

IMPLEMENTING AN EVIDENCE-BASED EATING DISORDER INTERVENTION  
IN A PUBLIC SCHOOL CONTEXT: OUTCOMES AND IMPLICATIONS

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## ABSTRACT

The purpose of the current research was to explore change in student outcomes after participating in an intervention addressing healthy lifestyle habits as well as body acceptance. This intervention program utilized cognitive dissonance strategies in order to promote body acceptance and reject the culturally sanctioned standards of beauty, namely the thin ideal. This study examined 18 adolescent females who attended a large public high school in central New Jersey. Students were given measures at pretest and posttest assessing thin ideal internalization, body dissatisfaction, self-esteem, perceptions regarding ability to achieve long-term goals, and experience of school problems. Independent paired T-tests were utilized to assess significant changes from pretest to posttest. Additionally, ANCOVA and Chi Square analyses were utilized to assess demographic variables that may have been associated with significant change. This study yielded a wide variety of results. Significant changes from pretest to posttest were detected for thin ideal internalization, body dissatisfaction, and experience of school problems. Both age and grade levels in school were associated with some of these detected changes. This study was exploratory in nature and more research with a larger population and further adaptations to implementation within a school context is needed. Results may encourage current school-based practitioners to implement evidence-based intervention programs in a way that fits their school's needs, while producing positive changes for students.

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## Chapter I

### Introduction

*The Body Project* is an interactive, psycho-education prevention program designed to equip adolescent females with knowledge, skills, and attitudes regarding eating disorders, body image, and healthy lifestyles. This program is a cognitive dissonance based program, whereby female adolescents are immersed in arguing against the “thin ideal” in order to decrease risk factors associated with the onset of disordered eating (Stice & Presnell, 2007). The program is designed to have groups of six to eight girls meet for one-hour sessions, once per week, for four consecutive weeks. Groups cover a variety of topics related to the thin ideal including how to combat internalizing this ideal and forming negative thoughts about one’s own body. This program was specifically designed for adolescent females, as they are particularly vulnerable to the onset of eating pathology (Eddy, Keel & Leon, 2008; Stice & Presnell, 2007).

Adolescent females have been identified as being at higher risk for the onset of eating disorders than the general population as they are developmentally susceptible to a number of risk factors (Eddy et al., 2008). Rates of eating disorders have been found to occur in adolescents at a higher rate than in the general population. While anorexia afflicts about .3 percent of the general population and bulimia affects about 2 percent of the population, these disorders occur in about .5 percent and up to three percent of adolescents, respectively (Hoek & van Hoeken, 2003; Favaro, Ferrara & Santanastaso, 2003; Pinhas & Bondy, 2012). This makes this population vital to target for a universal intervention that aims to prevent and diminish risk factors that may contribute to disordered eating.

Eating disorders may significantly impact the lives of adolescents, as they may lead to significant health concerns as well as inhibit academic performance and school functioning. Cognitive functioning is impacted by hormonal changes, which affect learning and memory as well as concentration. Those who experience eating disorders have been found to have difficulty with executive functioning, working memory, attention, and flexibility in thinking. Consequently, those with eating disorders may struggle with problem solving and regulating their behavior (Kay, Frank, Bailer & Henry, 2005). As a product of these cognitive shifts, adolescent students may experience difficulty in school functioning and maintaining social relationships. Eating disorders also impact adolescents' general health; adolescents may experience energy deprivation as well as effects on bones, the cardiovascular system, and menstrual cycle. Imbalances in fluids and electrolytes may lead to dehydration, contributing to other medical complications (Patel, Greydanus, Pratt & Phillips, 2003). Overall, eating disorders are likely to negatively impact medical health, academic performance, and school functioning. Due to the significant impact disordered eating can have in multiple areas of an adolescent's life, interventions to reduce risk factors for such disorders are both relevant and important.

### **Background of the Study**

A large, public suburban high school set in a diverse community reported concerns regarding their female adolescent students' body image and risk for eating disorders. The school believes that a universal intervention for those students who would like to participate would benefit their students and prevent possible impairment in students' health, academic achievement, and school functioning. The school principal and

the physical education department chair have agreed to incorporate *The Body Project*, an empirically supported cognitive dissonance based intervention curriculum, as an alternate program to participation in physical education classes. This would encompass three total weeks of class for students who would like to voluntarily participate. The goal of running *The Body Project* groups will be to equip female students with knowledge, skills, and attitudes regarding positive self-image, body image, and awareness of healthy lifestyles and habits. This program will also provide students with knowledge regarding the thin ideal and provide them with skills to combat such an ideal and help shape their attitudes, in order to reduce risk for onset of eating pathology (Stice & Presnell, 2007).

The following are hypotheses regarding student outcomes after participating in *The Body Project* groups:

- After participating in *The Body Project Groups*, students will demonstrate decreased internalization of the culturally sanctioned thin ideal.
- After participating in *The Body Project Groups*, students will experience an increase in self-esteem.
- After participating in *The Body Project* groups, students will report diminished levels of school problems.
- After participating in *The Body Project* groups, student will report feeling more able to achieve long-term goals.
- After participating in *The Body Project* groups, students will report reduced rates of body dissatisfaction.

### **Adolescence and Disordered Eating**

Eating disorders have become an increasingly prevalent mental illness in the United States, with onset most commonly occurring in adolescence (Bordo, 1983; Carr & Peebles, 2012; Eddy et al., 2008; Pinhas & Bondy, 2012). Disordered eating is diagnosed

at increasingly younger ages with continued frequency (Derenne & Beresin 2006).

According to the *Diagnostic and Statistical Manual of Mental Disorders-IV-TR*, these disorders include anorexia nervosa, bulimia nervosa, and eating disorders not otherwise specified (EDNOS). Anorexia is an eating disorder whereby an individual refuses to maintain a body weight of at least 85 percent of their expected healthy weight, has an intense fear of weight gain despite being underweight, has a disturbance in body shape experience, and experiences loss of a regular menstrual period. Bulimia is an eating disorder whereby an individual experiences recurring episodes of binge eating as well as recurring practice of compensatory behaviors in order to avoid weight gain.

Compensatory behaviors may include purging or the use of laxatives. Those with Bulimia also experience self-evaluation that is disproportionately influenced by their body shape and weight. EDNOS is a category designed for those who do not meet diagnostic criteria for either anorexia or bulimia (American Psychiatric Association, 2000). In general, anorexia afflicts approximately 0.3 percent of the population and bulimia affects roughly two percent of the population, although true estimates are difficult to determine given that many individuals with eating disorders do not seek treatment (Hoek & van Hoeken, 2003; Favaro, Ferrara & Santanastaso, 2003). Lifetime prevalence for adolescents, however, may exceed the rates of the general population with rates for anorexia being between 0.5 and approximately three percent, and bulimia being between one and three percent. Rates for EDNOS tend to be larger, with rates for adolescents found to be as high as 14 percent (Pinhas & Bondy, 2012). Therefore, adolescence tends to be the developmental period demonstrating the highest rates of eating disorders. These disorders are thought to occur

due to complex interactions between developmental, biological, social, and psychological factors (Eddy et al., 2008).

Adolescence as a developmental period is a particularly vulnerable time for the onset of eating disorders. It has been observed that transitional periods from childhood to adolescence and from adolescence to early adulthood are the most vulnerable period for the acquisition of an eating disorder (Eddy et al., 2008). During these transitional periods, adolescents experience changing expectations and increased demands placed upon them, creating psychological and social distress. As the transition point to adolescents occurs, cognition shifts from concrete to more abstract thinking. This change in cognition allows adolescents to perceive body image and shape rather than just their body size and weight (Eddy et al., 2008). At the same time, adolescent females are more likely to experience body dissatisfaction, a significant risk factor for onset of eating pathology (Eddy et al., 2008; Stice & Shaw, 2002; Stice & Whitenton, 2002; Striegel-Moore & Bulik, 2007). Additionally, the increased autonomy experienced during transition periods such as puberty, in conjunction with hormonal shifts, may lead to the expression of particular genetically influenced temperaments that are more likely to make disordered eating choices (Eddy et al., 2008). Given the changes that occur in adolescents, it appears this developmental period is a particularly susceptible point for the occurrence of the onset of eating disorders, especially in females. Prior to adolescence, males and females are found to have similar rates of eating disorder diagnoses; however adolescence marks a unique period in which females are significantly more at risk than their male counterparts. The precise reasoning for the gender differences in eating disorder onset is unclear, although

there are many hypotheses including the internalization of the thin ideal as well as the influence of significant others such as peer and family (Eddy et al., 2008).

Development does not occur in a vacuum, and there may be a variety of social and psychological factors contributing to the higher rate of eating disorders in adolescent females. One such significant factor includes cultural norms regarding ideals of beauty and preferred body types. During puberty, body fat content increases, while at the same time many adolescents have elevated exposure to the “thin ideal” presented in American media (Carr & Peebles, 2012; Eddy et al., 2008). The thin ideal is an image of beauty presented by American culture, whereby females are expected to obtain an unrealistically thin body shape (Bordo, 1983). Almost all American adolescents use various forms of media, and receive a plethora of messages advertising such an ideal. It has been found that the average American resident is exposed to 5,000 advertising messages each day (Carr & Peebles, 2012). Advertisements utilizing models tend to present females that are an average of five feet, 11 inches and 117 pounds, while the average American woman is five feet, four inches and 140 pounds; thus, models are on average 98 percent thinner than the average US woman. Given that the average adolescent in the United States spends an average of seven hours and 38 minutes accessing media per day, they are likely exposed to a variety of content promoting the thin ideal (Carr & Peebles, 2012; Eddy et al., 2008). The discrepancy between the increase of body mass adolescents experience and the thin ideal constantly presented to them may increase in body dissatisfaction and increase the risk for onset of eating pathology (Eddy et al., 2008; Stice & Shaw, 2002; Stice & Whitenton, 2002; Striegel-Moore & Bulik, 2007). Studies have repeatedly demonstrated that females perceive the media as influential on their standard of beauty



and ideal body types. Studies have also shown that prolonged media exposure for adolescents leads to negative outcomes, including body dissatisfaction, an elevated drive for thinness, and unhealthy dieting behaviors (Carr & Peebles, 2012). For example, Tucci and Peters (2008) exposed groups of females to images of actresses with different body types. Those individuals exposed to the ultra thin group of model images were more likely to experience greater body dissatisfaction and heightened drive for thinness. Similarly, Rodgers and Cabrol (2009) conducted a study whereby they exposed females to images of either underweight or typical body types. Those individuals exposed to underweight images of models experienced greater body dissatisfaction (*as cited in Carr & Peebles, 2012*). Austin and Smith (2008) completed another study done with 119 Mexican female adolescents, asking participants to rate their own body types and chose a desired body type. The average result demonstrated that girls perceived their weight as greater than their actual weight; 50 percent of the study sample desired to have a smaller body, and 12 percent of girls preferred a body type consistent with anorexia (*as cited in Carr & Peebles, 2012*). This series of studies demonstrated the body dissatisfaction that may occur when adolescents are exposed to media images conveying the thin ideal. It is possible that the internalization of the thin ideal during adolescence leads to decreased body satisfaction even when not immediately exposed to a stimulus such as pictures of models. Research demonstrates media as influential to adolescents' conception of beauty and impacts their behaviors and attitudes regarding their bodies; many of these behaviors and attitudes may lead to negative outcomes and put adolescent females at risk for eating pathology (Bordo, 1983; Carr & Peebles, 2012; Eddy et al. 2008). Overall, the combination of the adolescent developmental period combined with socio-cultural

pressure to obtain a particular image to achieve beauty presented by the media may create a heightened vulnerability to the onset of eating disorders.

### **The Impacts of Disordered Eating**

Eating disorders impact both physical health and academic performance in adolescents. In terms of physical health, eating disorders may lead to a wide variety of medical complications including a number of cardiovascular conditions. Such conditions include cardiomyopathy, hypotension, bradycardia, loss of heart mass in the left ventricle, and changes in the QT interval as measured by the electrocardiogram. Lack of proper nutrition may create undue stress on the heart, creating problems of circulating blood around the body; additionally, heart mass may be lost due to improper nutrition. These conditions have been linked to heart arrhythmias, cardiac arrest, and sudden death (Casiero & Frishman, 2006; Katzman & Findlay, 2012; Mehler, Crew & Weiner, 2004; Winston & Stafford, 2000). Eating disorders may also result in endocrine complications including irregular menses, hypoglycemia, and abnormalities in thyroid functioning. These endocrine complications can lead to significant long-term health consequences such as reduced fertility and diabetes (Mehler & Krantz, 2003; Mehler et al., 2004). Gastrointestinal functioning is also impacted by eating disorders. In patients with bulimia, the esophagus and colon are two areas particularly affected by compensatory behaviors, such as self-induced vomiting and laxative use. Consequences of stresses to the gastrointestinal tract in bulimia include esophagitis, esophageal ulcers, or rupturing of the esophagus (Mehler et al., 2004). In patients with anorexia, gastrointestinal impacts have been found to include delayed gastric emptying (i.e. constipation) and bloating (Mehler & Krantz, 2003). Other health complications resulting from eating disorders

include osteoporosis, imbalances of fluids and electrolytes, dehydration, irregular renal functioning, and alterations in metabolic functioning (Katzman & Findlay, 2012; Mehler & Krantz, 2003; Mehler et al., 2004). Overall, the presence of eating disorders in individuals may lead to a number of significant health consequences. Adolescents may be particularly susceptible to the health impacts based on their ongoing physical and hormonal development. Given that this disorder can lead to such a wide variety of health problems while impacting an increasing number of adolescent females, it is an essential area of mental illness in which to focus, intervene, and attempt to prevent.

In addition to a wide variety of health consequences, the presence of eating disorders in adolescents also influences their cognitive and school functioning. Proper brain functioning is imperative for effective and efficient cognitive functioning. Thus, the brain must be protected from any disruption in order to optimally function. Poor nutrition is one such factor that negatively impacts the brain, as metabolic fuel is a crucial factor for brain function (Bellisle, 2004). Particular components of diet are essential for cognitive functioning. Thiamin is a vitamin for which the body holds relatively low stores. When nutrition is depleted, Thiamin is quickly depleted and alters human cognition and behavior. Most notably, lack of thiamin has been found to lead to irritability, aggressive behaviors, and personality changes. Glucose is another nutrient that works to improve cognitive functioning. Adequate levels of glucose are associated with improved short-term memory, rapid information processing, improved decision-making time, and increased word recall (Bellisle, 2004). Cognitive functioning is also impacted by hormonal changes, which affect learning and memory as well as concentration. Those who experience eating disorders have been found to have difficulty

with executive functioning, working memory, attention, and flexibility in thinking. Consequently, those with eating disorders may struggle with problem solving and regulating their behavior (Kaye, Frank, Bailer & Henry, 2005). As a product of these cognitive shifts, adolescent students may experience difficulty functioning in school and maintaining relationships with peers and school personnel.

Several studies have evaluated the impact of eating breakfast before school as a means of exploring the impact of nutrition on academic performance (Bellisle, 2004; Kleinman, Hall, Green, Korzec-Ramirez, Patton, Pagano & Murphy, 2002; Rampersaud, Pereira, Girard, Adams & Metz, 2005). Rampersaud and colleagues (2005) summarized the results of 47 studies evaluating various consequences of eating breakfast, including school performance in children and adolescents. Results from this summary demonstrated breakfast consumption as being associated with improved cognitive functioning. More specifically, eating breakfast has been correlated with improved memory-test grades, recall, episodic memory, as well as short and long-term memory. Eating breakfast has also been found to improve social and emotional functioning, demonstrating positive effects on mood, alertness, and contentment. Additionally, breakfast consumption has been shown to make positive impacts on depression and hyperactivity. This is important data to consider in relation to adolescent females, as this review found that they were more likely to skip breakfast, often times due to diet and weight concerns. These girls were also not likely to compensate nutrients or calories at other meals, contributing to overall lower nutritional adequacy (Rampersaud et al., 2005). Similar to Rampersaud and colleagues, Kleinman and colleagues (2002) found that breakfast consumption before school is correlated with higher grade point averages, less psychosocial problems, and

lower rates of school absences and tardiness. Overall, these studies demonstrate the influence of adequate nutrition on school performance, including effects on cognition and psychosocial functioning. Given that adolescent females are more likely to engage in missing breakfast for diet and weight concerns it is vital to consider this issue in the school context, as the consequences of inadequate nutrition are likely to impact their school functioning.

### **Risk Factors for Disordered Eating**

While eating disorders are complex and are most likely the product of multiple causes and may lead to severe medical and functional consequences, there is a certain set of prospective risk factors that may be targeted by intervention. Perhaps the first and most prominent risk factor for eating pathology is simply being female (Adams, Katz, Beauchamp Cohen & Zavis, 1998; Herzog & Eddy, 2009; Striegel-Moore & Bulik 2007). Females are consistently presented with messages that they lack essential traits of Western beauty, or are not attractive or thin enough; a dichotomy between the idealized body type and the typical American body exists and is continuously presented in popular media. While over the course of history, females have been presented with unattainable images of beauty, the robust presence of the media in people's lives today is much stronger than ever before, making messages conveying the current thin ideal extremely potent (Derenne & Beresin, 2006). Females have been found to endorse the thin ideal significantly more than males, and tend to prefer a thinner than average body shape (Adams et al., 1998). While being female may be a primary risk factor for eating pathology, not all females experience eating disorders, therefore other risk factors are important to consider.

Another significant risk factor for the onset of eating pathology is body dissatisfaction. Body dissatisfaction has been found to be associated with emotional distress, appearance rumination, and unnecessary cosmetic medical procedures. Body dissatisfaction has also been found to lead to elevated risk for the onset of eating pathology (Stice & Shaw, 2002; Stice & Whitenton, 2002; Striegel-Moore & Bulik, 2007). Body dissatisfaction may arise from physical deviation from the current thin ideal and socio-cultural pressure to obtain such an image. Adolescent females are particularly vulnerable to body dissatisfaction as they gain body mass during this developmental period, furthering them from the thin ideal (Stice & Shaw, 2002). Stice and Whitenton (2002) conducted a study assessing risk factors for body dissatisfaction, using survey data from 486 adolescent females ranging from age 11 to 15 years; participants were recruited from four private and four public schools. When surveys were initially completed, 24 percent of participants reported body dissatisfaction, resulting from reports of either “dissatisfied” or “extremely dissatisfied” on an adapted version of the *Satisfaction and Dissatisfaction with Body Parts Scale*. When surveys were completed a year later, 23 percent of participants experienced body dissatisfaction based on the same report criteria. It was found that elevations in body mass, perceived pressure to be thin, thin ideal internalization, and lack of social support prospectively predicted increases in body dissatisfaction. Understanding how body dissatisfaction arises is imperative, as elevated levels of dissatisfaction have been found to predict subsequent dieting behavior as well as negative affect, which are both considered risk factors for eating pathology (Stice & Shaw, 2002). Overall, it appears that body dissatisfaction is an important risk factor to consider in intervening with the onset of eating pathology. It not only impacts a

significant portion of adolescents, but also may lead to other risk factors for the onset of eating disorders. Body dissatisfaction is caused by a number of factors that may be preventable, including the internalization of the thin ideal, perceived pressure to be thin, and low rates of perceived social support. Therefore, it is possible that by mediating such factors, body dissatisfaction may be reduced, working to inhibit the onset of an eating disorder (Stice & Shaw, 2002; Stice & Whitenton, 2002).

Another prominent risk factor for the onset of eating pathology is thin ideal internalization. Thin ideal internalization is defined as the awareness of the ideal and its social meaning and adoption of both the ideal and its personal relevance (Striegel-Moore & Bulik, 2007). Since 1958, there have been significant declines in the ideal female body size. While culturally ideal body image has changed to a thinner shape, rates of eating disorders have also risen. From 1930 to 1970 rates of anorexia significantly increased, and continue to be detected at increasing rates. Bulimia significantly increased from 1985-1995, and rates of this disorder also continue to be detected at greater rates (Derenne & Beresin, 2006; Striegel-Moore & Bulik, 2007). The socio-cultural pressure to be thin leads to thin ideal internalization and may result in eating pathology. Additionally, internalization of this ideal may lead to body dissatisfaction and other related risk factors for eating pathology. Thin ideal internalization is a factor that may be mediated by an intervention and inhibit the onset of eating pathology or related risk factors. The socio-cultural pressure to be thin may be countered by other ideals regarding health and beauty and may reduce the internalization of the current thin ideal, reducing the risk for onset of eating pathology. Overall, it appears that this is an important risk factor to consider as a point of intervention.

There are a variety of other risk factors that have been associated with the onset of eating pathology. One such risk factor includes body mass. It is thought that accumulation of body mass during adolescence is associated with risk for eating pathology, as it moves further from the thin ideal of beauty presented by popular culture. This has been found to be a direct risk factor for eating pathology as well as body dissatisfaction in three independent studies (Stice & Shaw, 2002; Stice & Whitenton 2002; Striegel-Moore & Bulik, 2007). Dieting and negative affectivity have also been found to be risk factors for the onset of eating pathology as well as body dissatisfaction (Stice & Shaw, 2002; Stice & Whitenton 2002; Striegel-Moore & Bulik, 2007). Other risk factors that have been connected to the onset of eating pathology include perceived pressure to be thin, low rates of self-esteem, body weight and shape concerns, perceived lack of social support, and depression (Ghader & Scott, 2001; Herzog & Eddy, 2009; Mayer, Muris, Meesters, Zimmermann-van Beuningen, 2009; Striegel-Moore & Bulik, 2007). Overall, there are a variety of risk factors for the onset of eating disorders. Many of these factors are related to the socio-culture pressure to obtain a particularly thin body shape; such risk factors may be an important point for intervention as mediating their impact on adolescents could potentially reduce their risk for onset of eating pathology such as anorexia and bulimia.

### **Intervention and Prevention Efforts**

There have been many attempts to design effective intervention and prevention programs to inhibit the onset of disordered eating based on the risk factors associated with eating pathology. Less than half of those who experience onset of eating pathology seek treatment, therefore the creation of effective intervention and prevention programs is



vital to those at risk (Seidel, Presnell & Rosenfield, 2009; Stice & Shaw, 2004). The first generation of such programs was largely psycho-educational, only offering information about disordered eating to participants. The second wave of programs began to incorporate information regarding the socio-cultural pressure to be thin as well as healthy weight control mechanisms, and was didactic in nature. Both of these initial program designs did little to influence eating attitudes and behavior in those who participated (Stice & Shaw, 2004). The current generation of eating disorder intervention and prevention programs utilizes an interactive design and incorporate the use of cognitive dissonance theory; these programs have been found to yield positive results in altering cognition and behavior regarding eating (Matusek, Wendt & Wiseman, 2004; Roehrig, Thompson, Brannick, van de Berg, 2006; Seidel, Presnell & Rosenfield, 2009; Stice & Shaw, 2004). The use of cognitive dissonance leads participants in these programs to alter their behavior or attitudes to reduce inconsistency regarding disordered eating; when participants learn about the thin ideal and are asked to make arguments countering the thin ideal, their cognitions and behaviors will theoretically align with their counter attitudes made during the program and dismiss the thin ideal and disordered eating to achieve such an ideal (Stice, Chase, Stormen & Appel, 2000; Stice Mazotti, Weibel & Agras, 2000). Cognitive dissonance based prevention programs have been found to reduce thin ideal internalization, body dissatisfaction, negative affect, dieting behaviors, and bulimic symptomology (Becker, Smith & Ciao, 2006; Matusek, Wendt & Wiseman, 2004; Stice et al., 2000; Stice et al., 2001; Roehrig et al., 2006). Stice and colleagues (2000) conducted a study to investigate the effects of a dissonance based eating disorder prevention program. The study sample contained 87 females, ages 17-29, who self-

selected to participate in groups. The prevention groups were delivered in three one-hour sessions with five to 10 participants per group; the outcomes from these groups were compared to a healthy weight management placebo condition. Results demonstrated that participants in the prevention program groups had reduced thin ideal internalization as well as lowered rates of body dissatisfaction, negative affect, dieting behavior, and bulimic symptoms at both termination of the program and at a four-week follow up point. While the healthy weight management program yielded some of these results, effect sizes were significantly greater for those in the prevention groups. Beck, Smith, and Ciao (2006) demonstrated similar results in a study they conducted comparing a dissonance based prevention program to a media literacy program. Results demonstrated that the dissonance based prevention program decreased negative affect and bulimic symptoms. While both dissonance and media advocacy conditions yielded effects in lowering thin ideal internalization, eating restraint behavior, body dissatisfaction, and eating pathology, the dissonance condition yielded larger effect sizes. Overall, the literature is consistent, citing dissonance-based programs in reducing risk for the onset of eating disorders. The programs tend to directly address the socio-cultural pressures to obtain the thin ideal, targeting many risk factors that are related to the onset of eating pathology; addressing these risk factors in an active way may help participants change their attitudes and behaviors regarding the cultural standards of beauty and the desire to obtain such standards.

Stice and Shaw (2004) conducted a meta-analysis reviewing 38 eating disorder prevention programs in order to determine other components leading to effective eating disorder prevention. Successful components of reviewed programs include delivery of the

program in multiple sessions, delivery to solely female audiences, incorporation of interactive exercises, target adolescents who are at least 15 years of age, and target at-risk rather than universal groups of participants. Overall, it appears that a multisession program design utilizing interactive activities and cognitive dissonance theory targeted at the appropriate participants may yield the best results in preventing and reducing eating pathology in adolescent females. It is important to consider these program components in order to best target risk factors associated with the onset of eating pathology and in order to maximize intervention and prevention efforts.

*The Body Project: Promoting Body Acceptance and Preventing Eating Disorders Facilitator Guide* is an intervention program designed to equip adolescent females with knowledge, skills and attitudes regarding eating disorders, body image, the cultural ideals of beauty, and healthy lifestyles. This is an evidenced based program that has been shown to reduce the internalization of the thin ideal as well as negative attitudes about one's own body in young females (Stice & Presnell, 2007). This program utilizes a number of factors associated with successful eating disorder intervention programs, including a dissonance theoretical base, interactive activities, delivery in multiple sessions, and is designed specifically for adolescents. Five independent labs running randomized prevention trials found this program to reduce thin ideal internalization, body dissatisfaction, negative mood, unhealthy dieting behaviors, and disordered eating behaviors (Stice & Presnell, 2007). The results yielded by *The Body Project* have been found to be consistent at two-to-three year follow up points after intervention (Shaw, Stice & Becker, 2009). *The Body Project* has been found to be beneficial to adolescents both with and without increased risk for eating disorders, and has been found to reduce

risk for subthreshold and threshold anorexia and bulimia at a three follow up points after intervention (Shaw, Stice & Becker, 2009; Stice & Presnell, 2007). This program is largely based on having girls argue against the thin ideal as a standard for body image, and facilitates building skills, attitudes, and knowledge regarding the thin ideal; ideally this program aids building protective factors against the socio-cultural pressure to obtain an unrealistically thin body shape. The program aims to improve self-image as well as healthy lifestyle and healthy habits (Stice & Presnell, 2007). This intervention aims to have girls take an active stance, arguing against the culturally promoted “thin ideal,” working to shift attitudes against this ideal (Shaw, Stice & Becker, 2009). Therefore, this evidence-based program adheres to the components in the literature that have been found to reduce risk for the onset of eating pathology. It is consistent with many other programs that have been tested in controlled experiments and addresses many of the socio-cultural risk factors for onset of eating pathology cited by the literature. Therefore, this program may be an optimal tool in a universal intervention with adolescent girls in order to reduce the risk of developing an eating disorder.

School may be an appropriate context to provide a universal intervention to reduce risk for the onset of eating pathology and related risk factors. School settings allow direct access to those most at risk: adolescent females (Eddy et al., 2008). Several studies have successfully conducted eating disorder interventions in the school context yielding positive results (McVey, Davis, Tweed & Shaw, 2004; McVey, Lieberman, Voorberg, Wardrope & Blackmore, 2003). Schools house a variety of faculty members that may be readily able and available to implement eating disorder intervention programs such as *The Body Project*.

School psychologists are faculty within the school that may be readily able to implement an eating disorder intervention program. School psychologists are highly qualified professionals who are responsible for students' social, emotional, and behavioral health; therefore promoting the mental health needs of adolescent females in a school setting is well within the scope of their role (NASP, 2012; Ross, Powell & Elias, 2002). The role of a school psychologist includes implementing programs, collecting data, and evaluating student outcomes. Implementing an eating disorder intervention in the school context fits within this aspect of a school psychologist's role and allows them to benefit a large number of students (NASP, 2012). By implementing such a program, school psychologists may work to improve school climate, improve student's social and emotional health. By improving these areas of student functioning it is likely that their academic achievement may improve as proper nutrition and social-emotional functioning promotes more efficient cognition and brain function (Bellisle, 2004). Thus, school is a context that allows access to a population at risk for eating pathology and contains highly qualified professionals who may implement and evaluate an eating disorder intervention program such as *The Body Project* (Stice & Presnell, 2007).

Eating disorders are a significant mental health issue, most frequently affecting female adolescents. These disorders have a number of health, psychological, and cognitive consequences for those who are afflicted. Fortunately, research has indicated a number of prospective risk factors for the onset of eating disorders that may be mediated in order to prevent the onset of such disorders. Eating disorder prevention and intervention programs have been created to address such risk factors using evidence-based strategies and theory, making them most effective. Schools may be an appropriate

context to address eating pathology using evidence-based programs such as *The Body Project* in order to reach a significant portion of individuals at risk. Implementation of these programs in schools may benefit a large set of students, improve school functioning as well as improve mental health and social-emotional development, working to protect adolescent females from the onset of eating pathology.

## Chapter II Methods

### Participants

Twenty-one female students from a large suburban high school were recruited to participate in *The Body Project* groups. Only students who submitted all pretest and posttest measures were included in the data analysis ( $n=18$ ). Participants in this study ranged from 14 to 17 years of age, with the mean age being 15.9 years. Students in grades 9 through 11 participated, meaning that data for 12<sup>th</sup> grade students is not accounted for in this sample. A variety of ethnicities were represented in this sample including Caucasian ( $n= 9$ ), Asian ( $n= 5$ ), Latina ( $n= 1$ ), and Other ( $n= 2$ ); one subject did not report their ethnicity. Both student athletes ( $n= 12$ ) and non-athletes ( $n= 6$ ) were represented in this sample (See Table 1).

Students who participated in this study were excused from three consecutive weeks of their regularly scheduled physical education class. A school psychologist and school social worker recruited students directly from their gym classes; only first period gym classes were selected for recruitment due to the availability of the principle investigator to run groups. All participants who participated were provided with a parent letter explaining the program (See Appendix A), a parental consent for participation (See Appendix B), and a student assent form for participation (See Appendix C). All participants returned both a parental consent and student assent to the school psychologist in order to participate in *The Body Project* groups. A total of three groups were run in order to accommodate all students who expressed interest in participation; groups ranged from four to nine participants per group.

TABLE 1  
*Participant Demographic Information*

<b>Variable</b>	<b>Number of Participants</b>
Age	
14	2
15	4
16	6
17	6
Grade	
9	2
10	5
11	11
Athletic Status	
Athlete	12
Non-Athlete	6
Ethnicity	
Caucasian	9
Asian	5
Latina	1
Other	2
Not Reported	1

### **Setting Demographics**

The selected high school was large, hosting approximately 3,000 students, grades nine through 12. The school was set within a diverse community with varying levels of socioeconomic status. Results from this participant set may therefore be applicable to a diverse set of adolescent females. According to the US Census Bureau (2010) the township in which is school was set, was a large community with 43,417 residents and 11,694 families. The township has a racial composition, according to the US Census Bureau in 2010, that is majority white, has a significant Asian population, and is also represented by African Americans, Native Americans, Pacific Islanders, and other ethnic groups. The per capita income for the township was reported to be approximately \$40,000 and a small portion of the district is reported to be below the poverty line (US Census Bureau, 2010).



## **Procedures**

*The Body Project* (Stice & Presnell, 2007) was used as the evidence-based program in order to run interactive, psycho-education body image groups at the selected high school. The principle investigator was solely responsible for running groups in order to ensure that the manual was followed precisely for each group. This program involves four, one-hour sessions completed in four consecutive weeks. At the school's request, groups were condensed into three, 90-minute sessions in order to reduce the number of physical education classes missed by students, and to remain consistent with the 90-minute block schedule by which the school operates. In order to accomplish this, session three was split and added to sessions two and four. This kind of adaptation of evidence-based programming is more the norm than the exception and is associated with interventions most likely to generalize to practice settings (Spiers & Champion, 2012). Participants were asked to regularly attend sessions; however, they were reminded that participation was voluntary and they may withdraw from these groups at any time during session one.

## **Measures**

A series of questionnaires measured students' level of school problems, social-emotional functioning, knowledge of the thin ideal, belief in ability to achieve long-term goals, and body satisfaction. These questionnaires were provided to students one week prior to participation in *The Body Project* groups and during the last group meeting. On both occasions, sealed envelopes with questionnaire contents were delivered either to the principal investigator, the school psychologist, or the school social worker. All survey contents were stored in the school psychologist's office in a locked box. Each participant

in *The Body Project* groups was assigned a numeric code to protect participants' identities.

*The BASC-2 Self-Report.* The Behavior Assessment System for Children-2, Self-Report (BASC-2) was completed in order to assess levels of school functioning as social-emotional functioning. The BASC-2 is a commonly used measure to assess such constructs and is frequently used in school as part of special education evaluations to determine levels of social-emotional functioning. The self-report form for adolescents, appropriate for ages 12-18, will be utilized. Students are asked to answer how statements apply to themselves as either being true or false, or as never, sometimes, always or often applicable to themselves. This assessment tool has strong internal consistency (median  $\alpha = .78$ ) and test-retest reliability (median  $r = .70$ ) regarding combined sex norms for test subscales. The BASC-2 also has strong internal consistency ( $\alpha = .94$ ) and test-retest reliability ( $r = .85$ ) regarding combined sex norms on the Emotional Symptom Index, which is reported to be a reliable indicator of general emotional problems (Reynolds & Kamphus, 2005). Subscales from this measure were utilized in order to assess students' self-esteem and school problems. For this study, the School Problems scale was used to determine if there is a change in school functioning, and the Self-Esteem measure was utilized to assess changes students' self esteem. Using individual scales and measures may have impacted the strength of the BASC's strong psychometric properties, however internal consistency in this measure remained acceptable.

*The Grit Scale.* The Grit is a 12-item self-report survey designed to determine individual's perseverance and passion for long-term goals (Duckworth, Peterson, Matthews & Kelly, 2007). This scale was used to assess students' beliefs regarding their

ability to achieve goals both before and after participating in *The Body Project* groups. This will also contribute to further understanding of their social and emotional functioning. Students check statements as very much like me, mostly like me, somewhat like me, not much like me, or not like me at all. This scale has been found to demonstrate strong internal consistency and test-retest reliability (Duckworth & Quinn, 2009). This measure has also been reported to have strong consensual and predictive validity (Duckworth & Quinn, 2009). This measure was used to assess student's beliefs regarding their ability to achieve long-term goals. For this study, the Grit Scale had good internal consistency at both pretest ( $\alpha = .70$ ) and posttest ( $\alpha = .73$ ).

*The Body Project Questionnaires.* This is a set of two questionnaires including the *Ideal-Body Stereotype Scale-Revised* and the *Satisfaction and Dissatisfaction with Body Parts Scale*. Each of these scales is a self-report measure, asking students to rate responses on a five point likert scale; students are asked to respond to statements and questions as they apply to themselves.

Thin ideal internalization was assessed using an 8-item modified version of the *Ideal-Body Stereotype Scale-Revised* (IBSS-R; Stice, Ziemba, Margolis, & Flick, 1996). Item scores are summed and then averaged. The IBSS-R has good internal consistency ( $\alpha = .83$  to  $.91$ ), test-retest reliability ( $r = .67$  to  $.80$ ) and convergent and predictive validity (Stice & Agras, 1998; Stice et al., 1996). This measure was used to assess students' subscription to the culturally prescribed thin ideal. For this study, the measure was found to have a strong internal consistency at both pretest and posttest ( $\alpha = .78$ ).

Body dissatisfaction was assessed using the *Satisfaction and Dissatisfaction with Body Parts Scale* (SD-BPS; Berscheid, Walster, & Bohrnstedt, 1973). This scale has good internal consistency ( $\alpha = .94$ ), 3-week test-retest reliability ( $r = .90$ ) and predictive validity for bulimic symptom onset (Stice et al., 2006). This was used to assess students' level of body dissatisfaction; the measure continued to have strong internal consistency at both pretest ( $\alpha = .83$ ) and posttest ( $\alpha = .93$ ).

### Chapter III

#### Results

During *The Body Project* groups the principal investigator of the study maintained progress notes and attendance records in order to account for variables that may influence results. This also facilitated maintaining treatment integrity and ensured that the program was delivered as it was intended. During these groups all students maintained a high level of participation in groups and students attended all group, with the exception of two students. One student in the first cycle of groups missed the second session of group, however she attended the final group and was able to access material covered during the missed session. This participant did not submit posttest results, and thus data in this study was not influenced by her absence. Her pretest results were not utilized for data analysis. During the second cycle of groups, a student missed the final group session, and thus missed content from the program; this student's data were accounted for in the study. Based on the high attendance rate and participation of group members, it is likely that statistical results presented next were not influenced by the delivery of the program, as a high rate of treatment integrity was maintained and participants were actively engaged in the intervention.

Initially, independent paired T-tests were conducted in order to determine if there was a significant change from pretest to posttest for all measures (See Table 2). A significant change was not found for the Grit ( $t(14) = .496$ ), or the BASC self-esteem measure ( $t(16) = .898$ ). Therefore, there was no significant change detected on student scores on these particular measures before and after participation in *The Body Project*. A significant difference was found from pretest ( $\mu = 21.33$ ,  $SD = 4.12$ ) to posttest ( $\mu = 25.06$ ,

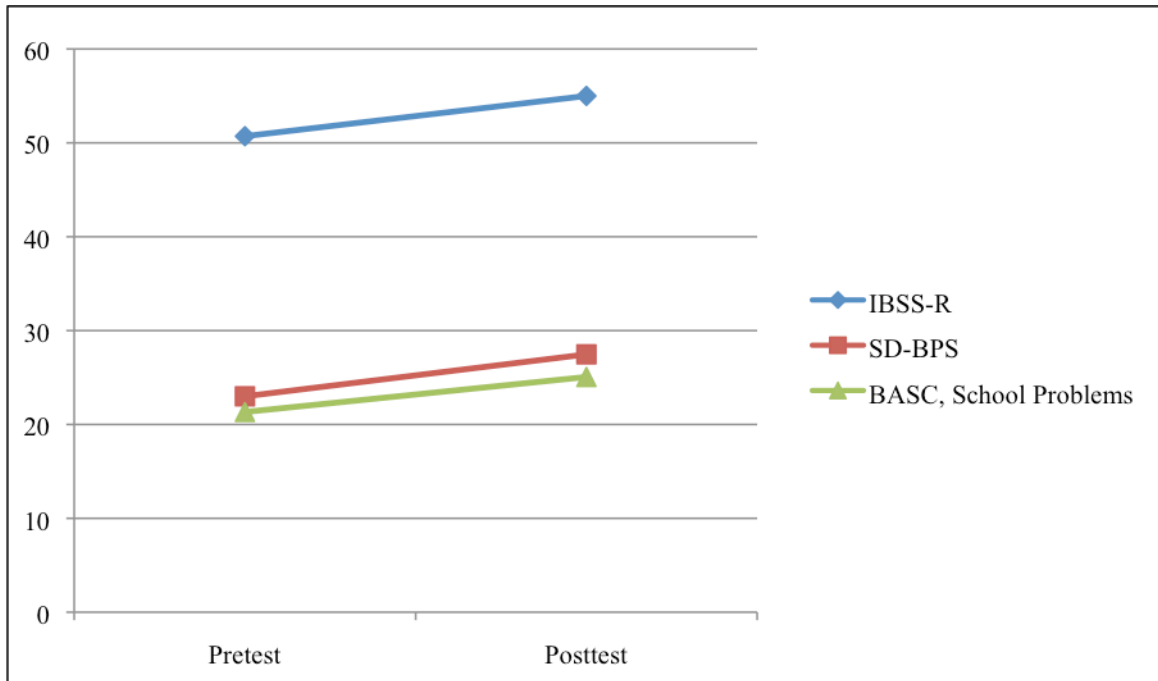
SD= 4.41) for the IBSS-R ( $t(16) = .003$ ). A significant increase in students' scores was found, meaning that students endorsed fewer items consistent with the thin ideal at posttest than they did at pretest. A significant difference from pretest ( $\mu = 23.00$ ,  $SD = 5.53$ ) to posttest ( $\mu = 27.47$ ,  $SD = 7.63$ ) was also found for the SD-BPS ( $t(16) = .008$ ). An increase in students' scores was also found for this measure. The increase in scores demonstrates students endorsing more items consistent with body satisfaction and fewer items consistent with body dissatisfaction. Finally, there was also a significant difference in scores between pretest ( $\mu = 50.71$ ,  $SD = 10.42$ ) and posttest ( $\mu = 55.00$ ,  $SD = 11.50$ ) for the BASC School Problems scale ( $t(15) = .026$ ). This measure, again, expresses an increase on student scores from pretest to posttest (See Figure 1). The elevated scores, however, are consistent with the rating of items consistent with school problems. Scores both at pretest and posttest are considered in the normal range, and were not elevated to an at-risk or clinically significant level.

TABLE 2  
*Independent Paired T-Test Results*

Assessment Measure	Pretest Mean	Posttest Mean	<i>t</i>	<i>df</i>
Grit	36.06	37.11	0.496	14
BASC, Self-Esteem	43.22	43	0.898	16
IBSS-R	21.33	25.06	.003*	16
SD-BPS	23	27.47	.008*	16
BASC, School Problems	50.71	55	.026*	15

\* = T-test is significant at the .05 level

FIGURE 1  
*Significant Results for Paired Independent T-Tests*



To better understand the results from independent paired t-tests further analyses were conducted for measures yielding significant results. An analysis of covariance (ANCOVA) was conducted in order to assess if specific interactions between variables were related to changes in scores from pretest to posttest for the IBSS-R, the SD-BPS, and the BASC School Problems scale. Variables included in this analysis include age, grade level in school, and whether or not a student was an athlete. There was a significant interaction effect found for age and pretest scores on the IBSS-R. The difference between pretest and posttest scores on this measure is moderated by age ( $F(3) = 5.16, p = .024$ ) (See Table 3). It appears that students who are 14 years of age ( $\mu = 27.50, SD = 2.12$ ) had higher scores than those students who were 15 ( $\mu = 24.67, SD = 8.08$ ), 16 ( $\mu = 24.33, SD = 2.42$ ), or 17 years of age ( $\mu = 24.17, SD = 4.45$ ). Therefore, it is possible that the 14-year

old students in this sample had the most considerable decrease in their subscription to the thin ideal. No other significant findings were yielded through the ANCOVA analysis.

TABLE 3  
*Significant ANCOVA Results*

Assessment Measure	Variable 1	Variable 2	<i>F</i>	<i>df</i>	<i>p</i>
IBSS-R	Pretest Score	Age	5.16	3	.024*

\* = ANCOVA is significant at the .05 level ( $p \leq .05$ ).

Chi square tests were also run for the IBSS-R, SD-BPS, and BASC School Problems scale in order to further assess possible relationships between pretest and posttest scores with particular variables including grade and status as an athlete. Grades nine and 10 were classified as underclassmen and grades 11 and 12 were categorized as upperclassmen. Athletic status was divided by students either indicating that they participated in a sport or they did not participate in a sport. Clinical judgment was used to dichotomize scores on assessment measures. On the IBSS-R and SD-BPS scores that were considered either neutral or positive totals were counted as one category. This means that scores consisted of answers that opposed the endorsement of the thin ideal (range 25-40) or scores that were either indifferent or endorsed the thin ideal (range 0-24). This decision was made in order to identify students who either disagreed or strongly disagreed with thin ideal statements as opposed to students who lacked opposition against the thin ideal or agreed with statements consistent with the thin ideal. A similar logic was used to dichotomize scores on the SD-BPS. In this case scores were divided between those that aligned with endorsement of body dissatisfaction or were indifferent toward body dissatisfaction (range 0-27) and those scores that disagreed with statements



endorsing body dissatisfaction (range 28-45). This allowed those participants who were satisfied with their bodies to be distinguished from those participants who were either indifferent or dissatisfied with their bodies. The BASC School Problems scale was broken up into three categories including normal (0-59), at-risk (60-69), and clinically significant (70 and above) ranges; these categories have been determined and established by test makers.

The chi square tests yielded limited results. A relationship was found between SD-BPS posttest results and grade ( $X^2(1) = 8.242, p = .004$ ) (See Table 4). There were no underclassmen that demonstrated scores suggesting body dissatisfaction at posttest, however there were eight upperclassmen with such scores. There were 6 underclassmen and three upperclassmen that demonstrated scores endorsing body satisfaction. Thus, it appears participants in lower grades were more likely to endorse body satisfaction after participating in the intervention. A relationship was also found between the BASC School Problems scale at pretest and grade ( $X^2(2) = 6.679, p = .035$ ). At pretest, it was found that one underclassman and zero upperclassmen demonstrated scores in the normal range; two underclassmen and zero upperclassmen demonstrated scores in the at-risk range; three underclassmen and 11 upperclassmen demonstrated scores in the clinically significant range. Upperclassmen appear to be more associated with clinically significant school problem scores, while underclassmen tend to have a wider variety of scores. Therefore, a relationship was detected between students' posttest scores related to body dissatisfaction and grade as well as their pretest scores related to school problems and their grade.

TABLE 4  
*Significant Chi Square Results*

Assessment Measure	Variable 1	Variable 2	$X^2$	$df$	p
SD-BPS	Posttest Score	Grade	8.24	1	.004*
BASC, School Problems	Pretest Score	Grade	6.68	2	.035*

\* = Chi Square is significant at the .05 level ( $p \leq .05$ ).

## Chapter IV

### Discussion

#### Purpose of the Study

Disordered eating is a prevalent problem in American female adolescents. Adolescent females are considered to be at greater risk for the onset of disordered eating than other populations, as they experience higher rates of diagnosable eating disorders than the general population (Eddy et al., 2008). Female adolescents may be more susceptible to risk factors associated with disordered eating including adolescence as a developmental period and greater adherence to the culturally promoted thin ideal. This population has also been found to experience significant body dissatisfaction, accumulation of body mass, and dieting behaviors, all of which are associated with the onset of eating pathology.

Disordered eating patterns in this population are of concern given the significant mental and physical health impacts that may arise as a consequence. In general, disordered eating may interfere with female adolescents' functioning. Due to the significant risk adolescent females face regarding the onset of disordered eating as well as the substantial consequences that may occur from such eating patterns, prevention and intervention initiatives are a vital area of study. Thus, *The Body Project* was chosen as an intervention initiative at a large suburban high school in order to assess its possible effects in inhibiting adolescents from experiencing patterns of disordered eating as well as improving their overall functioning.

This study posited five hypotheses related to the improvement of adolescent functioning from pretest to posttest after participating in *The Body Project*. The

independent variable in this study included participating in three 90-minute intervention group sessions, where the principle investigator delivered the program. Intervention groups were considered to be equal, as all participants in this study were actively engaged and involved, according to observations and progress notes. Only two participants were absent from sessions, and of these participants only one of these participants' data was accounted for in this study. Therefore, it is believed that the intervention was equitable for all participants. Dependent variables include survey data measuring: 1) internalization and subscription to the thin ideal, 2) level of body dissatisfaction, 3) level of belief in the ability to achieve long-term goals, 4) level of self-esteem, and 5) experience of school problems. All data was self-reported, and therefore participant outcome should be interpreted through their own perspective, and not that of others such as adults within the school setting where the intervention was delivered. Data was collected over a relatively short period of time, with no more than 3 months occurring between the completion of pretest and posttest for any given participant, therefore there was limited time for participants to engage in other activities that might either interfere or bolster the impact of intervention. Given the relatively limited data collection period, there is no information available on long-term outcomes from this study, thus results must be solely interpreted as short-term student outcomes. The following will be a discussion of the hypotheses and results found in this study.

### **Hypothesis 1: Change in Subscription to the Thin Ideal**

A significant risk factor for the onset of disordered eating is internalization of the thin ideal. *The Body Project* directly addresses this risk factor by having participants actively argue against culturally prescribed norms of beauty, including the thin ideal.

Therefore, it was hypothesized that participants would experience an increase in scores on the *Ideal-Body Stereotype Scale-Revised*, indicating less acceptance of this ideal. As predicted, participants' scores were significantly increased from pretest to posttest on the IBSS-R, indicating reduced subscription to the culturally sanctioned thin ideal after participating in groups. Thus, results were consistent across students who all participated in these intervention groups. This finding is consistent with previous research presented.

Variables that might be associated with significant changes in posttest results for thin ideal internalization were explored in order to gain further understanding of results. Demographic information was collected on ethnicity, grade, age, and status as a student athlete. The range of ethnicities was deemed too restricted to yield reliable results, and therefore was not utilized. Thus, age, grade, and status as an athlete were considered as possible factors, which might influence results. An interaction between age and pretest scores was the only finding found to moderate results on posttest scores. It appeared that 14-year-old students had higher scores than their older peers, meaning the intervention may have yielded a greater impact for this particular group. It is possible that the intervention has more influence on younger adolescents than older adolescents, which might be considered when selecting students to participate in the groups. It is possible that younger students have experienced less exposure to media, making them more susceptible to intervention effects and less susceptible to cultural standards of beauty. The media has been found to be a significant contributing factor to thin ideal internalization, thus more limited exposure may be a protective factor that influenced younger students. More limited media exposure, may have allowed for the intervention content to make a greater impact on these students as compared to older students who

have received more exposure to thin ideal content presented in the media. Future studies of this intervention might further explore an optimal age group at which the intervention may have the greatest impact, as well as factors that contribute to a particular age group receiving greater benefits from the intervention program.

### **Hypothesis 2: Change in Level of Body Dissatisfaction**

Increased rates of body dissatisfaction are associated with the onset of disordered eating. *The Body Project* also targets this by encouraging participants to discuss their positive body attributes, and how to accept and celebrate their bodies. It was predicted that participants would experience a decrease in body dissatisfaction from pretest to posttest, based on their receipt of intervention. As expected there was a significant increase in survey scores on the *Satisfaction and Dissatisfaction with Body Parts Scale*, meaning that participants endorsed less items associated with body dissatisfaction, and more items related to body satisfaction. This finding is also consistent with previous studies presented.

Variables that might be associated with significant changes in posttest results for body dissatisfaction were also explored in order to gain further understanding of results. The only significant finding yielded that student grade level was associated with higher rates of body satisfaction at posttest, as underclassmen were more likely to endorse scores associated with body satisfaction than were upperclassmen. The majority of upperclassmen participating in this study reported scores associated with body dissatisfaction at posttest, while underclassmen were more likely to report scores associated with body satisfaction. Thus, ninth and tenth grade students may have experienced greater impact on their body satisfaction than did upperclassmen. This

should be considered when deciding which students to include in intervention groups. Students in lower grades may still be enduring puberty and body maturation, meaning that they have had fewer changes in their body shape. This may mean that they have had a relatively shorter time to experience body dissatisfaction, which may allow for the intervention to have a greater impact to this group. Students in higher grades may have had a longer temporal period to experience body shape changes, and thus may be likely to experience greater body dissatisfaction; this might make it more difficult to for the intervention to make an impact on the. Additionally, as students age their ability to think abstractly may increase, meaning that the body changes they experience may become more significant. Thus, students' body satisfaction may not only be related to weight, but their shape. Younger students in lower grades may have less ability to engage in abstract reasoning, and therefore may experience a less significant impact in their body satisfaction related to body shape. Future studies may further assess the difference in body dissatisfaction outcomes demonstrated between lowerclassmen and upperclassmen, as this may occur in other settings.

### **Hypothesis 3: Change in Self-Esteem**

Self-esteem is another factor associated with the onset of disordered eating; lower rates of self-esteem have been associated with the onset of disordered eating. *The Body Project* indirectly targets this construct by promoting girls satisfaction in their bodies, which may improve their overall image of themselves and their identity. There was no significant change from pretest to posttest on the Behavior Assessment System for Children- 2, which measured participants' self-esteem. Therefore, in this study this hypothesis was not proven to be true. It is possible that because this intervention program

does not directly address self-esteem, it was not impacted as a result of participation, thus scores did not significantly change from pretest to posttest. It is also possible that the BASC self-esteem scale did not have enough items related to body image, which is the construct targeted by the intervention program. The BASC only includes three out of eight items directly related to physical appearance, thus it may not measure self-esteem in a way that was sensitive to intervention content. It is also possible that due to a limited sample number, there was not adequate statistical power to detect a significant change in results from pretest to posttest. Future studies may consider an assessment measure that is more directly related to body image, as well as aim to utilize a larger sample size.

#### **Hypothesis 4: Change in Beliefs Regarding the Ability to Achieve Long-Term Goals**

Based on the hypothesis that *The Body Project* intervention would increase levels of self-esteem, it was predicted that participants might also experience an increase in Grit survey scores related to their belief in their ability to achieve long-term goals. It was thought that this might be a manifestation of self-esteem that could be experienced in school and other facets of a students' life. However, there was no significant change on the Grit survey measuring this construct from pretest to posttest. It is, again, possible that because the program did not directly address this construct that the intervention did not impact these scores. Additionally, it is possible that the limited sample number may have lacked adequate statistical power to detect a significant change in results from pretest to posttest.

#### **Hypothesis 5: Change in Level of School Problems**

Based on the information regarding negative consequences that may arise from disordered eating, it was expected that school problems might be reduced after



participating in intervention groups. Disordered eating is associated with decreased cognitive and executive functioning, and therefore may contribute to school problems. There was a significant change in school problems as measured by the BASC from pretest to posttest, however there was an increase in scores. This means that participants experienced a greater level of school problems from pretest to posttest, rather than experience a decrease in these problems as predicted. Despite the significant increase in scores, the mean score continued to fall within the normal range of scores, and was not elevated in the at-risk or clinically significant range. This is promising, because despite a significant increase in the school problems scores from pretest to posttest it is unlikely that participants were experiencing significant school problems at either pretest or posttest time points. While the intervention did not directly address school related issues, students were asked to miss gym class for three consecutive periods. It is possible that missed class time impacted students in a variety of ways, leading to increases in their school problems scores. The school problems scale on the BASC includes the students' attitude toward school, attitude to teachers, and sensation seeking. It is possible that missing classes influenced these factors, altering scores significantly from pretest to posttest. For example, a teacher and student may have experienced relationship issues due to missed classes, missed work, etc. The School Problems scale, however, assesses students' school problems overall and not just a particular class. Thus, there may have been a number of confounding factors that resulted in an increase of students outcome measures on this scale that are unknown. Given that students answered posttest questionnaires up to three months after the pretest questionnaires, a variety of factors could have occurred to influence their experience of problems in the school setting.

Therefore, student scores may have been altered from pretest to posttest due to a variety of factors, which may or may not have been related to participation in *The Body Project* groups.

Variables that might be associated with significant changes in posttest results for school problems were also explored in order to gain further understanding of the increase in scores from pretest to posttest. It appears that at pretest upperclassmen were more likely to be associated with school problems scores in the clinically significant range. Thus, before the intervention these students may have experienced greater school problems. It is possible that this influenced the impact that intervention had on students given its administration in the school setting. This may be an area of future exploration in order to gauge better understanding of factors related to school that may influence the effect of intervention on particular groups of students.

### **Conclusions**

Disordered eating is a significant problem in adolescent females, leading to a number of physical and mental health consequences that may be harmful to students. This study aimed to explore the impact of an eating disorder intervention in a public school setting to address possible issues of school and general functioning. It was predicted that the intervention would be related to significant positive outcomes from pretest to posttest assessments regarding subscription to the thin ideal, endorsement of body dissatisfaction, perception of ability to achieve long-term goals, experience of school-problems, and experience of self-esteem. Independent t-tests detected a decrease in body dissatisfaction as well as subscription to the thin ideal from pretest to posttest. This replicates the work of Stice and colleagues, who have consistently found these results (Stice & Presnell,

2007; Stice & Shaw, 2002; Stice & Whitenton, 2007). Factors related to this change appeared to be age and grade. Findings suggest that those high school students who were younger or underclassmen were associated with these positive changes. Findings suggest that it is possible that younger high school students experienced greater impacts in their functioning than did their older peers in higher grade-levels.

During intervention groups the principle investigator observed older students to report more comments related to body dissatisfaction and social pressure to achieve a particular body type. Specifically, a group with solely 11<sup>th</sup> grade students, reported high levels of body dissatisfaction and belief in the thin ideal that had led them to changes in mood and dieting behaviors. This group reported the most significant rates of body dissatisfaction and thin ideal internalization observed by the principle investigator. One member of this group experienced a past diagnosis of anorexia nervosa, and has been treated for symptoms of disordered eating. Another group member was a student athlete, participating in several sports including track and field and was also an equestrian; she reported feeling pressure to maintain a particular body shape in order to enhance her athletic performance. Other group members reported being particularly influenced by significant social pressure to obtain a particular body image, and reported difficulty in understanding how the intervention content would change their views. Other groups had 11<sup>th</sup> grade students who were mixed with underclassmen, and their rates of body dissatisfaction were not overtly noted to the same degree as this specific group. This group in particular, however, demonstrated the difficulty older students might have exhibited in receiving intervention material. Given the high rate of body dissatisfaction and thin ideal internalization experienced by these older students, it may have been more

difficult to influence their attitudes and behaviors than other students. It is possible that other older students had similar experiences of preexisting body dissatisfaction and thin ideal internalization, leading to lesser impact from participation in *The Body Project* groups. The principle investigator also observed younger students to be more enthusiastic in their participation in groups. While all students who participated in the *Body Project* groups were perceived to be actively involved, students in the 9<sup>th</sup> and 10<sup>th</sup> grade tended to be more emphatic when countering the thin ideal than older students in some instances. Some ninth grade students reported that they did not experience pressure to obtain a particular body image nor were they dissatisfied with their bodies. These students were also active in supporting other students in the group and worked to promote their body acceptance. Therefore, principle investigator observations may facilitate greater understanding of statistical findings. Older students, especially those who participated in a group containing only 11<sup>th</sup> grade students, reported high levels of body dissatisfaction and thin ideal internalization during group sessions. Younger students were observed to generally report lower rates of these constructs during groups. Thus, younger students may have been more open to receiving content than older students, resulting in their generally more positive outcomes regarding experience of body dissatisfaction and thin ideal internalization. This should be considered when recruiting students to participate in groups in a school setting, as they may receive greater benefits from participating than their older peers.

Independent paired t-tests also demonstrated a significant difference from pretest to posttest was also found for experience of school problems, however school problems appeared to increase. It appeared that grade level and pretest score was related to elevated

posttest scores. It is possible that older students experienced greater school problems for a variety of unknown reasons. Given that students were coming from a limited set of teachers, it is possible that upperclassmen experienced relational difficulties with their teachers that may have increased their experience of school problems. It is also possible that missed class time and class work influenced their rate of school problems.

Upperclassmen may have also experienced relational issues with peers due to missed class time. Students may have reported school problems not only related to physical education classes missed to participate in groups, but school in general. During the majority of groups, students also reported that they were preparing for academic midterms; students may have experienced heightened problems in school due to this specific circumstance. While these hypotheses are speculative, they may be considered for future implementation of this intervention within the school setting. Future studies may consider and explore the gain in school problems from participation for those students in upperclassmen grade levels, and whether or not problems are related to group participation. Practitioners may consider administering groups during a relatively low-stress time of the school year, when academic demands are less than those times such as midterm and final exams. Practitioners might also consider what specific classes students miss for participation in groups, and whether or not always missing the same class is more beneficial or harmful to students' experience of school problems.

### **Limitations**

Unfortunately, due to financial and time constraints as well as constraints put forth by the school, there were limitations to this study. The first of which includes a very small sample size. Since there was only one individual able to implement the

intervention, the principal investigator, and no financial means to enlist the help or train others, a small sample size was the only feasible options for this study. Given that the principle investigator was the only one to implement the program, it was delivered the same to each group and other facilitators do not present as a confounding variable. It is possible, however, that the personality and style of interpersonal interaction put forth by the principle investigator influenced participants' experiences and outcomes. The principle investigator is a young, Caucasian female that may have related to participants differently than other individuals. Thus, the group facilitator in this study may have influenced results.

Students were recruited from a limited set of physical education classes, including only first period classes, due to the principal investigator's limited availability to facilitate groups. This is a confounding variable, which may have influenced the results yielded from this study. Students are not placed in first period physical education classes for any particular reason; students are in these classes to accommodate their overall academic schedule. Findings from this study may not be generalized to any other population except those adolescents in this particular school district in New Jersey. Furthermore, students in groups largely represented Caucasian and Asian ethnicities; therefore results may only generalize to these groups of adolescents. Ethnic beliefs regarding female beauty and attractive qualities may differ, and therefore influence students' beliefs in the thin ideal as well as attitudes and behaviors related to this ideal. Some ethnicities may subscribe more to the thin ideal than others, and some may offer more protective factors from such an ideal. Therefore, results from this study are applicable only to the restricted ethnicities represented. Student outcome data was also

limited as data was only collected immediately after the conclusion of participation and no time points. Therefore, this study did not yield data regarding long-term outcomes.

Due to the small sample size, it was difficult to generate statistical power to detect significant results. This sample was also limited because it was not random. The school district was specifically chosen due to a prior relationship that the principal investigator had with employees had in the district, which facilitated obtaining permission to conduct research within the high school. In order to gain this permission, it was agreed that participants would not only be voluntary, but self-selecting. Therefore, participants who engaged in this intervention had some motivation to participate in groups. Due to self-selection, students may have been more engaged in the intervention than would a random sample, and may have experienced more incentive to gain benefits from participation.

### **Future Directions**

The current study replicated two major findings that have been published in previous literature, and also generated a new finding. Students who participated in this study were found to experience a significant change in body dissatisfaction and thin ideal internalization from pretest to posttest, demonstrating a decrease for both factors. Another finding included a significant change in experience of school problems from pretest to posttest, however this change demonstrated an increase in reported problems. Other findings indicated that age and grade level might have interacted with pretest scores to influence outcomes on body dissatisfaction, thin ideal internalization, as well as school problems. Although this study yielded significant results, the study can only be considered exploratory due to its small sample size and limited statistical power. Future research in school-based implementation of this intervention would be beneficial,

especially utilizing a larger sample size over a more diverse set of schools with long-term data collection to further assess student outcome. The use of random sampling and a control group would also benefit future research projects.

This is, perhaps, one of the first endeavors whereby this intervention was adapted and implemented for a public school setting. Future research in this area would be beneficial in several ways. First, future research may consider optimal ways to adapt the program to fit within the context and schedule of a school. In this study, the intervention was condensed into three sessions, rather than four sessions, in order to fit the school's daily schedule. It is unknown how the condensing of this program may have influenced outcomes measures, and may be an interesting and important area for future research. The principal investigator, who is an advanced doctoral student in a school psychology program, delivered the intervention. Thus, the intervention was delivered by a relatively skilled and knowledgeable, training practitioner with significant experience in running groups with adolescents. Future research may explore the possibility of having school staff such as trained school psychologists, social workers, and other mental health professionals implement the intervention. It is possible that having staff within schools deliver the intervention, it may be an easier and more fluid process for implementation, while maintaining the integrity of the treatment. It may also be interesting to compare how other school professionals may be trained to implement this intervention during classes such as health and physical education, allowing greater access and flexibility in who and how the intervention is delivered. It is important to consider what training, skills, and knowledge are required to successfully implement this intervention and yield successful outcomes for students. It is also important to investigate how the relationships



developed with an individual implementing the program may impact student outcomes as well as how different context of delivery may influence these outcomes. For example, if a teacher is delivering this intervention in a classroom setting students may not feel as comfortable to share as they might in a smaller group setting with either a teacher or a different implementer. Those individuals within a school who have clinical training and backgrounds may also be able to relate to students differently than teachers and other staff more typically encountered by students; students may also feel more entitled to confidentiality and feel more comfortable when removed from their typical academic setting. It is also important to consider the age, gender, experience, and other attributes of an individual, which may impact the ways relationships develop and influence the overall group process. While these factors may be difficult to account for, they may be vital variables to understand in producing a positive experience in groups as well as positive student outcomes.

Future studies may also further explore the most optimal population for whom to deliver this intervention within a school setting. Current findings suggest that younger high school students in lowerclassmen grades may have received greater benefits from participation. Future work may further investigate students who would maximally benefit from participation. In general, future studies may explore how to expand implementation of this program and determine for what students it will most benefit.

While future study of this intervention program and its implementation in school contexts are important, the current study has demonstrated important information for current school psychologists and practitioners. First and foremost, this study has demonstrated it is feasible to implement an evidence-based curriculum in a school, and

adapt it to fit the school's needs. In this study the program was condensed into three sessions from the original four-session format presented in the curriculum in order to accommodate the school's 90-minute class periods. The results yielded from this study replicated those in previous research; therefore the alteration of program delivery is not believed to significantly alter intervention effects. This is promising, as it affords current practitioners preliminary evidence that making alterations in program delivery that does not compromise program content, results in effective intervention implementation. Current practitioners may consider using evidence-based programs such as *The Body Project* more flexibly than prescribed by research and reach similar outcomes. Overall, this may encourage current school practitioners to consider use of evidence-based programs in the school environment, as they may be adapted to fit the needs of the school context.

*The Body Project* intervention is a practical intervention that demonstrates benefits to female students. School psychologists working in high schools, who can obtain access to this relatively inexpensive and easily implemented prevention/intervention program, are encouraged to seek avenues to deliver it within their schools. School psychologists are trained professionals who have existing skills to implement this type of program and are oriented to their school's context, making them suited group facilitators. Given that school psychologists may experience time constraints they may not be able to deliver the program to all students who could potentially benefit. Results from this study indicated that younger students in lower grades received greater benefits after participating in intervention groups. School psychologists delivering this program may consider selecting participants from this population to best utilize the time

they have to deliver such a program. Practitioners based in high schools may be able to benefit young female students by lowering rates of body dissatisfaction and thin ideal internalization, which may serve to protect these students from patterns of disordered eating. This also allows school-based practitioners such as school psychologists to expand their traditional role and utilize more of their skills and knowledge base.

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## Appendix A

## Letter to Parents

***THE BODY PROJECT:***  
***An Opportunity for Student Learning and Growth***  
Evaluating Student Outcomes after Participation in *The Body Project*

Dear Parent,

My name is Lyndsi Silberman. I am currently a doctoral student at the Graduate School of Applied and Professional Psychology at Rutgers University. As part of my training I am a school psychology intern at South Brunswick High School. Over the past year I have truly taken a great interest in the district's students and larger community, and have worked with the school to create an initiative that I believe will greatly benefit our female athletes.

South Brunswick High School will be carrying out a program to benefit the district's female athletes called, *The Body Project: Promoting Body Acceptance and Preventing Eating Disorders* (Stice & Presnell, 2007). It is an evidence-based curriculum to educate students on cultural standards of body image beauty, accepting individual bodies, and healthy life styles in order to benefit their growth as young women in the school community. I will run *The Body Project* groups for these students from April 2012-December 2012. Students who participate in groups will be asked to stay one hour after school for four consecutive weeks to participate. Participation in this group is completely voluntary and not required by the school.

South Brunswick High School has granted me permission to collect survey and questionnaire data from students who participate in *The Body Project* as part of fulfilling a dissertation requirement. Students who participate will be asked to fill out several surveys and questionnaires, which I provide both before and after students participate in the group. The surveys will ask questions about self-esteem, school functioning, how students socialize, and body satisfaction. All questionnaires will be anonymous, meaning they will contain no identifying information or be linked to your child in any way.

This group is an opportunity for your child to develop new knowledge, skills, and attitudes about themselves and cultural definitions and expectations of female body image. Students will participate in discussions and activities that allow them to explore these topics and formulate opinions with their peers and teammates.

Attached to this letter is a consent form, containing more detailed information. If you would like your child to have an opportunity to participate in *The Body Project*, she will need a signed consent. She will then have the choice to participate in the group, but will not be required to do so.

I hope that you find this opportunity for your child as exciting as I do and will consider allowing your child's participation!

Sincerely,  
Lyndsi Silberman  
South Brunswick High School, School Psychology Intern  
Second Year Doctoral Student, School Psychology  
The Graduate School of Applied & Professional Psychology  
Rutgers, The State University of New Jersey

## Appendix B

## Parent Consent

***THE BODY PROJECT:***  
***PARENT/GUARDIAN INFORMED CONSENT***

*A Minimum Risk Study*

Evaluating Student Outcomes after Participation in *The Body Project*

Your child is invited to participate in an educational program and research study conducted by Lyndsi Silberman, doctoral student at the Graduate School of Applied & Professional Psychology, Rutgers University as part of a dissertation requirement. The purpose of this research is to study the impact of your child's participation in *The Body Project* groups at South Brunswick High School. *The Body Project* is an evidence-based group designed to education students about positive self-image, as well as healthy lifestyles and personal development.

All female athletes at South Brunswick High School between the ages of 14 and 18 years of age are invited to participate in this study. Individual participation will involve staying after school for one hour for four consecutive weeks. Additionally, participants will be asked to complete several questionnaires and surveys before participation begins and once participation has been completed. These measures will be delivered directly to the students in an envelope at school, the week prior to the first group meeting. Materials will be returned to Ms. Silberman during the first group meeting. When the group is completed your child will receive materials in another envelope during the last group meeting and can return the sealed envelope directly to Ms. Silberman or to her supervisor, Dr. Rebecca Hye, who will secure all materials. The surveys will assess your child's beliefs in their ability to achieve, functioning in school, knowledge regarding cultural standards of beauty and healthy life styles, and socialization with peers. These surveys should take approximately 30 minutes to complete. All materials will be distributed and collected by either Ms. Silberman or Dr. Hye, who will keep them secure. No one will have access to completed surveys, except researchers associated with this study.

Your child will be asked to participate in the following:

- Group discussions with peers regarding their beliefs about beauty and cultural standards of body image.
- Activities in *The Body Project's* workbook, provided by the researcher. Activities include role-plays, written narratives, thought exercises, and self-reflection prompts.
- Home activities to be completed in between group meetings in the workbook. Activities include written narratives, thought exercises, and self-reflection prompts.
- Completion of surveys and questionnaires measuring student outcomes.

All participants will be asked to keep discussions confidential.

If you agree to allow your child to take part in this study, she will be assigned a random code number that will be used to fill out all questionnaires and surveys. Her name will only appear on a list of participants, for contact during the duration of groups should it be necessary to change the time, date, or location of group meetings. This list will be destroyed at the conclusion of the group. Her name will not be linked to her numeric code assigned to her. There will be no way to link your child's responses on questionnaires or surveys back to her. Therefore, all data collection is anonymous and free from identifying information.

There is some risk associated with participation in this study. The foreseeable risk for this study includes the possibility of emotional distress and self-disclosed disordered eating behaviors, acquired either before or during group participation. This is an educative program and is not designed to evoke such responses, however a school social worker at South Brunswick High School has been appointed as the point of referral for such instances. The school social worker will conduct a screening to determine if further action is necessary and you will be notified. Rutgers University and associated personnel will not be responsible for any adverse experiences from participation.

Participation in this study is completely voluntary. Your child may choose not to participate, and may withdraw participation at any time during the course of the group. In addition your child may choose not to answer any items on questionnaires or surveys with which she is uncomfortable. Your child must volunteer and provide consent to participate in this group in addition to obtaining parent/guardian consent.

This research is confidential. The research records will include some information about you and this information will be stored in such a manner that some linkage between your identity and response in the research exists. Some information collected about you includes your age, grade, ethnicity, and athletic team. Please note that we will keep this information confidential by limiting individual's access to the research data and keeping in a secure location. Data will be kept in a locked box, which only Ms. Silberman and her dissertation committee as well as the Institutional Review Board at Rutgers University are permitted to see, except as may be required by law. This lock box will be secured either in a secure office in South Brunswick High School or the residence or offices of Ms. Silberman and her dissertation committee. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated and the school district will remain anonymous. All study data will be kept for 3 years after the study is complete. After three years original data will be destroyed.

If you have any questions about the study or procedures, you may contact Lyndsi Silberman at 443-604-1757 or at [lyndsi.silberman@gmail.com](mailto:lyndsi.silberman@gmail.com). If you have any questions about your rights as a research participant, you may contact the Sponsored Programs Administrator at Rutgers University:

Rutgers University Institutional Review Board for the Protection of Human Subjects

Office of Research and Sponsored Programs  
3 Rutgers Plaza  
New Brunswick, NJ 08901-8559  
Tel: 848-932-0150  
Email: humansubjects@orsp.rutgers.edu

You will be given a copy of this consent form for your records.

If you would like your child to have the choice to participate in this group and study please sign below:

Parent/Guardian: \_\_\_\_\_ Date: \_\_\_\_\_

Principal Investigator: \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix C

## Student Assent Form

***THE BODY PROJECT:  
STUDENT INFORMED ASSENT***Evaluating Student Outcomes after Participation in *The Body Project*

You are invited to participate in *The Body Project*, a group designed to educate students about positive self-image, as well as healthy lifestyles and personal development. The Body Project is being conducted by Lyndsi Silberman, a doctoral student at the Graduate School of Applied & Professional Psychology, Rutgers University as part of her dissertation research. The purpose of this research is to study the impact of your participation in *The Body Project* groups at South Brunswick High School.

All female students at South Brunswick High School who are enrolled in a physical education class and are between the ages of 14 and 18 years of age are invited to participate in this study. Individual participation will involve missing one hour of their physical education class per week for four weeks. This will be alternate physical education programming, and you will still receive credit for being in class during your participation. . Additionally, participants will be asked to complete several questionnaires and surveys before participation begins and once participation has been completed. These surveys will be delivered directly to you in an envelope at school, one week before the first group meeting. The surveys will be returned to Ms. Silberman during the first group meeting. You will receive more surveys in another envelope to be completed at your convenience. You will return the sealed envelope with completed surveys and questionnaires directly to Ms. Silberman or to her supervisor, Dr. Rebecca Hye. The surveys will measure beliefs in your ability to achieve, functioning in school, knowledge regarding cultural standards of beauty and healthy life styles, and socialization with peers. These surveys should take approximately 30 minutes to complete. All materials will be distributed and collected by either Ms. Silberman or Dr. Hye. No one will have access to the completed surveys, except researchers associated with this study. All participants will be entered into a raffle for a chance to win a \$25.00 gift card to Target retail stores.

You will be asked to participate in the following:

- Group discussions with peers regarding their beliefs about beauty and cultural standards of body image.
- Activities in *The Body Project's* workbook, provided by the researcher. Activities include role-plays, short written activities, and thinking about your self.
- Home activities in the provided workbook.
- Completion of surveys and questionnaires measuring student outcomes.

All members will be asked to keep discussions private and not share what is discussed.

If you agree to take part in this study, you will be assigned a random code number that will be used to fill out all questionnaires and surveys. There will be no way to link your responses on questionnaires and surveys back to you. Therefore, all data collection is anonymous and free from identifying information. Results from this study will not be provided to participants.

There is some risk associated with participation in this study. The risk for this study includes the possibility of emotional distress. A school social worker at South Brunswick High School has been appointed as the point of referral for such instances. The school social worker will conduct a screening to determine if further action is necessary and a parent will be contacted if such action is necessary. Rutgers University and associated personnel will not be responsible for any adverse experiences from participation in groups.

Participation in this study is completely voluntary. You may choose not to participate, and you may change your mind and stop at any time during the course of the group. In addition you may choose not to answer any items on questionnaires or surveys with which you are uncomfortable.

This research is confidential. The research records will include some information you and this information will be stored in such a manner that some linkage between your identity and response in the research exists. Some information collected about you includes your age, grade, ethnicity, and athletic team. Please note that we will keep this information confidential by limiting access to the research data and keeping it in a secure location. Data will be kept in a locked box, which only Ms. Silberman and her dissertation committee as well as the Institutional Review Board at Rutgers University are permitted to see, except as may be required by law. This lock box will be in a secure office of Ms. Silberman and her dissertation committee. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated and the school district will remain anonymous.

If you have any questions about the study or procedures, you may contact Lyndsi Silberman at 443-604-1757 or at [Lyndsi.silberman@gmail.com](mailto:Lyndsi.silberman@gmail.com). If you have any questions about your rights as a research participant, you may contact the Sponsored Programs Administrator at Rutgers University:

Rutgers University Institutional Review Board for the Protection of Human Subjects  
Office of Research and Sponsored Programs  
3 Rutgers Plaza  
New Brunswick, NJ 08901-8559  
Tel: 848-932-0150  
Email: [humansubjects@orsp.rutgers.edu](mailto:humansubjects@orsp.rutgers.edu)

You will be given a copy of this consent form for your records.

If you would like your child to have the choice to participate in this group and study please sign below:

Participant: \_\_\_\_\_ Date: \_\_\_\_\_

Principal Investigator: \_\_\_\_\_ Date: \_\_\_\_\_



Appendix D

The Body Project Questionnaire

## The Body Project: Questionnaires

**PLEASE ANSWER THE QUESTIONS BELOW. THESE QUESTIONS WILL ASK ABOUT YOUR THOUGHTS AND BEHAVIORS.**

Date: \_\_\_\_\_

ID #: \_ \_ \_ \_ \_

Age \_\_\_ Grade: \_\_\_ **Check one: I am an athlete at SBHS** \_\_\_ **I am not an athlete at SBHS** \_\_\_

**If you are an athlete, please indicate your athletic team:**

Ethnicity: Black \_\_\_ White \_\_\_ Asian \_\_\_ Latina \_\_\_ Native American \_\_\_  
 Other: \_\_\_\_\_

**Thin-Ideal Internalization Scale**

<b>Please circle the response that reflects your agreement with these statements over the past <u>week</u>:</b>	strongly agree	agree	neutral	disagree	strongly disagree
1. Slim women are more attractive . . . . .	1	2	3	4	5
2. Tall women are more attractive. . . . .	1	2	3	4	5
3. Women with toned bodies are more attractive . . . . .	1	2	3	4	5
4. Women who are in shape are more attractive . . . . .	1	2	3	4	5
5. Slender women are more attractive. . . . .	1	2	3	4	5
6. Women with long legs are more attractive . . . . .	1	2	3	4	5
7. Curvy women are more attractive. . . . .	1	2	3	4	5
8. Shapely women are more attractive. . . . .	1	2	3	4	5

**Body Dissatisfaction**

<b>Over the past <u>week</u>, how satisfied were you with your:</b>	extremely dissatisfied	moderately dissatisfied	neutral	moderately satisfied	extremely satisfied
1. Weight .....	1	2	3	4	5
2. Figure .....	1	2	3	4	5
3. Appearance of stomach. ....	1	2	3	4	5
4. Body build. ....	1	2	3	4	5
5. Waist .....	1	2	3	4	5
6. Thighs .....	1	2	3	4	5
7. Buttocks .....	1	2	3	4	5
8. Hips .....	1	2	3	4	5
9. Legs .....	1	2	3	4	5