current study was to investigate the relationship between the five personality traits and body esteem among healthy, overweight, and obese adolescents. For this purpose, a descriptive survey was conducted across schools of Jaipur. A sample size of 350 students was taken and the inclusion criteria for all was 14-19 years of age and they were from English medium background. A questionnaire was developed which comprised of socio-demographic details like age, weight, height, school, grade, diet preference, exercise status, mode of education (single/co-ed) and Big Five Personality Inventory (BFI-XS-2) and The Body Esteem Scale (BES). The BFI-XS-2 was developed by Christopher J.Soto the scale has 30 items distributed among five subscales of extraversion, agreeableness, conscientiousness, open-mindedness, and negative emotionality. All the items are on five-point likert scale which ranges from disagree strongly; disagree a little; neutral, agree a little and agree strongly. The instructions given to administer the test are simple and are as follows- "Here are several characteristics that may

or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

The Body Esteem Scale was developed by Franzoi and Shields (1984). It consists of 35 items which are gender specific measure for body esteem. It has five subscales- Physical Attractiveness (PA) for males or Sexual Attractiveness (SA) for females; Upper Body Strength (UBS) for males or Weight Concerns (WC) for females and lastly Physical Condition (PC) for both the genders. The final score for body esteem for both males and females was calculated by adding the scores of individual factors and then the average was taken out to obtain one single score of each participant.

After the administration of the test, the body mass index of the students was calculated using the body mass index formula which is mass (kg) divided by height<sup>2</sup> (m). Further they were segregated into three categories of healthy, overweight, and obese. Lastly, the statistical analysis was done according to the manual and the descriptive analysis with correlation and anova was done using IBM-SPSS version 29.

## RESULTS

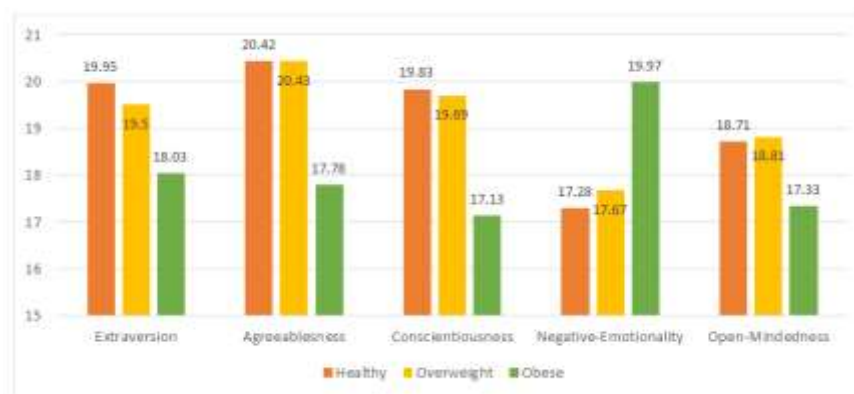
The statistical analysis was done, and the observed results were as follows-

Descriptive Statistics -Mean (*M*), standard deviation (*SD*) of socio-demographic details, personality traits and body esteem of healthy, overweight, and obese adolescents. This was then followed by correlational analysis to understand the relationships between the variables and Body Mass Index.

**Table 4.1.** Means and Standard Deviation of personality traits and body esteem of healthy, overweight, and obese adolescents.

Variables	Healthy ( <i>n</i> = 165)		Overweight ( <i>n</i> = 113)		Obese ( <i>n</i> = 72)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Extraversion	19.95	3.37	19.50	3.16	18.03	4.59
Agreeableness	20.42	4.21	20.43	4.09	17.78	5.66
Conscientiousness	19.83	2.88	19.69	3.37	17.13	4.42
Negative-Emotionality	17.28	3.60	17.67	3.77	19.97	5.03
Open-mindedness	18.71	2.75	18.81	2.85	17.33	2.61
Body Esteem	44.88	9.17	44.90	10.24	33.00	15.0

There was a total of 181 males (51.7%) and 169 (48.3%) females. The mean age of the sample was 16 (41%). 116 adolescents were in XII (33%) and 105 were in XI (30%) and the remaining students were distributed among IX and X grade. There were 165 healthy (47.1%); 113 overweight (32.3%) and 72 obese (20.6%) adolescents in the total sample. Since majority of the sample was healthy, 184 did exercise at least four hours per week (52.6%). Majority of the sample was vegetarian (53.1%) when asked about their diet preference. They were enrolled in co-education (63.1%).



**Figure 4.1** Graphical Representation of Mean Scores of Personality traits of healthy, overweight, and obese adolescents.

As presented in Table 4.1 and Figure 4.1, the computed means indicate that overall, the three groups (healthy, overweight, and obese) have slightly different means in terms of personality and its facets.

Healthy adolescents have higher extraversion ( $M= 19.95, SD = 3.37$ ) than overweight adolescents ( $M= 19.50, SD =3.16$ ) than obese adolescents ( $M=18.03, SD = 4.59$ ).

Similar results can be seen for the trait of agreeableness as healthy adolescents ( $M= 20.4, SD = 4.21$ ) and overweight adolescents ( $M= 20.4, SD = 4.09$ ) have same means. But obese adolescents ( $M= 17.78, SD = 5.56$ ) have lower means than both the groups.

For the trait of conscientiousness, healthy adolescents have the highest mean ( $M= 19.83,SD =2.88$ ). Overweight adolescents have slightly less mean ( $M=19.69, SD = 3.37$ ) and lastly obese adolescents have the lowest mean ( $M=17.13, SD = 4.42$ ).

For the trait of negative-emotionality, healthy adolescents have the lowest mean ( $M= 17.28, SD = 3.60$ ). Overweight adolescents have slightly higher mean ( $M= 17.67, SD = 3.77$ ) whereas obese adolescents have the highest mean for the trait of negative emotionality ( $M= 19.97, SD = 5.03$ ).

Furthermore, when it comes to the trait of open-mindedness, healthy adolescents have slightly low mean ( $M= 18.71, SD = 2.75$ ) than overweight adolescents ( $M= 18.81, SD = 2.85$ ). But the lowest mean is of obese adolescents for open-mindedness ( $M= 17.33, SD = 2.61$ ).

Lastly, the body esteem facet also follows similar trend when it comes to the three groups of healthy, overweight, and obese adolescents. The mean is slightly less for healthy adolescents ( $M= 44.88, SD = 9.17$ ) as the highest mean is of overweight adolescents ( $M=44.90, SD = 10.24$ ) and lowest for obese adolescents ( $M=33.00, SD =15.0$ ).

**Table 4.2** Correlational Analysis for Personality Traits and Body Esteem for Healthy, Overweight an Obese adolescents.

Variables	Healthy	Overweight	Obese
Extraversion	-.112	-.137	-.344**
Agreeableness	-.098	-.183	-.336**
Conscientiousness	-.132	-.114	-.288*
Negative-Emotionality	.002	.204*	.302**
Open-mindedness	-.032	-.145	-.026
BES	-.230**	-.356**	-.353**

Note. \*  $p < .05$ . \*\*  $p < .01$ .

Table 4.2 demonstrated the correlations between Body Mass Index, Personality traits and Body Esteem among healthy, overweight, and obese adolescents. The findings indicate that obese adolescents have significant negative correlation with the trait of extraversion ( $r = -.344, p < .01$ ). Similar results have been obtained as obese adolescents have significant negative correlation with the trait of agreeableness ( $r = -.336, p < .01$ ). Likewise, obese adolescents have significant negative correlation with the trait of conscientiousness ( $r = -.288, p < .01$ ). When it comes to the trait of negative emotionality, overweight ( $r = .204, p < .05$ ) and obese adolescents ( $r = .302, p < .01$ ). have significant positive correlation between them.

For the trait of open-mindedness, there was no significant relationship between the three groups of healthy, overweight, and obese adolescents. Lastly, the body esteem scale has significant negative relationship with all the three groups of healthy ( $r = -.230, p < .01$ ), overweight ( $r = -.356, p < .01$ ) and obese adolescents ( $r = -.353, p < .01$ ).

**Table 4.3** Means, Standard Deviation, One-way ANOVA across groups of body mass index on personality and body esteem.

Variables	Healthy <i>M(SD)</i>	Overweight <i>M(SD)</i>	Obese <i>M(SD)</i>	<i>F</i>	$\eta^2$
Extraversion	19.95 (3.37)	19.50 (3.16)	18.03 (4.59)	7.187**	.04
Agreeableness	20.42 (4.21)	20.43 (4.09)	17.78 (5.66)	9.828	.05
Conscientiousness	19.83 (2.88)	19.69 (3.37)	17.13 (4.42)	17.311	.09
Negative-Emotionality	17.28 (3.60)	17.67 (3.77)	19.97 (5.03)	11.842	.06
Open-Mindedness	18.71 (2.75)	18.81 (2.85)	17.33 (2.61)	7.583**	.04
Body Esteem	44.88 (9.17)	44.90 (10.24)	33.00 (15.07)	33.64	.16

Note .\*\*  $p < .001$ .

Table 4.3 demonstrated that group analysis of variance computed for healthy, overweight, and obese adolescents on personality traits and body esteem. The F- ratio was statistically significant on the extraversion trait ( $F = 7.187, p < .001$ ) and the strength of this relationship was  $\eta^2 = .04$ . The mean scores suggest that healthy and overweight adolescents are extroverts in nature.

They tend to interact in their social environment more openly and energetically. They are outgoing and take leadership tasks. Whereas obese adolescents are comparatively reserved and quite in nature.

On the trait of open mindedness, the mean differences were statistically significant ( $F= 7.583, p<.001$ ) and the strength of the relationship was  $\eta^2 =.04$ . The mean scores on the three groups indicate that healthy adolescents are open to ideas and curious about new experiences and situations. They do not feel angry when they are challenged or are wronged. They are polite and humble about their expertise and knowledge.

## DISCUSSION

The objective of the present study was to investigate the relationship between personality traits and body esteem among healthy, overweight, and obese adolescents.

As noticeable from the results, it is safe to conclude that there exists a significant relationship between personality traits and body esteem and body mass index. Correlational analysis revealed significant results on all the subscales of personality and the facet of body esteem scale.

For descriptive statistics, it is clear from the findings that healthy and overweight adolescents are extroverts in nature which means they mirror their happy and social nature with others as compared to obese adolescents who tend to isolate themselves in social gatherings (Brummett and Chapman, 2007). Healthy adolescents and overweight adolescents are agreeable in nature as compared to obese adolescents who tend to put their own needs before others (Sutin and Terracciano, 2016). Furthermore, healthy adolescents are more conscious in nature as compared to overweight adolescents who are slightly less conscious about their dietary habits. Obese adolescents lack order and self-discipline when it comes to eating habits (Roehling and Sullivan, 2009). When it comes to the trait of negative emotionality, healthy adolescents have fewer negative thoughts and ideas as compared to overweight adolescents who can balance negativity way better than obese adolescents who are frequently surrounded by negative emotions and feelings. Lastly, healthy, and overweight adolescents are open to new ideas and information as compared to obese adolescents who do not like to accept and welcome any type of change.

For correlational analysis, it is clear from the results that there exists a significant relationship between personality traits and body esteem of healthy, overweight, and obese adolescents.

In the obese adolescents results indicate that extraversion is significantly negatively correlated with body mass index which indicates higher the body mass index, lower the extraversion. Obese adolescents don't prefer social interaction, being talkative, being assertive, energetic, and outgoing. They prefer to be quiet and reserved (Wimmelmann and Lund, 2018).

In obese adolescents results indicate that agreeableness is significantly negatively correlated with body mass index which indicates higher the body mass index, lower the agreeableness. This indicates that obese adolescents tend to be disagreeable or unwilling to cooperate in social situations (Cloninger, 2018).

In obese adolescents results indicate that conscientiousness is significantly negatively correlated with body mass index which indicates higher the body mass index, lower the conscientiousness. This indicates that obese adolescents are not conscious about their diets and hence gain weight by eating comfort foods (Sutin, 2016). They have disordered eating and drinking patterns (Rhodes & Smith, 2006).

Results indicate that negative emotionality exhibited positive correlation with obese adolescents which indicates higher the body mass index, higher the negative emotionality. This implies that obese adolescents have high negative emotions like stress, depression, and anxiety. Emotional dysregulation occurs which results in emotional eating, hence higher body mass index. Adolescents who are unable to regulate their emotions, have difficulty in adjusting through various situations of life (Jonnes & Kauffmann, 2019).

Lastly, results indicated that open-mindedness exhibited negative correlation with healthy, overweight, and obese adolescents which implies that higher the body mass index, lower the open-mindedness. This indicates that healthy adolescents show high traits of openness which are receptiveness, willingness towards perspectives and to try out new experiences. On the other hand, overweight and obese adolescents tend to be close-minded. They consider their own viewpoints and usually do not prefer new experiences and adventures (Wimmelmann & Lund, 2018).

Also, results indicated that body esteem also revealed significant negative correlation which implies that higher the body mass index, lower the body esteem. This indicates healthy adolescents have positive body esteem as compared to higher body mass

index adolescents who are overweight and obese. Adolescents with high body mass index on the body esteem scale rated their bodily appearance significantly more negative as compared to adolescents with normal body mass index (Weinberger & Kersting, 2016).

For anova, based on the findings obtained, a significant difference was observed across three groups of adolescents categorised based on body mass index which are healthy, overweight, and obese on the variables of personality and body esteem. With reference to Table 4.3, comparing means of personality traits, healthy and overweight adolescents scored highest on agreeableness ( $M= 20.42$  and ( $M= 20.43$ ) respectively and lowest on negative-emotionality ( $M= 17.28$ ) and ( $M= 17.67$ ) respectively. Whereas obese adolescents scored highest on negative-emotionality ( $M= 19.97$ ) and lowest on conscientiousness ( $M= 17.13$ ). This implies that healthy and overweight adolescents do not differ much when it comes to personality of an adolescent. They possess similar characteristics in spite being overweight. Whereas obese adolescents differ significantly with both the groups in terms of not only personality but also body esteem (as obese adolescents scored lowest on body esteem ( $M= 33.00$ ) (See Table 4.3).

## SUMMARY AND CONCLUSIONS

An effort was made to investigate the relationship between personality traits and body esteem among healthy, overweight, and obese adolescents using Big five personality questionnaire and Body Esteem Scale with socio-demographic details of 350 students comprising of 14-17 years of age. The body mass index was calculated using body mass index formula and the results were analyzed using descriptive statistics and correlation using IBM-SPSS software. The results indicated high means for healthy adolescents on the traits of agreeableness, extraversion, conscientiousness, and open-mindedness. Low means for healthy adolescents on the traits of negative emotionality. The correlational analysis revealed significant negative relationship between body mass index and extraversion; body mass index with agreeableness; body mass index with conscientiousness; body mass index with open-mindedness and positive significant correlation with negative emotionality. This implies that healthy body mass index is an indicator of high agreeableness, high extraversion, high conscientiousness, high openness, and low negative emotionality. Lastly, there was also negative significant correlation between body mass index and body esteem of healthy, overweight, and obese adolescents. This implies that body mass index is also a predictor of body satisfaction. Adolescents in their growing years nowadays, tend to idealize perfection. They are prone to factors in the environment which glamorize perfect figure, confidence, vocabulary, experience, adventure and many more. This might be a generation effect or the upbringing of parents who are more aligned towards societal norms and appearance. Nevertheless, change is a part of life and must be welcomed at all phases of life.

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