

**Body Esteem, Depressive Symptoms, and Academic Performance in Adolescent Girls and
Boys**

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Abstract

The study sought to understand the relationship between body esteem, depressive moods, and academic achievement among adolescents. No prior study examined the relationships between body esteem, depression, and academic achievement by gender. This study aimed to investigate whether gender differences exist in 1) the relationship between body esteem and academic performance, 2) the relationship between depressive symptoms and academic performance, and 3) the relationship between body esteem and depressive symptoms. The analyses yielded evidence that suggested the possibility of gender differences in the relationship between measures of body esteem and weighted GPA and in the relationship between measures of body esteem and depressive symptoms. A positive correlation between general body esteem and academic performance was found only in boys. Negative correlations between all measures of body esteem and depressive symptoms were only found in girls.

Keywords: body esteem, depressive moods, academic achievement, adolescents, mental health

Introduction

Academic achievement is one of the central challenges faced by the adolescents. Students who have good academic performance at school tend to have more career opportunities in the future (Zheng et al., 2020), whereas low academic achievement is associated with mental health problems (DeSocio & Hootman, 2004), increased risk for substance use (Fothergill et al., 2008), and increased suicidal attempts (Sörberg Wallin et al., 2017). Given the significance of academic achievement to adolescents, it is important to investigate the factors that can potentially improve or hinder academic performance.

Self-esteem, characterized as an individual's global evaluation of his or her overall worth as a person, is relevant for a number of important personal and social life outcomes (Steiger et al., 2014). For example, research has shown that self-esteem is associated with academic achievement (Zheng et al., 2020). However, most previous research focused on global self-esteem and academic self-esteem but neglected domain-specific self-esteem not pertaining directly to school such as body esteem. Global self-esteem refers to the general feelings we have about ourselves. Domain-specific self-esteem reflects a person's self-evaluation regarding a specific domain; for instance, body esteem refers to how people evaluate their body due to physical appearance, weight, and evaluations from others (Mendelson et al., 1997).

The past research has at least two gaps. First, although a meta-analysis found a consistent and favorable influence of positive self-beliefs on academic achievement (Valentine et al., 2004), however, broadly defined (i.e., global) self-beliefs or self-esteem cannot adequately represent the diversity of content-specific domains of self (Marsh, 1993). Second, although the reciprocal relationship between academic self-concept and academic achievement has been documented

(Marsh & Craven, 2006), it is crucial to understand how parts of self-concept other than academic competence impact students' achievement in the context of school. Parts of self-concept may be arranged hierarchically according to individual experiences and particular situations (Shavelson et al., 1976). Since adolescents experience great changes in their body weight and physical appearance during the pubertal transition, the possibility exists that physical attributes may be placed in the top hierarchy of their self-concept and play a more significant role in all parts of their lives than in any other time period. The existing literature has explored negative body concepts among teens, establishing the effect of appearance and weight dissatisfaction on a number of important outcomes, including academic performance (Aimé et al., 2016; Paxton et al., 2006). However, there is a lack of research on the potential relationship between body esteem (i.e., a comprehensive and neutral evaluation of one's body image due to physical appearance, weight, and evaluations of others) and important outcomes such as academic achievement. Moreover, the vast majority of the prior research has not examined how gender may play a role in the relationship between body esteem and academic performance. It is unknown whether the negative relationship between poor body image and academic performance applies to both genders (male and female) or female/male only. Therefore, it is important to investigate the relationship between body esteem and academic performance by gender.

The literature has extensively looked at the relationship between academic performance and depression. While some have argued that poor academic performance predicts depression (Sörberg Wallin et al., 2018), others argue that depressive symptoms predict low academic performance (Haines et al., 1996; English et al., 2016). Few studies took gender into consideration, and the ones that controlled for gender mostly focused on girls. For instance, one study that found no correlation between academic performance and depressive mood included

only girls (Aimé et al., 2016). Given the potential gender differences, therefore, it is important to investigate the relationship between academic performance and depressive symptoms by gender.

The literature has linked measures of body esteem to depression among adolescents. Prior studies showed that adolescents' perception of their poor physical appearance and body dissatisfaction predict depressive symptoms (Steiger et al., 2014; Paxton et al., 2006). It was documented that body esteem, measured by Body Esteem Scale for Adolescents and Adults (BESAA), predicts depression (Jónsdóttir et al., 2008). While it was shown by previous literature that women have significantly lower body esteem and higher depression when compared to males (Davis & Katzman, 1997), few studies systematically examined the gender differences in the relationship between body esteem and depression. Among the studies that investigated gender differences, most of them focused on girls and found evidence that poor perceived body images were related to depressive mood (Aimé et al., 2016). However, it is unclear whether the negative relationship between body esteem and depressive symptoms applies to boys. Therefore, it is necessary to analyze the relationship between body esteem and depressive symptoms by gender.

In conclusion, the literature indicates that poor body image is linked to worse academic performance and more depressive symptomatology. There is also a negative impact of depressive symptoms on academic performance found in prior studies. However, no prior study has examined the relationships between body esteem, depression, and academic achievement by gender. Studies have found that girls are at higher risk for developing depressed moods and that girls have greater depression symptoms compared to boys (Petersen et al., 1991; Patil et al., 2018). In addition, girls in general have higher levels of academic achievement and obtain higher grades than boys in high school (Fortin et al., 2013; Marsh et al., 1985). Given the gender

differences in these important outcomes, it is crucial to address the potential gender differences in the relationship between body esteem, depression, and academic achievement. To address this lack of knowledge, this study aims to investigate whether gender differences exist in 1) the relationship between body esteem and academic performance, 2) the relationship between depressive symptoms and academic performance, and 3) the relationship between body esteem and depressive symptoms.

Method

Participants

Data came from a subset (Cohort 2) of the ARCHIVE study (Prinstein, 2010). ARCHIVE collected data from February 2009 until April 2017, at local high schools in Chapel Hill, North Carolina. The original sample size was 172; after excluding the participants with missing values in the targeted variables (body esteem, depressive symptoms, weighted GPA), the sample size was reduced to 81. Participants included in the final sample have a mean age of 15.3. The adolescent participants are broadly representative of the Chapel Hill population concerning gender, ethnicity, and race distribution, and education level of their parents. The sample includes more women (53.1%) than men (46.9%). The ethnic and racial background of the sample is 37% White, 28.4% African American, 23.5% Hispanic, 1.2% Asian, and 9.9% of mixed or other ethnicity. The majority of the participants' parents (66%) did not hold a college degree (see **Table 1** for sample demographics).

Measures

Body Esteem. Body esteem of adolescents in this study was measured with 23 items (9 negative and 14 positive items) from the Body-Esteem Scale for Adolescents and Adults

(BESAA; Mendelson et al., 1997). According to Mendelson et al., body esteem (BE) comprises three dimensions: BE-appearance (“feelings about one’s general appearance”), BE-weight (“feelings about one’s weight”), and BE-attribution (“evaluations attributed to others about one’s body and appearance”). Participants rated each item on a five-point Likert scale, ranging from 0 (“never”) to 4 (“always”). Studies have shown that the scale used on BESAA has good model fit statistics and exhibits both internal consistency and test-retest reliability (Cragun et al., 2013; ARSLAN et al., 2020). Following the validating scoring method of Mendelson (Mendelson et al., 1997), positive items include statements such as “I am satisfied with my weight.” Negative items include statements such as “Weighing myself depresses me.” For the purpose of this study, the scores of each response were summed; when calculating the sum, the positive items were treated as positive, whereas the negative items were treated as negative. The total possible score of an individual’s body esteem ranges from -36 (all the negative items being marked -4 and positive items 0) to 56 (all positive items being marked 4 and negative items 0). The average general body esteem score for the total sample is 23, with no significant difference between girls and boys; the averages of the sub-scales in the total sample are the following: 5 for BE-appearance, 10 for BE-weight, 11 for BE-attribution, similarly with no significant difference between girls and boys (see **Table 2** for the report on body esteem scores by gender).

Depressive Symptoms. Depressive symptoms were measured with 32 items from the Mood And Feelings Questionnaire (Item 19 —“I thought about killing myself.”— was removed from the original questionnaire). The Mood And Feelings Questionnaire (MFQ) is a 33-item questionnaire assessing depressive symptoms over the past 2 weeks, with responses rated on a 3-point scale (0 = *not true*, 1 = *sometimes*, and 2 = *true*) (Costello & Angold, 1988). The MFQ is based on DSM-III-R symptom criteria and has been recommended by the National Institute for

Health and Clinical Excellence for the screening of depression in children and adolescents (Thabrew et al., 2018). For this study, the scores of each item were summed, resulting in a scale ranging from 0 to 64. The mean score across all the participants is 14, with no significant difference between girls and boys (see **Table 2** for scores reported by gender). The literature has commonly reported a score ≥ 29 to be predictive of clinically significant depression (Burlison Daviss et al., 2006). In this study, there are 12 participants whose scores are greater than 29 out of the total scores, of which 4 are boys and 8 are girls (the difference is not significant).

Academic Performance. In this study, academic performance was measured in terms of weighted GPA. Weighted GPA is measured in Chapel Hill High Schools on a scale ranging from 0 to 5.0, with harder classes earning the higher designation. An A in a standard course is equivalent to a 4.0 GPA, while an A in an advanced course is equivalent to a 5.0 GPA. In the original data, the weighted GPA of three years (year 1 to year 3) in high school was included. For this study, the weighted GPA for three years was averaged for each participant to get one general indicator of the student's academic achievement. The mean weighted GPA for all the participants is 2.87 with a standard deviation of 0.96. Although girls have a higher weighted GPA on average than boys, the difference is not significant (see **Table 2** for details).

Data Analysis

Pearson-Product Moment Correlation tests were conducted using SPSS to examine the general relationships among variables (see Table 3). Additionally, relationships were also examined among different sub-scales of body esteem and weighted GPA, and depressive symptoms scores. Next, correlational tests were conducted separately by gender (see Table 4 & Table 5). Scatterplots were developed to depict the relationships between variables of interest.

Results

Relationship Between Body Esteem and Academic Achievement

Total Sample (Table 3). Body esteem and academic performance were positively correlated ($r = 0.289$, $p < 0.01$), such that a higher level of body esteem was correlated with a higher weighted GPA when considering the whole sample together.

The present study also examined the correlations between weighted GPA and each sub-scale of body esteem (BE_Appearance, BE_Weight, and BE_Attribution). Among these sub-scales, BE_Appearance and BE_Attribution were found to be positively correlated with GPA ($r = 0.243 - 0.319$, $p < 0.05$), whereas BE_Weight was not significantly correlated with GPA. In other words, the better one felt about one's appearance (BE_Appearance), the higher one's GPA; similarly, the better the evaluation of one's body and appearance attributed to others (BE_Attribution), the higher one's GPA. However, one's weight satisfaction was not correlated with one's weighted GPA.

As expected, general body esteem was correlated with each of its three sub-scales: BE_Appearance, BE_Weight, and BE_Attribution ($r = 0.686 - 0.890$, $p < 0.01$; see Table 3). Among the three sub-scales, each was significantly correlated with one another ($r = 0.397 - 0.635$, $p < 0.01$; see **Table 3** for details).

By Gender

Boys (Table 4). For male students, consistent with the total sample, general body esteem was significantly correlated with academic performance. The higher the general body esteem, the higher the boys' weighted GPA. Among the three sub-scales, only BE_Attribution was positively correlated with GPA ($r = 0.458$, $p < 0.01$). In other words, for boys, the better the evaluation of

one's body and appearance attributed to others, the higher GPA. Feeling about the general appearance and weight satisfaction were not related to academic achievement in boys.

Girls (Table 5). When looking at the relationship between measures of body esteem and academic performance for female students only, no significant correlations were observed. In contrast to the total sample, none of the measures of body esteem, including general body esteem and three sub-scales, were significantly related to weighted GPA for girls.

See **Figure 1** for scatterplots depicting the relationship between overall body esteem and weighted GPA in the entire sample and separately by gender.

Relationship Between Depressive Symptoms and Academic Achievement

There were no significant relationships between depressive symptomatology and weighted GPA either for the total sample or when examined separately by gender (see **Figure 2**).

Relationship Between Body Esteem and Depressive Symptoms

Total Sample. Lower body esteem was linked to more depressive symptoms ($r = -0.312$, $p < 0.01$), indicating that depressive symptoms were negatively correlated with body esteem for high school students. Among the three sub-scales of body esteem, BE_Appearance ($r = -0.307$, $p < 0.01$) and BE_Weight ($r = -0.259$, $p < 0.05$) were significantly correlated with depressive symptoms but not BE_Attribution. In other words, a lower score on feelings about perceived general appearance was associated with more depressive symptoms ($r = -0.307$, $p < 0.01$). Similarly, less satisfaction with body weight was associated with more depressive symptoms ($r = -0.259$, $p < 0.05$). However, evaluation of one's body and appearance attributed to others was not related to one's depressive moods.

By Gender

Boys (Table 4) Among boys, there was no significant correlation between depressive symptoms and general body esteem, and none of the sub-scales of body esteem were associated with depressive symptoms.

Girls (Table 5). When looking at the relationship between depressive symptoms and general body esteem for girls, a significant correlation was found ($r = -0.448$, $p < 0.01$), such that greater depressive symptoms were associated with lower overall body esteem. All three sub-scales of body esteem were found to be negatively correlated with depressive symptoms among girls ($r = -0.304$ — 0.454 , $p < 0.05$; see **Table 5**).

See **Figure 3** for scatterplots depicting the relationship between overall body esteem and depressive symptoms in the entire sample and separately by gender.

Discussion

This study sought to address the literature gap where there was a lack of knowledge between domain-specific self-esteem—body esteem—and academic performance. The analyses yielded evidence that suggested the possibility of gender differences in the relationship between measures of body esteem and weighted GPA and in the relationship between measures of body esteem and depressive symptoms. First, the positive correlation between general body esteem and academic performance only held for boys. Specifically, it was BE_Attribution (evaluation of one's body and appearance attributed to others) that was correlated with academic performance in boys. Second, the negative correlations between all measures of body esteem and depressive symptoms only applied to girls. In particular, general body esteem and its three sub-scales were all significantly correlated with depressive symptoms in girls.

In contrast to the past literature that showed significant gender differences in academic achievement and depressive levels in which girls were significantly higher than boys on both GPA and depressive scores (Davis & Katzman, 1997; Fortin et al., 2013), the present study did not find significant gender differences in depressive symptoms scores, measures of body esteem, and weighted GPA. However, this investigation found the possibility that gender differences existed in the relationship between measures of body esteem and weighted GPA and in the relationship between measures of body esteem and depressive symptoms.

Body esteem and GPA. There was a significant correlation between general body esteem and weighed GPA for the total sample, indicating that the higher one's body esteem, the higher one's GPA. It makes intuitive sense that if we feel positive about ourselves, in this case—our body, we may have a higher level of self-efficacy for completing school tasks (i.e., assignments and tests) and be more confident in our ability to succeed in school. Examining the relationships between sub-scales of body esteem and weighted GPA in the total sample, the present study found that general feelings about one's appearance and evaluations of others were significantly correlated with GPA, whereas weight satisfaction was not. The possibility of gender differences was also observed in the relationship between body esteem and weighted GPA. In the current study, measures of body esteem in girls, including general body esteem and the three sub-scales, were not correlated with GPA. Among the body esteem sub-scales, boys' weighted GPA was only correlated with BE_Attritions (perception of evaluations attributed to others about one's body and appearance) but not with the other two body esteem sub-scales (BE_Appearance and BE_Weight). The correlation between overall body esteem and weighted GPA observed in the total sample seemed to be evident only in boys. Sub-scale analyses showed that among the

measures of body esteem, it was mainly BE_Attribution (perception of evaluation of one's body and appearance attributed to others) that was correlated with academic performance in boys.

Academic performance plays an important role in students' social life, and academic comparisons exist between peers (Schunk & Pajares, 2002). The fact that, among sub-scale measures of body esteem, only perception of evaluation from others is correlated with GPA suggests that boys may place great importance on peer acceptance. When boys receive good evaluations from their peers about their bodies and appearance (i.e., BE_Attribution), they may feel at a higher social status. According to self-consistency theory (Lecky, 1946), adolescent boys will try to maintain a high social status. Research has shown that getting higher grades improves peer acceptance and peer group status (Véronneau et al., 2010). Therefore, it is possible that in order to maintain a positive social image, boys will intend to achieve a higher GPA to let their peers know about their achievements. While speculative, better academic performance observed in boys may also lead to higher BE_Attribution. When boys have a high GPA, they may receive a high social perception of personal worth and thus perceive a higher evaluation from others about their body and appearance (i.e., BE_Attribution).

However, the positive relationships between body esteem (general body esteem and BE_Attribution) and weighted GPA applied only to boys but not girls. It is possible that when attaining high grades, boys and girls are driven by different motivations. It has been found that girls' academic performance is significantly related to beliefs in their own instrumentality for success (Ghee & Crandall, 1968), such that girls believe that their academic achievements depend on their own perceptions of what would count as important factors that can affect their grades (Graen, 1969). For instance, if girls believe that confidence is responsible for their grades, they may demonstrate a high correlation between confidence levels and performance, such that

when they feel extremely confident in a task, they will achieve a high score. It is possible that girls do not perceive body esteem as having direct effects on their grades, thus showing no association between measures of body esteem and weighted GPA.

Body Esteem and Depressive Symptoms. A significant, negative relationship existed between depressive symptoms and body esteem in the total sample. This finding was consistent with a prior longitudinal study that showed when people have low body esteem, they will develop more depressive symptoms (Steiger et al., 2014), and it also fits into the negative relationship between general self-esteem and depression (Orth et al., 2012). When examining the relationship separately by sex, the effects diverged from the one for the total sample. The correlations between depressive symptoms and measures of body esteem, including general body esteem and the three sub-scales, were significantly negative for girls but not for boys. It may be that girls tend to define themselves in terms of physical appearance and body image, internalizing the social standards for females (i.e., thinness), but boys do not (Vartanian, 2009). Thus, when girls have low body esteem (due to poor perceived appearance, weight dissatisfaction, poor perception of evaluations from others about their appearance and weight, or all the above), they may feel anxious and depressed because of their perceived failure to reach beauty standards in the culture. Higher levels of depressive symptoms observed in girls may leads to lower levels of body esteem in all subscales (BE_Appearance, BE_Weight, and BE_Attribution). When girls suffer from high depressive levels, they may not be mentally capable of coping with the pubertal changes in their bodies and appearance and unfavorable evaluation from others, thus having lower body esteem (Paxton et al., 2006). In addition, depression has been identified as a risk factor for eating disorders: when girls have more depressive symptoms, they may be more susceptible to eating disorders that can lead to

significant underweight or overweight, which in turn leads to lower body esteem (Puccio et al., 2016).

However, the negative relationships between measures of body esteem and depressive symptoms applied only to girls but not boys. Past research found that body dissatisfaction predicts depressive symptoms in early adolescent girls and mid-adolescent boys (Paxton et al., 2006). Thus, it may be that the periods of adolescents during which boys and girls are sensitive to their body images are different, resulting in different psychological responses to body esteem levels based on gender at a particular time. The possibility exists that at the time when the data were collected in the current research study (i.e., early adolescents), girls were more vulnerable to the negative influence of body esteem on moods when compared to boys.

In conclusion, different attitudes about body esteem may be one reason why gender disparities exist both in the relationship between body esteem and weighted GPA and in the relationship between body esteem and depressive symptoms. Speculatively, girls may consider body esteem (including general body esteem as well as its three sub-scales) as a potential indicator of self-worth: when they have low body esteem, they may be preoccupied with thoughts filled with worthlessness, guilt, and hopelessness (i.e., suffering from depressive symptoms). Boys may treat body-esteem due to perception of evaluations from others (i.e., BE_Attribution) as a social indicator that provides information about social relationships and about social status. It is possible that boys who have perceptions of better evaluations from others about their body and appearance may work hard in order to achieve higher grades in order to maintain high social status and good interpersonal relationships.

Implications

While current interventions in adolescents have focused on improving general self-esteem, knowledge about the existence of correlations between body esteem and weighted GPA and between body esteem and depressive symptoms may give rise to innovative intervention programs involving improvements in body esteem with the aim to improve academic performance and prevent depressive symptoms. Given the potential gender differences in the relationships above that are observed in this study, future policymakers may tailor the interventions to address the unique needs of girls and boys. Specifically, interventions targeting girls should provide guidance on constructing positive views of body images to prevent the development of depressive symptoms. Interventions targeting boys should provide guidance on how to cope with perception of poor evaluation from others about their body and appearance to prevent possible negative influences on GPA. However, future studies are needed to validate the correlational findings in the current investigation to guarantee the effectiveness of such interventions.

Limitations

The present study has several limitations that warrant attention. First, given the number of correlations run in the limited sample size of the current investigation, it is possible that the observed significant correlations are due to Type 1 error. In other words, it is possible that the negative correlations between BE_Attribution and GPA found in boys is not significant in the real-world context. It is also possible that the negative correlations between measures of body esteem (including general body esteem and the three sub-scales) and depressive symptoms observed in girls do not apply to real-world scenarios. Thus, it is important to replicate the study in a larger sample size to validate the findings.

Second, while correlational findings are valuable, they only provide information about the degree of linear relationship present in two variables and cannot test whether one variable affects the other. Regressions with more control variables included, however, can provide a stronger indication of such information by specifying the amount of change in the dependent variable attributed to one unit of change in the independent. This provides predictive power when, for instance, the level of depressive symptoms can be predicted by the level of body esteem. The ability to make predictions may be helpful in measuring the improvement outcomes of interventions. For instance, if the researchers want to lower the depressive levels by a mean score of 3 in one group of adolescent girls, they can keep track of the body esteem levels in the group and measure how much body esteem levels need to increase to reach the goal.

Although the result of this study suggests the possibility of gender differences, using the cross-sectional correlation design, in the relationship between body esteem and weighted GPA and in the relationship between body esteem and depressive symptoms, the directions of the above relationships remain unclear. First, in boys, does high body esteem due to perception of evaluation from others predict higher weighted GPA, does high weighted GPA predict higher body esteem, or is the relationship bidirectional? Second, in girls, do low levels of body esteem (including general body esteem and its three sub-scales) predict more depressive symptoms, do high depressive levels predict lower levels of body esteem, or is the relationship bidirectional? Therefore, it may be worthwhile for future studies to conduct regression analyses using a longitudinal design to explore the relationships between body esteem, weighted GPA, and depressive symptoms more in-depth.

Moreover, it is important to verify the gender differences observed in the relationship between body esteem and weighted GPA and in the relationship between body esteem and

depressive symptoms. In the current study, we found that: 1) Only in boys, body esteem was positively related to GPA (body esteem and GPA are not significantly related in girls) and 2) Only in girls, body esteem was negatively related to depressive symptoms. Future researchers should test whether the gender differences are significant by comparing the strength of the correlation coefficients obtained in boys versus girls.

Third, due to the nature of correlational design, the observed relations in this study may result from the influence of extraneous variables that affect body esteem, weighted GPA, and depressive symptoms. Specifically, the possibility exists that there is a third factor that causes both high BE_Attribution in boys and high weighted GPA in boys and another factor that causes both low body esteem levels and more depressive symptoms in girls. Therefore, future investigations should conduct experimental studies to isolate the effect of body esteem on weighted GPA in boys and the effect of body esteem on depressive symptoms in girls. In addition, it is hard to explain the factors that lead to gender differences not only due to the dearth of research in the related area but also due to the correlational design of the current study. Thus, experiments should be conducted to control for confounding variables and find the reasons behind the gender differences in the relationships between body esteem, depressive symptoms, and weighted GPA.

In this study, body esteem was measured by Body-Esteem Scale for Adolescents and Adults (Mendelson et al., 1997). Given the increasing influence of social media on adolescents' perception of ideal body images, future researchers should adopt other approaches that take sociocultural influences into consideration when measuring adolescents' body esteem (Cusumano & Thompson, 1997). Academic performance was measured in this study by the average value of the first three years' weighted GPA in high school. If possible, future

researchers can assess students' academic performance at different times to gain insights into how one's GPA changes over time. Future studies can also explore other dimensions of academic achievement such as the scores of standardized tests.

Conclusion

The present research contributes to the understanding of the relationship between domain-specific self-esteem and academic performance by focusing on the correlations between body esteem (both global and sub-scale) and weighted GPA. The study found that body esteem and weight GPA are positively correlated in boys but not in girls. This study also found a strong negative correlation between body esteem and depressive symptoms, but only in girls. These results suggest the possibility that gender differences exist in the correlations mentioned above, which deserves further explorations in future studies. It would be important for future researchers to investigate the importance of body esteem in adolescent well-being, given the potential implications of body esteem on academic performance and depressive symptoms.

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Table 1. *Demographic characteristics*

Characteristics	Sample
	N=81
Age, Mean (sd)	15.3 (0.6)
Gender, N (%)	
Female	43 (53.1)
Male	38 (46.9)
Race, N (%)	
African American	23 (28.4)
Asian	1 (1.2)
White/Caucasian	30 (37.0)
Hispanic/Latino	19 (23.5)
Mixed/Other	8 (9.9)
Education, N (%)	Mother's Education / Father's Education
Not college educated	30 (37) / 24 (29.6)
College educated or above	15 (18.4) / 16 (19.8)
N/A ^a	36 (44.5) / 41 (50.6)

^a Participants answered "I don't know" or left the answer blank.

Table 2. Questionnaire results

Characteristic	Total Sample		Boys		Girls	
	Range	N=81	Range	N=38	Range	N=43
Weighted GPA ¹ , Mean (sd)	1.2 - 4.6	2.9 (0.9)	1.2 - 4.6	2.6 (1.00)	1.3 - 4.5	3.1 (0.9)
Depressive Symptoms ² , Mean (sd)	0.0 - 47.0	13.5 (11.9)	0.0 - 47.0	12.24 (11.04)	0.0 - 44.0	14.7 (13.0)
Depressive Symptoms Scores Greater Than 29 ³ , N (%)		12 (14.8)		4 (10.53)		8 (18.60)
General Body Esteem ⁴ , Mean (sd)	-9.0 - 56.0	25.9 (15.0)	-7.0 - 56.0	24.3 (14.6)	-9.0 - 52.0	27.2 (15.4)
BE_Appearance ^a , Mean (sd)	-14.0 - 16.0	4.5 (7.3)	-11.0 - 16.0	3.7 (7.5)	-14.0 - 16.0	5.3 (7.2)
BE_Weight ^b , Mean (sd)	-5.0 - 20.0	10.1 (6.3)	-1.0 - 20.0	10.2 (5.6)	-5.0 - 20.0	10.0 (6.9)
BE_Attribution ^c , Mean (sd)	1.0 - 20.0	11.2 (4.5)	3.0 - 20.0	10.4 (4.5)	1.0 - 20.0	12.0 (4.5)

¹Weighted GPA is measured on a scale from 0 to 5, with harder classes earning the higher designation.

²Depressive symptoms are measured by *Mood and Feelings Questionnaire (MFQ)*. The total possible score ranges from 0 to 64.

³People whose MFQ scores are greater than 29 are considered to reach the threshold that predicts “clinically significant depression.”

⁴General Body Esteem is measured by *Body-Esteem Scale for Adolescents and Adults (BESAA)*. The total possible score ranges from -36 to 56.

^{abc}Three sub-scales of Body esteem: ^aBE_Appearance--General Feelings About Appearance;

^bBE_Weight--Weight Satisfaction; ^cBE_Attribution--Evaluation of One’s Body and Appearance Attributed to Others.

Table 3. *Correlation Table for Total Sample*

Pearson Correlation (Sig.)	Weighted GPA ¹	Depressive Symptoms ²	General Body Esteem ³	BE_Appeara nc e ^a	BE_Wei ght ^b	BE_Attribution ^c
Weighted GPA ¹	--	0.030	0.289**	0.243	0.175	0.319**
Depressive Symptoms ²	--	--	-0.312**	-0.307**	-0.259*	-0.175
General Body Esteem ³	--	--	--	0.890**	0.850**	0.686**
BE_Appeara nc e ^a	--	--	--	--	0.635**	0.443**
BE_Wei ght ^b	--	--	--	--	--	0.397**
BE_Attribution ^c	--	--	--	--	--	--

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

¹Weighted GPA is measured on a scale from 0 to 5, with harder classes earning the higher designation.

²Depressive symptoms are measured by *Mood and Feelings Questionnaire (MFQ)*. The total possible score ranges from 0 to 64.

³General Body Esteem is measured by *Body-Esteem Scale for Adolescents and Adults (BESAA)*. The total possible score ranges from -36 to 56.

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ght--Weight Satisfaction; ^cBE_Attribution--Evaluation of One's Body and Appearance Attributed to Others.

Table 4. Correlation Table for Boys

Pearson Correlation (Sig.)	Weighted GPA ¹	Depressive Symptoms ²	General Body Esteem ³	BE_Appearance ^a	BE_Weight ^b	BE_Attribution ^c
Weighted GPA ¹	--	0.225	0.380*	0.312	0.201	0.458**
Depressive Symptoms ²	--	--	-0.159	-0.159	-0.188	-0.015
General Body Esteem ³	--	--	--	0.873**	0.893**	0.667**
BE_Appearance ^a	--	--	--	--	0.679**	0.312
BE_Weight ^b	--	--	--	--	--	0.511**
BE_Attribution ^c	--	--	--	--	--	--

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

¹Weighted GPA is measured on a scale from 0 to 5, with harder classes earning the higher designation.

²Depressive symptoms are measured by *Mood and Feelings Questionnaire (MFQ)*. The total possible score ranges from 0 to 64.

³General Body Esteem is measured by *Body-Esteem Scale for Adolescents and Adults (BESAA)*. The total possible score ranges from -36 to 56.

^{abc}Three sub-scales of Body esteem: ^aBE_Appearance--General Feelings About Appearance;

^bBE_Weight--Weight Satisfaction; ^cBE_Attribution--Evaluation of One's Body and Appearance Attributed to Others.

Table 5. Correlation Table for Girls

Pearson Correlation (Sig.)	Weighted GPA ¹	Depressive Symptoms ²	General Body Esteem ³			
			BE_Appearance ^a	BE_Weight ^b	BE_Attribution ^c	
Weighted GPA ¹	--	-0.180	0.180	0.140	0.173	0.125
Depressive Symptoms ²	--	--	-0.448**	-0.454**	-0.304*	-0.343*
General Body Esteem ³	--	--	--	0.905**	0.836**	0.696**
BE_Appearance ^a	--	--	--	--	0.620**	0.547**
BE_Weight ^b	--	--	--	--	--	0.336*
BE_Attribution ^c	--	--	--	--	--	--

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

¹Weighted GPA is measured on a scale from 0 to 5, with harder classes earning the higher designation.

²Depressive symptoms are measured by *Mood and Feelings Questionnaire (MFQ)*. The total possible score ranges from 0 to 64.

³General Body Esteem is measured by *Body-Esteem Scale for Adolescents and Adults (BESAA)*. The total possible score ranges from -36 to 56.

^{abc}Three sub-scales of Body esteem: ^aBE_Appearance--General Feelings About Appearance;

^bBE_Weight--Weight Satisfaction; ^cBE_Attribution--Evaluation of One's Body and Appearance Attributed to Others.

Figure 1. Measures of body esteem and weighted GPA.

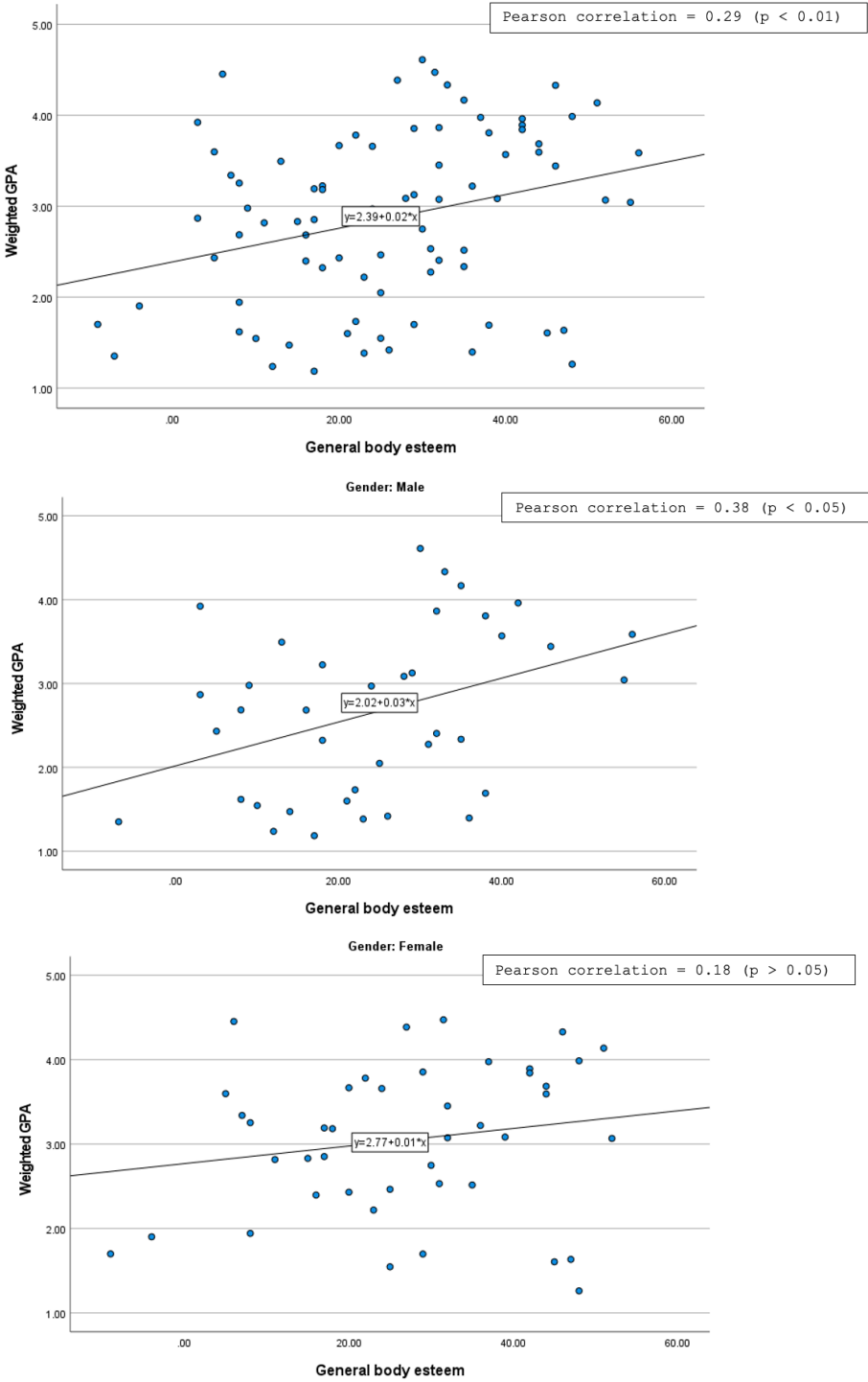


Figure 2. Measures of depressive symptoms and weighted GPA.

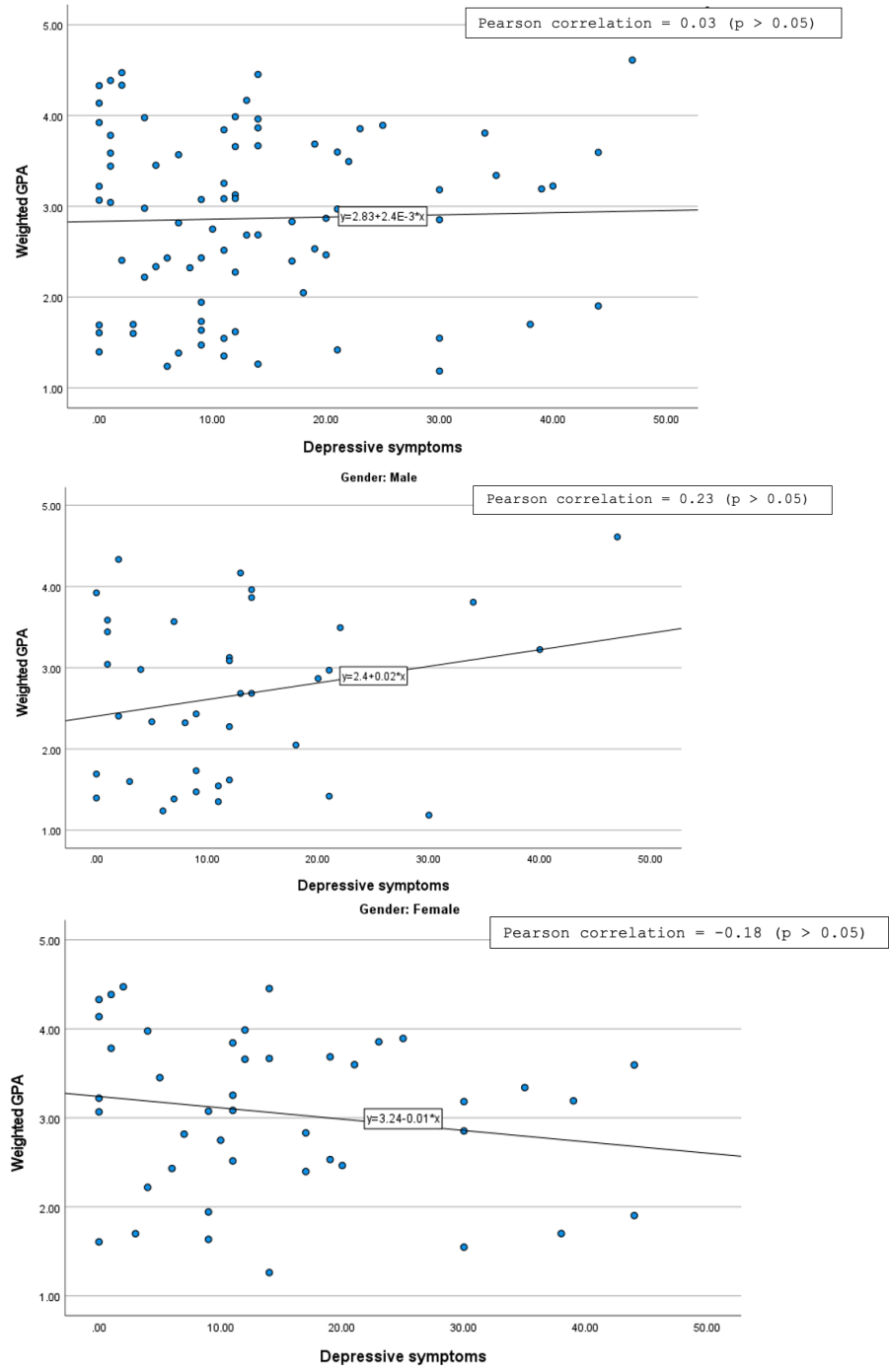


Figure 3. Measures of body esteem and depressive symptoms.

