The Implications of Body Image in Relation to Disordered Eating and Exercise Habits

CALIFORNIA STATE UNIVERSITY FULLERTON™

Jasmine Ly

Department of Social Work

ABSTRACT

Previous research has suggested that body image is a prevalent issue among adolescents, as well as its conjunction with eating and exercising habits. Body image has also been found to remain an issue among adolescents of all shapes and sizes, specifically across different categorizations of Body Mass Index (BMI). This study aims to investigate the complex relationships among body image, eating habits, exercise habits, and BMI. Data from the Health Behavior in School-Aged Children (HBSC) study from the 2009-2010 school year, gathered from on-site questionnaires administered to 12,642 respondents at various school sites across the United States, was analyzed to identify significant relationships among these concepts. Better body image was found to be positively correlated with both healthier eating habits and more frequent exercise habits. Body image was found to have significant differences among different BMI groups, with those categorized as being a healthy weight having the best body image. These findings can contribute greatly to future public education regarding the many implications of body image among adolescents and can guide the development of new interventions that aim to improve body image among adolescents.

INTRODUCTION

Significance of Study

Body image has been found to be a significant issue among all age groups but has been seen to be most prevalent among adolescents. This group is at risk for increased rates of disordered eating and exercise habits.

Purpose of Research

The purpose of this study is to investigate the relationships between body image and disordered eating, and body image and exercise habits.

Research Questions

1) What is the effect of body image on eating habits for adolescents?

2) What is the effect of body image on exercise habits for adolescents?

3) What is the relationship between body image and BMI?

Hypotheses

1) Negative body image will be associated with greater disordered eating habits.

2) Negative body image will be associated with greater amounts of exercise.

3) Body image will be consistent among all BMI groups.

LITERATURE REVIEW

Body Image

- 90.2% of adolescents have been found to be concerned about the shape of their bodies across all genders and Body Mass Index (BMI) categories (Prabhu, 2018).
- Negative body image has been found to be associated with several serious mental health consequences. These mental health consequences include, but are not limited to, decreased self-esteem, increased self-blaming, and increased self-distraction (Pinkasavage, 2015).

Eating Habits

- Girls have higher rates of negative body image than boys, and a stronger association with disordered eating behaviors, such as binge eating, chronic dieting, and other unhealthy behaviors that are aiming to lose weight (Neumark-Sztainer et al., 2004).

Exercise Habits

- Adolescents are likely to maintain a negative body image and increase exercise frequency and rigor into young adulthood, despite any changes in their BMI (Gestsdottir et al., 2017).

Body Mass Index (BMI)

- Negative body image has been found to be an issue across all four (underweight, healthy weight, overweight, and obese) BMI categories (Prabhu, 2018).

METHODOLOGY

Research Design and Data Collection

- The current study is a secondary analysis of the data from Health Behavior in School-Aged Children (HBSC), 2009-2010 (ICPSR 34792).
- The HBSC had two main objectives - one of which being to monitor any health-risk behaviors and attitudes among youth over time to identify targets for health promotion initiatives, and the other being to provide researchers with relevant information regarding explaining how health attitudes and behaviors develop throughout early adolescence.
- The original design consisted of survey data, which was collected through on-site questionnaires at each school that participated. Three versions of the questionnaire were utilized - one for fifth and sixth graders, one for seventh, eighth, and ninth graders, and one for tenth graders.

Sampling and Sampling Method

- The total sample of the original study consisted of 6,502 boys and 6,136 girls, with a total of 12,642 respondents.
- The sample for the original study was recruited through a three-stage stratified design, to collect a sample that was representative of the United States as a whole. Strata used in the sampling process included census divisions and grades, and school districts and groups of school districts were used as primary sampling units.

Measures

- Body image was measured in the current study by using a sum scale of 6 items that assess feelings about the body.
- Eating habits were defined as general tendencies of individuals to engage in, regarding eating. Eating habits were measured using a single item asking the frequency of eat/drink per week
- Exercise habits were defined as general tendencies of individuals to engage in, regarding exercising. Exercise habits were measured using a single item asking the frequency of exercise per week.
- BMI was measured by utilizing 1 item from the original study's questionnaire. The BMI variable originally consisted of 4 categories - Underweight, Healthy Weight, At Risk of Overweight, and Overweight.

Table 1. Sample Characteristics

Sample Characteristics (N=12,642)

Characteristic	*f*	%
Gender		
Male	6502	51.4
Female	6136	48.5
Age	*M* = 12.95	*SD* = 1.75
Race		
Black or African American	2164	17.1
White	5903	46.7
Asian	469	3.7
American Indian or Alaskan Native	222	1.8
Native Hawaiian or Other Pacific Islander	111	.9
Two or More Races	828	6.5
Hispanic	2392	18.9
Grade		
Grade 5	1717	13.6
Grade 6	2050	16.2
Grade 7	2421	19.2
Grade 8	2475	19.6
Grade 9	2072	16.4
Grade 10	1907	15.1
Affluence	*M* = 5.91	*SD* = 1.96

RESULTS

To examine the relationship between body image and eating habits, a Spearman's rho correlation was calculated. The results indicated a statistically significant positive association, with $r = .113$ and $p < .001$. The strength of the correlation between body image and eating habits was weak. Overall, the test indicated that better body image was correlated with healthier eating habits.

To examine the relationship between body image and exercise habits, a Spearman's rho correlation was calculated. The results indicated a statistically significant positive association, with $r = .183$ and $p < .001$. The strength of the correlation between body image and exercise habits was weak. Overall, the test indicated that better body image was correlated with more frequent exercise.

Figure 1. Scatterplot of Body Image and Eating Habits

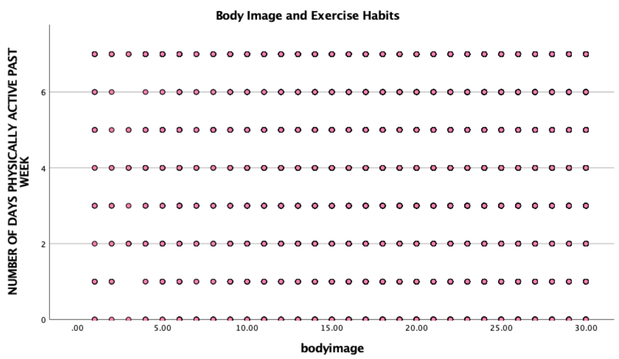
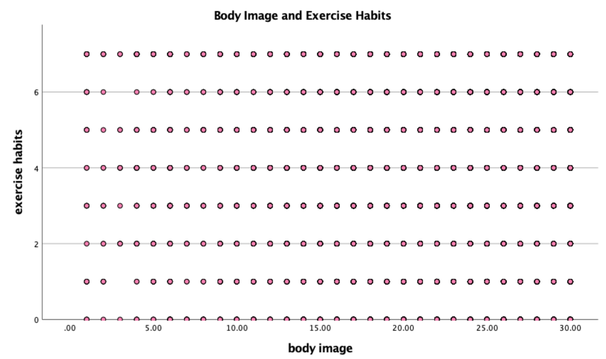


Figure 2. Scatterplot of Body Image and Exercise Habits



To examine the relationship between body image and BMI, a Kruskal-Wallis H test was conducted comparing mean body image scores among study participants from various BMI groups. A significant result was found ($H(3)=688.052$, $p < .001$), indicating that the four BMI groups differed from each other. Follow-up pairwise comparisons indicated that study participants who were identified as overweight (mean rank = 3401.46) or at risk of becoming overweight (mean rank = 4395.03) had significantly lower body image scores than those who were identified as underweight (mean rank = 5409.53) or healthy weight (mean rank = 5475.03).

Table 2. Differences in Mean Ranks of Body Image Among BMI Groups

Differences in Mean Ranks of Body Image Among BMI Groups

	Underweight (1)	Healthy Weight (2)	At Risk of Overweight (3)	Overweight (4)	Post hoc
	MR	MR	MR	MR	
Body Image	5409.53	5475.03	4395.03	3401.46	(1, 2 >3, 4; 1 < 2)

DISCUSSION

Summary

- When comparing the findings of this study with the findings of previous research and literature in the scope of body image, eating habits, exercise habits, and BMI, this study's findings are consistent with previous findings of positive relationships between body image and eating habits, along with body image and exercise habits.
- The relationship between body image and BMI identified in this study differs from previous findings, in that this study found that there were significant differences in body image scores between BMI groups as opposed to body image being consistent across all groups.

Strengths and Limitations

Strengths

- This study utilized research questions that investigated multiple related variables among a single original sample population. The original questionnaire included plentiful questions regarding many aspects of adolescence, allowing this study to utilize several questions regarding each variable to create its own operationalization of each variable concept.

Limitations

- The original data that was utilized was gathered in the 2009-2010 academic year, which is over a decade ago.
- This study's use of BMI may be a poor representation of weight and health. Though that was the only measure available in the original data set that reflected both weight and general health, BMI has been found to be a poor indicator of overall physical health. Fatphobia manifests in the medical field in numerous ways, such as inadequate medical equipment to accommodate fat bodies, bias against fatness implied by doctors in assessment and treatment, and measures of health having a disproportionate focus on fatness (Kost & Jamie, 2022).

Implications for Research and Practice

- This study developed knowledge that can allow socials workers to be more informed regarding relationships among body image and eating, exercising, and BMI among adolescents in settings, such as schools, hospital settings, eating disorder treatment, etc.
- Regarding social work practice, the correlations found between body image and eating/exercise habits can help to inform the assessment process when working with adolescents.
- As body image was found to be more similar for those classified as "underweight" and "overweight", this can shift societal views and habits of only associating poor body image with those who are overweight, and inform new, different types of interventions that can better address the issue of poor body image among adolescents.
- Regarding policy, this study and its findings can contribute to informing any policies or general information provided to the public by the government. Spreading accurate and reliable information on these topics can assist the government or large agencies in informing the public of risk factors for poor body image.
- Future research should investigate the relationship between body image and weight/health with a measure for this other than BMI, as more accurate representations of health and weight that account for fatphobia within the medical field can be utilized to ensure more accurate findings.
- Future research could investigate the relationships among body image, eating habits, and exercise habits among different cultures. This could allow for the identification of cultural differences that might contribute as either risk factors or protective factors for body image.

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