

GENDER AND MEDIA: EXPLORING THE RELATIONSHIP BETWEEN TELEVISION
AND ADOLESCENT WELL-BEING

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Cambria Autumn Goen

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AND ADOLESCENT WELL-BEING

The following faculty members have examined the final copy of this thesis for form and content, and recommend that it be accepted in partial fulfillment of the requirement for the degree of Master of Arts with a major in Sociology.

Jennifer Pearson, Committee Chair

Jodie Hertzog, Committee Member

Natalie Grant, Committee Member

ABSTRACT

Previous research suggests that media use negatively affects well-being for girls and boys. This study uses secondary data from a nationally representative sample of adolescents (often referred to as Generation X) who were attending school during the 1990s to examine gender differences in body image, school success, alternative time use, self-esteem, and depressive symptoms, and explores whether television consumption has an impact on these outcomes utilizing cultivation theory and social comparison theory. Preliminary analysis revealed that television consumption was not associated with self-esteem for girls, while boys who watched the most television reported the lowest levels of self-esteem. Television consumption was associated with depressive symptoms for both girls and boys, with the adolescents who watched the most television reporting the most frequent depressive symptoms. Overall, the OLS models indicated that television consumption had only a small association with adolescent well-being. Given vast changes in media since the 1990s, future research should consider other types of media (such as music and social networking sites), as well as television content that is accessed from an alternative source.

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CHAPTER 1

INTRODUCTION

Generation X, the generation between Baby Boomers and Millennials, watched television programming as it aired (or recorded it on a VHS tape to watch later) on television sets that may have required rabbit ears (an antenna) to pick up a signal. Some of us were lucky enough to have cable television, which added a small selection of channels to our otherwise lonely three primary networks. Over the last 20 years the media landscape has changed drastically, yet television content remains the primary source of media for adolescents, and the amount of time they spend watching continues to increase (Rideout, Foehr, & Roberts, 2010). While the adolescents in this study are part of Generation X, those born between 1965 and 1980 (Pew Research Center, 2015), Gen-Xers are now the parents of the generation that consumes more media (about 53 hours per week) than any generation before it (Rideout et al., 2010). A 2010 Kaiser Family Foundation study found that 11 to 14 year olds watched an average of almost five hours of television content each day, the most of any adolescent group, while the average for all adolescent groups was closer to four and a half hours each day (Rideout et al., 2010). Other studies have had similar findings (Laurson et al., 2008; Martins & Harrison, 2012). In their 2013 policy statement, the American Academy of Pediatrics (AAP) recommended that adolescents watch less than 2 hours per day (Strasburger & Hogan); in part because excessive media use has been associated with obesity (Laurson et al., 2008), poor grades (Rideout et al., 2010) getting in trouble more frequently (Morris & Johnson, 2014; Rideout et al., 2010) and feeling sad or unhappy (Rideout et al., 2010). This has been attributed to the idea that television time replaces time spent on real world, pro-social activities such as schoolwork, interacting with friends and family, or engaging in physical activity (Martins & Harrison, 2012).

Lack of real world experience is not the only issue. Television time also exposes adolescents to the messages that are most predominant in the media (Martins & Harrison, 2012). Television is a form of visual media; therefore it is a powerful source of physical beauty ideals. Previous research suggests that a relationship exists between exposure to images of ideal body types in the media and poor body image (Clay, Vignoles, & Dittmar, 2005; Dohnt & Tiggemann, 2006) and that, for boys, exposure to stereotypes of hypermasculinity is related to a drive for muscularity (Smolak & Stein, 2010; Tiggemann & Slater, 2004). Clay and colleagues (2005) conducted an experiment in which they showed girls images of magazine covers that had been created for the study. They found that the girls who viewed a cover with either a thin model or a normal size model reported significantly lower body satisfaction and self-esteem than those that viewed the cover with no model, and there was no difference in body satisfaction or self-esteem between the two groups that viewed the different models. The authors suggest their findings indicate that just being exposed to media images that depict women who are not overweight and who reflect idealized beauty standards may lead to decreases in body image and self-esteem.

Media represents everyone in ways that are limited and problematic, but gender bias is especially pronounced. Males are consistently overrepresented (Gerding & Signorielli, 2014; Hoplamazian & Knobloch-Westerwick, 2014; Martins & Harrison, 2012). In a study of the characters in 40 different cable television shows aimed at tweens, Gerding and Signorielli (2014) found that, overall, boys outnumbered girls nearly 2:1. This gap widened to greater than 3:1 in action-adventure shows. While adolescents may realize that the actual proportion of males to females in the U.S. population is much more even, those that watch more television may begin to believe that men are more important than women (Gerding & Signorelli, 2014).

Characters on television also tend to be portrayed in stereotypical ways. More emphasis is placed on female characters' appearance than males, with girls shown primping and receiving comments about their bodies, while males seem unconcerned with their appearance (Gerding & Signorielli, 2014). Women on television are becoming thinner and thinner, and real women are becoming larger, creating an unattainable cultural standard of feminine beauty. Girls receive the message that if they are not concerned with meeting cultural beauty standards, they are not worth being part of the story. Even though some girls are able to identify that the women and girls they see on television have been altered through the use of cosmetics, lighting, tricky camera angles, digital enhancements, thus making them unrealistic, frequent exposure to these unrealistic standards can make them seem more real (Milkie, 1999). These representations lead me to expect that media might be more harmful for girls than for boys.

In the current study, data from Wave 1 of the National Longitudinal Study of Adolescent to Adult Health (Add Health) is utilized in order to examine the relationship between television consumption and adolescent well-being, as well as how this relationship might be mediated by body image, school success, and alternative time use. Because media represents boys and girls in such different ways, and because these representations might be especially problematic for girls, these relationships will be studied for boys and girls separately. Both cultivation theory and social comparison theory, as well as prior research, are utilized to aid in understanding how boys and girls internalize the messages they receive from television, and then use those messages to compare themselves to others, which contributes to their state of well-being.

CHAPTER 2

LITERATURE REVIEW

2.1 Theoretical Approaches

Two theories are particularly helpful in understanding how media use is related to adolescent well-being. First, cultivation theory posits that the media creates a distorted worldview (Gerbner, 1999). In his article “The Stories We Tell,” Gerbner tells us that the stories in our media have three functions: “to reveal how things work, to describe what things are, and to tell us what to do about them” (1999, p. 9). Thus, the purpose of media is to help build a shared understanding of the world around us. The more we consume, the more it influences us and the more we believe what it tells us. Second, social comparison theory is the idea that people compare themselves to others and judge themselves against those comparisons (Rosenberg, Schooler, & Schoenbach, 1989). Adolescents who feel that they are similar to the people they see in the media feel better about themselves because the in-group is seen as better than the out-group (Martins & Harrison, 2012).

2.1.1 Cultivation Theory

Television is a pervasive medium that transcends race and class because nearly every person in the United States can consume it. The premise of cultivation theory is that television programming is a form of centralized storytelling that tells the same stories over and over again (Gerbner, Gross, Morgan, & Signorielli, 1986; Morgan, Shanahan, & Signorielli, 2015), creating a collective symbolic environment (Gerding & Signorielli, 2014). Most programming is available to most viewers. This leads to “the cultivation of shared conceptions of reality among otherwise diverse publics,” (Gerbner et al., 1986, p. 19) with heavy viewers perceiving the real world closer to the “reality” that is portrayed on TV, cultivating their values and perspectives

(Gerbner et al., 1986; Gerding & Signorielli, 2014). It does not matter if the stories are truth or fiction; they can still demonstrate how things work (Gerbner et al., 1986). Indeed, much of our individual knowledge about the world comes to us not from experience, but from stories (Hammermeister, Brock, Winterstein, & Page, 2005).

Hammermeister and colleagues (2005) examined the television viewing habits and well-being of three groups of adults: those that watched no television, those that met the AAP guidelines of up to 2 hours per day, and those that watched more than two hours per day. Their expectation was that the first two groups would fare better than the third, which was supported by their findings. Non-viewers did not differ significantly from those that met AAP recommendations; however, participants who watched more than two hours of television each day reported significantly lower levels of well-being. They attributed this to the cumulative effects of repeated exposure to dominant media messages, which they suggest validates the cultivation hypothesis. In another study, Martins and Harrison (2012) studied a group of elementary school students in a longitudinal panel study and found self-esteem was significantly correlated with television consumption at both waves. They attributed this to the idea that media content tends to be homogenous and does not depict the diversity of the real world, and that children who watch more television are not getting real world experiences to teach them otherwise. In other words, they cultivate a limited worldview from the media which tends to be based on stereotypes rather than learning about life by experiencing it.

Cultivation theory is one of the three most cited theories in literature on mass communication research (Morgan & Shanahan, 2010; Morgan et al., 2015). While some scholars argue that research using cultivation theory is thriving (Morgan et al., 2015), others argue that it is fading after more recent research has only found weak support for the theory (Potter, 2014).

Potter (2014) attributed this, in part, to the success of other theories that account for more micro level factors (such as the content of the programming). It is for this reason that social comparison theory might also be helpful in examining the relationship between the amounts of television adolescents consume and their well-being.

2.1.2 Social Comparison Theory

Leon Festinger first wrote about social comparison theory in 1954. His theory was based on his research findings that led him to believe that individuals have an internal drive for self-evaluation and that those evaluations are most often made in comparison to other people. He also argued that people are more likely to make comparisons to people that are more similar to themselves (for example, women make comparisons with other women while men compare themselves to other men), (Festinger, 1954, Milkie, 1999). These comparisons are made upward, to those of a higher status, or downward, to those deemed to have lower status. Upward comparisons can have a positive effect unless the attributes seem unattainable (Knobloch-Westerwick, Kennard, Westerwick, Willis, & Gong, 2014), for example, the feminine beauty standards portrayed in the media. Milkie (1999) furthered the connection between the theory and mass media by indicating that, due to the pervasiveness of mass media, it may be impossible to avoid unfavorable comparisons because we cannot opt out of media. The cultural images perpetuated on television, in magazines, and in other forms of media may be an inescapable group (Milkie, 1999).

A growing body of literature utilizes social comparison theory to examine the relationship between media and well-being (Clay et al., 2005; Milkie, 1999; Mulgrew, Volcevski-Kostas, & Rendell, 2014; Tiggemann & Slater, 2004). In her 1999 article, Milkie found that magazines aimed at teen girls helped those girls assess how they fit into their

reference group. Her qualitative analysis found that respondents reported that they liked the magazines because they gave them advice for concerns about fitting in, but that this translated into conforming to social norms (Milkie, 1999). The girls believed that, even though the images were not realistic (very thin, perfect hair, clear skin), their peers, especially males, placed great value on that type of appearance (Milkie, 1999).

2.2 Media Use and Well-Being

Cultivation theory and social comparison theory offer ways to examine the connection between media use and adolescent well-being, but in order to do so, it is important to establish measures of well-being. In this section, I consider two aspects of well-being, self-esteem and depressive symptoms, two aspects of well-being, and review previous research on their associations with media use for adolescents. Rosenberg, Schooler, and Schoenbach (1989) define the concept of self-esteem as “feelings of self-acceptance, self-respect, and generally positive self-evaluation” (p. 1008). Examples include “I feel that I have a number of good qualities,” “I am able to do things as well as most other people,” and “I take a positive attitude toward myself.” (Rosenberg, et al., 1989, p. 1008). High self-esteem levels have been correlated with academic achievement and positive peer relationships, while low levels of self-esteem have been associated with alcohol use, disordered eating, and suicidal ideation (Martins & Harrison, 2012). Self-esteem has been negatively correlated with hours of television (Martins & Harrison, 2012, Polce-Lynch, Myers, Kliewer, & Kilmartin 2001)

Several studies have found that adolescents that report heavier television viewing report experiencing more depressive symptoms than their peers that watch less (Lemola, Perkinson-Gloor, Brand, Dewald-Kaufmann, & Grob, 2015, Pitts, 2012). Pitts (2012) defines depressive symptoms as “characteristic feelings of depression and physical symptoms experienced within a

specified period of time,” (p. 244). In their 2014 study looking at the relationship between music videos and adolescent boys’ body image and mood, Mulgrew, Volcevski-Kostas & Rendell found that boys who watched music video clips depicting muscular, above average attractive men reported more depressive symptoms than the boys who watched clips with men of average build and attractiveness. The boys that viewed the muscular clips also reported higher levels of social comparison than the boys that viewed the average-looking singers.

As noted in the introduction to this paper, adolescents are watching, on average, more than two hours of television each day (Martins & Harrison, 2012; Rideout et al., 2010). While they are watching, their beliefs about the world around them are being cultivated. This includes ideas about what they and others should look like, and how they should behave. The more they watch, the more they may believe that the media reflects reality. They cannot escape from these messages, because television programming is widely accessible and tends to be relatively homogenous. Adolescents, then, may begin to compare themselves to the characters they are exposed to (Milkie, 1999). Due to the pervasiveness of gender stereotypes and cultural beauty standards present in the media, adolescents may experience decreases in self-esteem, and an increase in depressive symptoms if they feel that these standards are unattainable. Given this, it seems that adolescents that watch less television might experience greater well-being than their peers that watch more.

Gender differences in how males and females are represented in the media suggest that media use may be more harmful to girls than boys. Average self-esteem and depressive symptoms levels tend to vary along gender lines. There is a large body of research that indicates that males tend to have higher self-esteem than females (Ata, et al., 2007; Daniels & Leaper, 2006; Galliher, Rostosky, & Hughes, 2004; Mahaffy 2004; Sprecher, Brooks, & Avogo, 2013;

Swallen, Reither, Haas, & Meier, 2005) and that females tend to have more frequent depressive symptoms than boys (Pitts, 2012). Self-esteem is negatively correlated with hours of television and body satisfaction (Martins and Harrison, 2012, Polce-Lynch et al., 2001), however, Martins and Harrison (2012) noted that television consumption predicted a decrease in self-esteem for all of the children in their study except for white males. This might be attributed to the idea that television content reinforces hegemonic masculinity and racial stereotypes, which favor white males. According to cultivation theory, white females and adolescents of other races/ethnicities might see themselves as less valuable in comparison to white males (Martins & Harrison, 2012).

2.3 Media Use, Body Image, and Well-Being

One possible reason that excessive television use might be related to lower levels of self-esteem is the way that bodies are portrayed in the media, and how those portrayals are internalized by adolescents. Body image refers to the thoughts and feelings one has about his or her own body. Consistent with the premises of cultivation theory, the media is a powerful force in shaping ideal body types and the constant exposure to these ideals makes them seem normal (Smolak & Stein, 2010). Harrison (2003) described the television ideal of female waist and hips as “thinner is better” and contrasted this to the “medium is ideal” television ideal of female breasts, which she further said is not a natural body shape. Her study accurately predicted that exposure to ideal-body television would relate to idealization of that body shape. Other studies (Hargreaves & Tiggemann, 2003; Tiggemann & Slater, 2004) have found that thin ideal media provides a prevalent source of social comparison, especially during adolescence when bodies are changing due to puberty.

Body image and self-esteem are often studied together. Exposure to images of models that are thin or normal sized has been positively correlated with decreased body satisfaction and

self-esteem (Ata, Ludden, and Lally, 2007; Aubrey, 2007; Clay et al., 2005; Grabe, Ward, & Hyde, 2008). Jung and Lee (2006) found that women who placed high importance on appearance had lower self-esteem scores and negative body image. Conversely, girls who have higher body esteem have been found to place less importance on media images and are less likely to want to look like the models and images they see in the media (Murnen, Smolak, Mills, & Good, 2003). In several studies, the changes in self-esteem were fully mediated by changes in body image (Clay et al., 2005; Pesa, Syre, & Jones, 2000).

Aside from the possible consequences of low self-esteem, adolescents that suffer from low body satisfaction are also at higher risk for developing eating disorders such as anorexia nervosa or bulimia (Calado, Lameiras, Sepulveda, Rodriguez, & Carrera, 2011; Harrison & Cantor, 1997) than their peers with more positive feelings and attitudes about themselves (Ata, et al., 2007; Becker, 2004; Grabe, et al., 2008; Harrison, 2001; Harrison & Cantor, 1997; Lopez, Corona, & Halfond, 2013). Exposure to thin ideal media has also been associated with both men and women being more accepting of cosmetic surgery for women (for example: breast reduction or augmentation, liposuction) in order to more closely resemble that ideal (Harrison, 2003).

In general, females tend to report greater body dissatisfaction than males (Ata et al., 2007; Calado, et al., 2011; Murnen, et al., 2003). As discussed earlier, ideal beauty standards for women tend to be small waists and medium breasts. For males, the ideal tends towards being larger, but that applies to muscles and not weight. Social comparison theory tells us that boys and girls compare themselves to these idealized body types in the media, and that if they feel like they are unable to live up to these standards, their well-being may suffer. Females do tend to indicate a desire to be smaller while males report feeling more pressure to gain muscle and get

larger, however both report wanting to have larger upper bodies in the form of muscles for men and larger breasts for women (Ata, et al., 2007).

2.4 Time Spent in Alternative Activities

Activities that adolescents engage in outside of media consumption also contribute to their well-being. Engaging in things such as spending time with friends and family, doing hobbies, studying and playing sports give adolescents real world experience. Gerbner and colleagues (1986) might say that engaging more with the real world can counteract the cultivation effects of media, while social comparison theorists might say that non-media activities expose adolescents to real people (not characters on a television show or in advertisements) to whom adolescents might compare themselves. Gross, Juvonen, and Gable (2002), estimated that the subjects of their study spent, on average, 1 hour a day in organized activities, 1 hour watching television, 2 hours doing homework, 45 minutes on the internet, and 70 minutes with friends. That hour and 45 minutes of media use is, significantly smaller than the seven and a half hours that Rideout, Foehr, and Roberts (2010) found, but the authors note that respondents may have been multitasking, or engaging in more than one activity at a time. In addition, because these are averages, some adolescents are spending more time in other activities, while others are watching much more television.

It might be expected that time spent watching television replaces homework and study time, which would then have a negative impact on school success. This relationship has been seen in previous research (Cooper, Valentine, Nye, & Lindsay, 1999; Rideout et al., 2010). Students who experience higher levels of school success tend to have higher levels of self-esteem (Bachman, O'Malley, & Freedman-Doan, 2011; Rosenberg et al., 1989). Thus, it would make sense that students who watch more television have lower levels of school success and decreased

well-being. Great value is placed on doing well in school, getting good grades and achieving a high grade point average (GPA). Students may compare their level of success in school to the success of their peers, and their status within that comparison might help explain some of the relationship between school success and self-esteem (Rosenberg et al., 1989).

Time spent on physical activity rather than watching television may benefit well-being for a couple of reasons. Adolescents that are involved in team sports may feel better about themselves as a result of the friendships they build with their teammates (Daniels & Leaper, 2006; Holder, Coleman, & Sehn, 2009). Both physical and non-physical leisure activity may help adolescents deal with stress and build relationships with friends and family (Brooks & Magnusson, 2007). Not everyone participates in leisure activities at the same rates though. Boys engage in physical activity more frequently than girls (Daniels & Leaper, 2006; Rideout et al., 2010) and are more likely to meet weekly recommendations for physical activity (Ornelas, Perreira, & Ayala, 2007). Physical activity rates for boys and girls also decline with age (Rideout et al., 2010).

2.5 Current Study

The current study contributes to the literature using a quantitative approach to examine how several mediating factors are associated with television consumption and self-esteem or depressive symptoms for girls and boys separately. Much of the previous literature has found gender differences in measures of well-being and has linked these differences to television consumption as well as the ways that females and males are represented in the media. Body image, school success, and alternative time use might also help explain differences in well-being, therefore weight perception and weight control (as measures of body image), GPA (as a measure of school success), leisure activity and physical activity are considered as mediating variables.

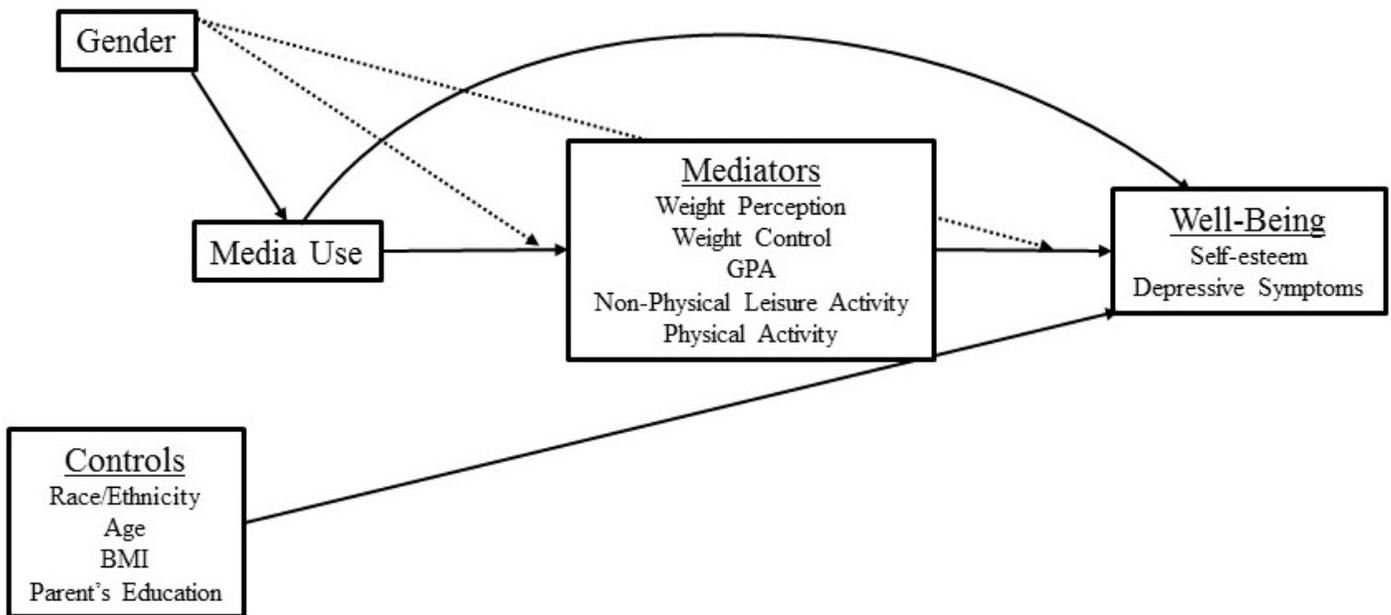
2.5.1 Research Questions

1. Is television consumption associated with self-esteem and depressive symptoms?
2. Is television consumption associated with body image, school success, and alternative time use?
3. Do body image, school success, and alternative time use help explain the association between television consumption and self-esteem or depressive symptoms?
4. Do these associations vary by gender?

CHAPTER 3

THEORETICAL MODEL AND HYPOTHESES

THEORETICAL MODEL



Much of the literature previously discussed looks at associations between media and self-esteem or media and depression, and body image is sometimes looked at as a mediating factor of self-esteem, but they neglect to consider other factors such as school success and alternative time use. Furthermore, several previous studies examine media and well-being for only girls or only boys, but they do not directly examine the differences *between* girls and boys. For this study, I examine two dependent variables: self-esteem and depressive symptoms. Using both self-esteem and depressive symptoms as indicators of adolescent well-being paint a more complex picture than using only one or the other. All data analysis is completed for girls and boys separately, so that comparisons between them can be made. The model is comprised of four segments.

3.1 First Model Segment

For the first segment of the model, television use is tested for associations with well-being. Associations for girls and boys are tested separately. Race/ethnicity, age, Body Mass Index (BMI), and parent's education are treated as controls. As previously discussed, studies have found that adolescents that watch more television tend to have lower levels of self-esteem (Martins & Harrison, 2012; Polce-Lynch et al., 2001) and more frequent depressive symptoms (Lemola, et al., 2015, Pitts, 2012) than their peers that watch less. Boys and girls tend to be represented in very different ways in the media, and these representations are often stereotyped with emphasis on physical attractiveness for females (Gerding & Signorielli, 2014) and muscularity for boys (Smolak & Stein, 2010; Tiggemann & Slater 2004), but males are also overrepresented, especially in the action genre (Gerding & Signorielli, 2014), which may lead boys to overestimate their importance and girls to underestimate theirs. Based on these factors, I would expect that television might boost self-esteem and decrease the frequency of depressive

symptoms for boys while actually lowering self-esteem and increasing depressive symptoms for girls.

Hypothesis 1A: Television hours will be negatively associated with self-esteem for girls.

Hypothesis 1B: Television hours will be positively associated with self-esteem for boys.

Hypothesis 1C: Television hours will be positively associated with depressive symptoms for girls.

Hypothesis 1D: Television hours will be negatively associated with depressive symptoms for boys.

3.2 Second Model Segment

The second segment of the model tests for associations between television consumption and the mediating variables. Weight perception and weight control are used as measures of body image. Exposure to the thin ideal, for girls, makes it seem normal (Smolak & Stein, 2012), but because it is highly unattainable, exposure has also been associated with decreased body image (Ata, et al., 2007). Boys that are exposed to the muscular ideal are also prone to body image concerns (Smolak & Stein, 2010; Tiggemann & Slater, 2004). Because of this, I expect that television consumption will be negatively associated with the body image variables for both girls and boys.

Since time watching television potentially takes time away from activities such as studying, spending time with friends, or getting exercise, I would expect to see a negative relationship between television consumption and GPA as well as both leisure and physical activity for boys and girls. Previous literature tells us that adolescents who watch more television tend to have lower grades than their peers that watch less (Cooper et al., 1999; Rideout et al., 2010).

3.3 Third Model Segment

The third segment of the model tests for associations between the mediating variables and well-being. Body image and self-esteem are often discussed together in the literature with decreases in both body satisfaction and self-esteem associated with exposure to ideal body types in the media (Ata, et al., 2007; Aubrey, 2007; Clay et al., 2005; Grabe, et al., 2008). This leads me to expect that girls that perceive that they are underweight or overweight will have lower self-esteem and more frequent depressive symptoms than girls that perceive that they are about the right weight, and that boys who perceive that they are underweight will have lower self-esteem and more frequent depressive symptoms than boys that perceive that they are about the right weight or overweight. Given the different standards of attractiveness for females and males (thin waist and moderate breasts for females and muscles for males), I also expect that both girls and boys who are trying to change their weight will have lower self-esteem and greater depressive symptoms than girls and boys who are not trying to change their weight.

Also of importance in this segment are school success and alternative time use. School success has been associated with higher levels of self-esteem (Bachman et al., 2011; Rosenberg et al., 1989), as has physical activity (Daniels & Leaper, 2006, Holder et al., 2009). For these reasons, I expect that GPA, leisure activity, and physical activity will all be positively associated with self-esteem and negatively associated with depressive symptoms for both girls and boys.

3.4 Fourth Model Segment

The final segment of the model tests for associations between television consumption, the mediating variables, and well-being while controlling for race/ethnicity, age, BMI, and parent's education. The relationship between television consumption and self-esteem has been fully mediated by body image in previous research (Clay et al., 2005; Pesa et al., 2000). It would also

make sense that time spent engaging in other activities would take time away from television, which would then mediate its association with both self-esteem and depressive symptoms. I expect that any associations between television consumption and well-being will be at least partially mediated by body image, school success, and alternative time use for both girls and boys.

Hypothesis 2A: The relationship between television hours and self-esteem will be partially mediated by weight perception, weight control, GPA, and alternative time use for both girls and boys.

Hypothesis 2B: The relationship between television hours and depressive symptoms will be partially mediated by weight perception, weight control, GPA, and alternative time use for both girls and boys.

CHAPTER 4

METHODS

4.1 Data

The data used for this project came from the public use data set of Wave I of The National Longitudinal Study of Adolescent to Adult Health (Add Health). The target population for this data set was students in 7th through 12th grades in middle, junior, and high schools in the United States in the academic year of 1994-1995. For the Wave I In-Home Survey, administered in 1995, students were selected with unequal probability of selection from the school rosters (an in-school survey administered in 1994 helped identify students for the in-home surveys). The core sample consisted of roughly equal-sized samples selected from most schools. Over sampled groups of adolescents were those with specific racial or ethnic backgrounds, disabled youth, and a genetic supplement (looking at twins, siblings, and co-habiting families). The unit of analysis was individual students.

The sampling consisted of both cluster and stratified sampling methods. A sample of 132 schools was chosen from an original list of 26,666 U.S. High Schools. This list was sorted on enrollment size, school type, region, location, and percent white before being divided into groups for sampling. Out of the 132 schools, eighty were selected with probability proportional to enrollment size. Feeder schools were identified for the High Schools that did not have 7th and 8th grades and one feeder school for each of these high schools was selected as well for a total of 52 additional schools. The sample size of adolescents for Wave I was 6,504. The dataset included information on the respondents' health (including disability, health-facility utilization, and nutrition), peer networks, decision-making processes, family composition and dynamics,

educational aspirations and expectations, employment experience, romantic and sexual partnerships, substance use, and criminal activities.

Add Health is an excellent data set for this project because the target population of the data is adolescents that are middle and high school age, which is the population of interest for the current study. The interviews dealt specifically with topics such as media use, activities the respondents participate in outside of media use, aspects of their well-being, as well as basic demographic information for both themselves and their parents.

4.2 Sample

Sample restrictions for the current study were created to remove cases missing responses to key variables. These restrictions include respondents missing data on valid sample weights, television hours, any of the questions used in the creation of the self-esteem scale or depressive symptoms, weight perception, weight control, race, ethnicity, height, weight, and those respondents that had legitimate skips on the grade questions because they were not in school at the time.

A sample weight was provided in the Add Health data. The relative weight in the current study was calculated by dividing the standard weight by the sample mean. This created a weight for each case in the sample that is equal to the proportion of that case in the population and corrects for the inflated sample size of the sample weight. The relative weight reduces bias and makes findings more generalizable to the population. The final sample size for the current study was 6,062 respondents. The respondents are nearly evenly split between female and male with 48.5% females (N=2,938) and 51.5% males (N=3,124).

4.3 Variables

4.3.1 Dependent Variables

The data set included six items such as “you have a lot of good qualities”, “you have a lot to be proud of,” and “you feel socially accepted,” that have been utilized in previous studies to create a scale of global self-esteem (Pesa, et al., 2000; Shrier, Harris, Sternberg, & Beardslee, 2001). These questions were modified from or similar to questions on the ten question Rosenberg Self-Esteem Inventory (Rosenberg, et al., 1989; Shrier, et al., 2001). Responses were coded on a 5-point Likert scale with a score of 1 indicating “strongly agree” and a score of 5 indicating “strongly disagree.” To create the self-esteem scale, the variables were first reverse coded so that a score of 1 indicates “strongly disagree” and a score of 5 indicates “strongly agree” so that a higher score would indicate higher self-esteem. Cronbach’s alpha was computed to see how well the questions measured an overall concept; the value was .844 making the items appropriate for a scale. The six items were then summed into one variable with a potential range from 6 to 30, with 6 indicating very low levels of self-esteem and 30 indicating very high levels of self-esteem.

Depressive symptoms were assessed using responses to 19 items from the Center for Epidemiological Studies’ Depression Scale (CES-D). These items asked respondents to indicate how often during the previous week the given statements were true, such as “you were bothered by things that usually don’t bother you,” or “you felt lonely.” Possible responses ranged from 0 to 3 with 0 indicating “never or rarely” and 3 indicating “most or all of the time.” Four items were reverse coded so that all of the variables had the same direction. Cronbach’s alpha was computed to see how well the questions measured an overall concept; the value was .864 making the items appropriate for a scale. The responses were summed into one variable with a potential

range from 0 to 57, with a score of 0 indicating that the respondent reported never or rarely experiencing any of the depressive symptoms and a score of 57 indicating that the respondent experienced all of the depressive symptoms most or all of the time.

4.3.2 Key Independent Variable

4.3.2.1 Media Use

One item in the data set asked respondents to indicate how many hours each week they watched television. This was a continuous variable with responses ranging from 0 to 99 hours per week. In order to minimize the effects of the outliers, the responses were capped for the top 10%, creating a new variable with possible response categories from 0 to 35 or more hours. The sample was grouped into three roughly equal groups based on their reported television use. Watching between 0 and 6 hours of television per week was coded as “light use,” watching between 7 and 19 hours per week was coded as “moderate use,” and watching 20 or more hours per week was coded as “heavy use.”

4.3.3 Mediating Variables

In the current study, the weight perception and weight control variables are used as measures of body image. Weight perception is calculated utilizing responses to a question in the data set that asked respondents to indicate their perception of their current weight. Possible responses ranged from 1 to 5, with 1 indicating very underweight and 5 indicating very overweight. For the final weight perception variable, responses coded as 1 or 2 on the original variable were combined into a new category of underweight and responses coded as 4 or 5 were combined into a new category of overweight. Dichotomous variables were then created for underweight, about the right weight, and overweight. Weight perception has been used to measure body image in previous studies (Pesa, et al., 2000).

The weight control variable was created using one item from the data set that asked respondents to indicate if they were trying to lose weight, trying to gain weight, trying to stay the same weight, or not trying to do anything about their weight. A dichotomous variable was created in which respondents who reported that they were trying to gain weight or trying to lose weight were combined into “trying to change” on the new variable and the respondents that indicated that they were either trying to maintain their current weight or were not trying to change their weight were combined into “not trying to change.”

In the current study, grade point average (GPA), is used as a measure of school success. The data set included four questions about the respondents’ most recent grades (either in the most recent grading period or the last grading period in spring) in the subjects of English, math, history, and science. Possible responses were A, B, C, D or lower, didn’t take this subject, took subject/wasn’t graded this way, or was a legitimate skip for students that were not in school. The variables were recoded so that A was coded as 4, B was coded as 3, C was coded as 2, and D was coded as 1. The scores were added together and the average of the scores was assigned as the student’s GPA.

Six items in the data set were used to create two variables pertaining to the number of times each week respondents engaged in non-media related activities. Two items (doing hobbies, and hanging out with friends) were utilized to create the leisure activity variable. Four items (roller-blading/cycling, playing an active sport, exercising, and working around the house) were utilized to create the physical activity variable. For all of the original items, a score of 0 indicated that the respondent did not engage in that activity, a score of 1 indicated that the respondent engaged in the activity 1 or 2 times a week, a 2 indicated 3 or 4 times a week, and a 3 indicated 5 or more times a week. These variables were recoded using the midpoint for each category so that

each item had possible values of 0, 1.5 times a week, 3.5 times a week, and 5 times a week. Using the recoded variables, an index for leisure activity was created by summing the weekly bouts of engaging in hobbies and hanging out with friends. The possible range of the new variable was 0 to 10 bouts per week. An index for physical activity was also created using the recoded variables and summing the weekly bouts of roller-blading/cycling, playing an active sport, exercising, and working around the house. The possible range for this variable was 0 to 20 bouts per week.

4.3.4 Controls

The current study treats race/ethnicity, age, BMI, and parent's education as control variables. The data set contained one question asking respondents if they were of Hispanic origin, and five other race choices including white, African American/Black, American Indian, Asian/Pacific Islander, and other. Respondents were able to pick multiple categories. If the respondent answered that they were of Hispanic origin, they were coded as Hispanic on the new race/ethnicity variable. Respondents that indicated that they were white and did not indicate any other options were coded as white on the new variable. Respondents that indicated both black and any other race (other than Hispanic) were coded as black. Any other multi-racial respondents were coded into the other race category. The final four race/ethnicity categories were white, black, Hispanic, and other.

Age at date of interview was calculated as the difference between the respondent's date of birth and the date of the interview. Respondents were asked to indicate what their height was in feet and inches. One item indicated feet (4, 5, or 6), and the other indicated inches (0-11). Each respondent's height in inches was calculated by multiplying their height in feet by 12 and adding the inches. This was then converted into height in meters by multiplying the height in

inches by .0254. One item asked respondents to indicate their weight in pounds. Weight in kilograms was calculated by multiplying weight in pounds by .454. A BMI score was calculated for each respondent using the formula $BMI = \text{weight in kilograms} / \text{height in meters squared}$.

Two questions from the data set asked resident parents about their education level (one for the parent being interviewed and one for their residential partner). The possible categories ranged from never going to school to higher than a four year college or university degree. The data set also contained two questions for students about their resident parents' level of education with the same response categories. For the current study, the highest level of parent education for either residential parent as reported by the parent was utilized for data analysis. If the parent's answer was not available, the student's report was used instead. Response categories were collapsed into 5 categories so that 1 indicates less than high school diploma, 2 indicates high school diploma or equivalent, 3 indicates some college, 4 indicates four year college or university degree, and 5 indicates higher than a four year college or university degree.

4.4 Plan of Analysis

To address the first research question about associations between television consumption and measures of well-being, ANOVA tests were conducted for the television groups with the self-esteem scale and the depressive symptoms scale. The file was split by gender so that the differences between girls and boys could be considered (addressing the fourth research question). My second research question asked if television consumption was associated with body image, school success, and alternative time use. Bivariate tests were conducted with the file split by gender to examine the associations between television consumption and weight perception (Spearman's Rank Correlation Coefficient), weight control (Chi Square), GPA, leisure activity, and physical activity (ANOVA).

Finally Ordinary Least Squares, or OLS, Regressions were conducted. Model 1 tests for associations between television consumption and well-being while controlling for race/ethnicity, age, BMI, and parents' education. In Model 2, body image, GPA, and alternative time use were added while still controlling for race/ethnicity, age, BMI, and parent's education. This helps answer the third research question: Do body image, school success, and alternative time use help explain the association between media use and self-esteem or depressive symptoms? Modified Chow tests were conducted in Model 2 to determine if the coefficients were significantly different from each other. OLS tests were conducted separately for girls and boys, which helps answer the fourth research question: Do these associations vary by gender?

CHAPTER 5

RESULTS

5.1 Descriptive Statistics

5.1.1 Dependent Variables

5.1.1.1 Well-Being

Descriptive statistics for the dependent variables are presented in Table 1, separately for boys and girls. Table 1 also reports the statistical significance for bivariate associations between gender and all other variables. The self-esteem scale had a possible range of 6 to 30 points. A score of 6 indicates low self-esteem and a score of 30 indicates high self-esteem. The mean score for girls is 24.215 with a standard deviation of 3.616 which indicates that, on average, the girls have moderately high self-esteem. The mean score for boys is 25.282 with a standard deviation of 3.279, which indicates that they too have, on average, moderately high self-esteem. An independent samples t-test was conducted to evaluate whether girls reported significantly lower levels of self-esteem than boys. The gender difference was statistically significant ($t=12.042$, $p<.001$), and the effect size was small (Cohen's $d= .295$) but meaningful.

The possible scores for the depressive symptoms scale ranged from 0 to 57, with a score of 0 indicating a low frequency of depressive symptoms and a score of 57 indicating very frequent depressive symptoms. The mean score for girls, as shown in Table 1, is 11.754 with a standard deviation of 8.065. This indicates that, on average, the girls reported experiencing depressive symptoms relatively infrequently. The mean score for boys is 9.902 with a standard deviation of 6.672. So the boys also reported, on average, experiencing depressive symptoms infrequently. An independent samples t-test was also conducted to test whether girls reported

significantly higher levels of depressive symptoms than boys. This difference was statistically significant ($t=9.707$, $p<.001$) with a small but meaningful effect size (Cohen's $d= .230$).

5.1.2 Independent Variables

5.1.2.1 Media Use

Media use measures how many hours per week respondents reported watching television. For the girls, 37.7% ($N=1,048$) reported light use, 33.8% ($N=994$) reported moderate use, and 30.5% ($N=896$) reported heavy use. Among the boys, 27.8% ($N=867$) reported light use, 36.6% ($N=1,144$) reported moderate use, and 35.6% ($N=1,113$) reported heavy use. This indicates that boys watched, on average, more television than girls did, and a chi-square test indicates that this relationship is strong and statistically significant ($\chi^2=45.406$, $df= 2$, $p<.001$).

5.1.3 Mediating Variables

Descriptive statistics for the mediating variables are also presented in Table 1. Weight perception had three possible categories; underweight, about the right weight, and overweight. Among girls, 10.3% ($N=302$) reported that they perceived themselves to be underweight, 50.2% ($N=1,474$) perceived that they were about the right weight, and 39.5% ($N=1,162$) perceived that they were overweight. Among boys, 22.3% ($N=698$) reported that they perceived themselves to be underweight, 54.9% ($N=1,715$) perceived that they were about the right weight, and 22.8% ($N=711$) perceived that they were overweight. Spearman's Rank Correlation Coefficient (.214, $p<.001$) was calculated for weight perception by gender and indicates that weight perception is correlated with gender. On average, girls were less likely to perceive that they were underweight, and more likely to perceive that they were overweight, than boys.

Respondents indicated that they were either actively trying to change their weight or not trying to change their weight. More than half of the girls (53.8%, $N=1,579$) reported that they

were actively trying to change their weight while 46.2% (N=1,359) reported that they were not trying to change their weight. The boys were a little more evenly split with 50.5% (N=1,577) reporting they were actively trying to change their weight and 49.5% (N=1,547) reporting that they were not trying to change their weight (see Table 1). This indicates that girls were more likely to report trying to change their weight than boys, and a chi-square test indicates that this difference is small, but statistically significant ($\chi^2=6.43$, $df= 2$, $p<.01$).

To determine the respondent's grade point average (GPA), their self-reported most recent grades in a set of classes was converted from letter grades to numeric scores. For the GPA variable, a score of 1 indicates a D average and a score of 4 indicates an A average. The mean GPA for girls is 2.927 with a standard deviation of .741 and the mean score for boys is 2.688 with a standard deviation of .781 (see Table 1). This difference was statistically significant ($t=-12.212$, $p<.001$), with a small but meaningful effect size (Cohen's $d= .306$).

Girls reported engaging in, on average, 5.542 bouts of leisure activity (SD=2.520) and 8.879 bouts of physical activity (SD=3.850) per week. Boys reported engaging in, on average, 5.988 bouts of leisure activity (SD=2.529) and 9.963 bouts of physical activity (SD 4.241) per week. This indicates that, on average, boys were participating in both leisure and physical activities more frequently than the girls each week (see Table 1). Independent samples t-tests were also conducted to test whether these differences are statistically significant. This difference for leisure activity was statistically significant ($t=6.827$, $p<.001$) but not meaningful (Cohen's $d= 0.176$). The difference for physical activity was also statistically significant ($t=10.426$, $p<.001$) and had a small but meaningful effect size (Cohen's $d= 0.256$).

5.1.4 Control Variables

Finally, descriptive statistics for the control variables are also presented in Table 1. Of the girls, 66.2% (N=1,946) are white, 14.8% (N=434) are black, 11.9% (N=349) are Hispanic, and 7.1% (N=209) are other races or ethnicities. The boys are about the same, with 66.9% (N=2,091) white, 14.6% (N=456) black, 11.2% (N=351) Hispanic, and 7.2% (N=226) other races or ethnicities.

Girls ranged in age from 11 to 21 years old, with a mean age of 15.354 and a standard deviation of 1.772. The boys also ranged in age from 11 to 21 years old and had a mean age of 14.512 with a standard deviation of 1.804 (see Table 1). An independent samples t-test indicated that the difference in age between boys and girls was significant ($t=3.429$, $p<.001$), but not meaningful (Cohen's $d=0.087$).

A BMI score was calculated for each respondent using the formula $BMI = \text{weight in kilograms} / \text{height in meters squared}$. The BMI scores for girls ranged from 12.03 to 46.36 with a mean score of 22.216 (SD=4.396). BMI scores for boys ranged from 11.2 to 56.43 with a mean score of 22.601 (SD=4.392 See Table 1). An independent samples t-test also indicated that this difference was significant ($t=3.422$, $p<.001$), but not meaningful (Cohen's $d= 0.088$).

The highest level of education for either resident parent of each respondent was calculated using the resident parent's self-report and, if that was not available, the level of education as reported by the respondent. Among girls, 10.6% (N=311) had parents with less than a high school diploma, 27.8% (N=817) had parents with a high school diploma or equivalent, 27.3% (N=802) had parents with some college or vocational school, 19.7% (N=580) had parents with a four year degree, and 14.6% (N=428) had parents with higher than a four year degree. Among boys, 9.9% (N=310) had parents with less than a high school diploma, 27.5% (N=860)

had parents with a high school diploma or equivalent, 26.3% (N=821) had parents with some college or vocational school, 22.2% (N=692) had parents with a four year degree, and 14.1% (N=440) had parents with higher than a four year degree. The gender difference was not statistically significant.

5.2 Bivariate Results

5.2.1 Television Consumption and Well-Being

A one-way analysis of variance (ANOVA) was conducted to evaluate the relationship between television consumption and self-esteem for girls and boys separately. Scheffe post hoc tests were conducted for all ANOVAs to examine differences between groups. It was expected that there would be a negative relationship between television consumption and self-esteem for girls, and a positive relationship for boys. These results are reported in Table 2. For both girls and boys, the moderate use group reported the highest self-esteem. For girls, none of the differences were significantly different from each other which indicates that there is no relationship between television use and self-esteem for girls ($F=0.142$, $df=2$). For boys, the self-esteem scores for moderate users and heavy users were significantly different ($p<.01$), with boys that were moderate users scoring an average of 25.519 and heavy users scoring slightly lower at 25.049. The scores for male light users and either of the other groups were not significantly different. There does appear to be a significant relationship between television use and self-esteem for boys, although it is curvilinear ($F=5.813$, $df=2$, $p<.01$).

An ANOVA was also conducted to evaluate the relationship between television consumption and depressive symptoms, for girls and boys separately. It was expected that there would be a positive relationship between television consumption and depressive symptoms for girls, and a negative relationship for boys. For both girls and boys, the moderate use group

reported the lowest depressive symptoms. Among the girls, the scores for moderate ($\bar{x}=11.157$) and heavy ($\bar{x}=12.140$) users were significantly different ($p<.05$), however the scores for light users were not significantly different from the other groups. This indicates that, for girls, there is a weak relationship between television consumption and depressive symptoms ($F=4.205$, $df=2$, $p<.01$). The boys that reported light television use reported the most frequent depressive symptoms ($\bar{x}=10.354$). The difference between light use and moderate use ($\bar{x}=9.139$) was significant ($p<.001$), as was the difference between moderate use ($\bar{x}=9.139$) and heavy use ($\bar{x}=10.334$), ($p<.001$); however, the light use group did not differ significantly from the heavy use group. This indicates that there is a statistically significant relationship between television use and depressive symptoms for boys ($F=11.889$, $df=2$, $p<.001$).

5.2.2 Television Consumption and Mediating Variables

ANOVAs were also conducted to evaluate the relationship between television consumption and the mediating variables for boys and girls separately. These results are presented in Table 2. It was expected that GPA would be negatively associated with television consumption for both girls and boys. For both girls and boys, GPA decreased as television consumption increased, and there was not a statistically significant difference between light and moderate users. Among girls, light ($\bar{x}=2.993$) and moderate ($\bar{x}=2.984$) users differed significantly from heavy ($\bar{x}=2.787$) users ($p<.001$). Among boys, light users ($\bar{x}=2.754$) differed significantly ($p<.001$) from heavy users ($\bar{x}=2.609$), and moderate users ($\bar{x}=2.716$) differed significantly ($p<.01$) from heavy users ($\bar{x}=2.609$), but light users and moderate users did not differ significantly. This indicates that, for both girls ($F=23.344$, $df=2$, $p<.001$), and boys ($F=9.611$, $df=2$, $p<.001$), there is a significant, negative relationship between television consumption and GPA.

It was expected that leisure activity would be negatively associated with television consumption for both girls and boys. For girls, there is a significant, negative relationship between leisure activity and television consumption ($F=6.764$, $df=2$, $p<.01$). Light users ($\bar{x}=5.706$) differed significantly ($p<.01$) from heavy users ($\bar{x}=5.295$), and moderate users ($\bar{x}=5.593$) also differed significantly ($p<.05$) from heavy users ($\bar{x}=5.295$), but light users did not differ significantly from moderate users. For boys, there is also a statistically significant relationship between leisure activity and television consumption ($F=8.358$, $df=2$, $p<.001$, see Table 2). There was a statistically significant difference ($p<.001$) between weekly bouts of leisure activity for boys that were moderate television users ($\bar{x}=6.210$) and heavy users ($\bar{x}=5.777$), however there was not a significant difference between light and moderate users, or between light and heavy users.

Finally, it was expected that physical activity would also be negatively associated with television consumption for both girls and boys. For girls, there was a statistically significant relationship between physical activity and television consumption ($F=4.002$, $df=2$, $p<.05$). Moderate television users ($\bar{x}=9.054$) reported the most frequent bouts of weekly physical activity and the heavy use group ($\bar{x}=8.581$) reported the least frequent ($p<.05$). Among the boys, light users ($\bar{x}=9.518$) differed significantly from both moderate users ($\bar{x}=10.234$, $p<.001$), and heavy users ($\bar{x}=10.030$, $p<.05$). Moderate and heavy users did not differ. Television consumption and the number of bouts of weekly activity are statistically significantly associated for boys ($F=7.268$, $df=2$, $p<.01$). Table 2 also reports the percentages for weight perception and weight control by television consumption for girls and boys separately; however none of these relationships were statistically significant.

5.2.3 Mediating the Relationship between Television and Well-Being

5.2.3.1 Body Image

Table 3 presents the results of ANOVA analyses that were conducted to evaluate the relationships between weight perception and self-esteem and between weight perception and depressive symptoms for girls and boys separately. It was expected that girls that perceived being underweight or about the right weight would have higher self-esteem and less frequent depressive symptoms than girls that perceived being overweight. It was also expected that boys that perceived being underweight would have lower self-esteem and more frequent depressive symptoms than boys that perceived being about the right weight or overweight.

Among the girls, all groups differed from each other significantly on self-esteem scale scores ($p < .001$). The girls that perceived being about the right weight ($\bar{x} = 25.064$) reported the highest self-esteem scores, the girls that perceived being underweight ($\bar{x} = 24.876$) reported the second highest scores, and the girls that perceived being overweight ($\bar{x} = 23.162$) reported the lowest self-esteem scores. There appears to be a significant relationship between weight perception and self-esteem ($F = 95.783$, $df = 2$, $p < .001$) for girls. Among the boys, those that perceived being about the right weight ($\bar{x} = 25.753$) differed significantly from boys that perceived being underweight ($\bar{x} = 24.876$, $p < .$) and from boys that perceived being overweight ($\bar{x} = 24.542$, $p < .$); however the boys that perceived being underweight ($\bar{x} = 24.876$) did not differ significantly from boys who perceived being overweight ($\bar{x} = 24.542$). This indicates that there is also a significant relationship between weight perception and self-esteem ($F = 42.196$, $df = 2$, $p < .001$) for boys.

In terms of weight perception and depressive symptoms, girls who perceived that they were overweight ($\bar{x} = 13.513$) differed significantly ($p < .001$) from girls who perceived that they

were underweight ($\bar{x}=11.579$) and girls who perceived that they were about the right weight ($\bar{x}=9.362$). Girls that perceived that they were underweight or about the right weight did not differ significantly. There is a significant relationship between weight perception and depressive symptoms ($F=50.007$, $df=2$, $p<.001$) for girls. Depressive symptoms for boys that perceived being about the right weight ($\bar{x}=9.362$) differed significantly from both boys that perceived being underweight ($\bar{x}=10.430$, $p<.01$) and boys that perceived being overweight ($\bar{x}=10.688$, $p<.001$); however there was not a significant difference between boys that perceived they were underweight ($\bar{x}=10.430$) and those that perceived they were overweight ($\bar{x}=10.688$). This indicates there is a relationship between weight perception and depressive symptoms ($F=12.825$, $df=2$, $p<.001$) for boys.

Table 4 presents the results of independent samples t-tests that were conducted to evaluate the relationships between weight control and self-esteem and weight control and depressive symptoms for girls and boys separately. It was expected that, for both girls and boys, those who reported trying to change their weight would have lower self-esteem and more frequent depressive symptoms than those who reported they were not trying to change their weight. Girls that were trying to change their weight did report lower self-esteem scores ($\bar{x}=23.615$) than girls who were not trying to change their weight ($\bar{x}=24.913$). The difference was statistically significant ($t=9.929$, $p<.001$). The effect size was small, but meaningful ($d=.350$). Girls that were trying to change their weight ($\bar{x}=12.065$) did report greater depressive symptoms than girls that were not trying to change their weight ($\bar{x}=10.230$). The difference was also statistically significant ($t=9.749$, $p<.001$). The effect size was again small, but meaningful ($d=.336$). Boys that were trying to change their weight ($\bar{x}=25.044$) also reported lower self-esteem scores than the boys that were not trying to change ($\bar{x}=25.524$). The difference was

statistically significant ($t=4.107$) but not meaningful ($d=.145$). Boys that were trying to change their weight ($\bar{x}=10.520$) reported greater depressive symptoms than the boys that were not trying to change their weight ($\bar{x}=9.272$). As with self-esteem scale scores for boys, the difference was statistically significant ($t=5.248$) but not meaningful ($d=.182$).

5.2.3.2 Grade Point Average and Alternative Time Use

Table 5 presents the results for correlations among the variables. GPA was slightly positively correlated with self-esteem for both girls ($r=0.206$, $p<.001$) and boys ($r=0.168$, $p<.001$), as were leisure activity (girls: $r= 0.108$, $p<.001$; boys: $r= 0.094$, $p<.001$), and physical activity (girls: $r=0.139$, $p<.001$; boys: $r=0.154$, $p<.001$). Respondents with higher GPAs reported higher levels of self-esteem, as did both girls and boys with more frequent bouts of leisure and physical activity.

GPA was slightly negatively correlated with depressive symptoms for both girls ($r=-0.287$, $p<.001$) and boys ($r=-0.244$, $p<.001$), as were leisure activity (girls: $r=-0.097$, $p<.001$; boys: $r=-0.088$, $p<.001$) and physical activity (girls: $r=-0.108$, $p<.001$; boys: $r=-0.153$, $p<.001$). Respondents with higher GPAs reported lower levels of depressive symptoms, as did both girls and boys with more frequent bouts of leisure and physical activity (see Table 5).

5.3 Multivariate Results

5.3.1 Multivariate Analysis Tests for Assumptions

The dependent variables (self-esteem scale scores and depressive symptoms scale scores) were not normally distributed, however there were more than 6,000 cases in the data analysis. Tests of the residuals suggested that this was not a problem. None of the independent variables were correlated over 0.70 with any other independent variable. Tests for outliers were also conducted. The maximum found in the Mahalanobis distance test for Model 1 was 42.398 for

females and 77.664 for males. A value in excess of 25 presents an undue effect on regression results. The maximum for the Cook's distance test was less than 1 for both females and males. Here, a value greater than 1 may be influencing the regression mode. The number of outliers in the sample was less than 1% of the total sample, so because of this and the Cook's distance, outliers were not removed.

5.3.2. Girls' Television Consumption and Self-Esteem

5.3.2.1 Model 1

Table 6 presents the results of the ordinary least squares regression analysis for self-esteem. Consistent with the bivariate analysis, results from Model 1 indicate that television consumption was not significantly associated with self-esteem among girls after controlling for race/ethnicity, age, BMI, and parent's level of education. As compared to white females, black females scored, on average, 1.377 points higher ($p < .001$). Hispanic females scored, on average, .188 points lower than white females, but this was not a statistically significant difference. Females of other races/ethnicities scored, on average, .918 points lower than white females ($p < .001$). For each point increase in BMI, self-esteem scores for females decreased by, on average, .083 points ($p < .001$). Neither age nor parent's education were significantly associated with self-esteem. The adjusted R^2 for this model is .031 ($p < .001$) so only about 3.1% of the variance in girls' self-esteem scale scores is explained by these variables.

Comparing the standardized betas, the estimated effect of being black (compared to being non-Hispanic white) had the largest standardized beta at .131. With a standardized beta of -.100, BMI also seems to have a greater association with self-esteem scale scores than the other variables. The smallest standardized beta is -.007 for heavy television use. Hispanic girls ($\beta =$

.017), light television use ($\beta=-.011$), age ($\beta=-.031$), and parent's education ($\beta=.032$) all had relatively low standardized betas in this model (see Table 6).

5.3.2.2 Model 2

An OLS Regression was also run for the above model and adding in the mediating variables of weight perception, weight control, GPA, and alternative time use (see Table 6, Model 2). As compared to girls that reported perceiving that they were about the right weight, girls that perceived they were overweight scored, on average 1.595 points lower on the self-esteem scale ($p<.01$) and girls that perceived they were underweight scored, on average .486 points lower ($p<.05$). Girls that reported that they were trying to change their weight scored, on average, .626 points lower than girls that reported they were not trying to change their weight ($p<.001$). For every point increase in GPA, self-esteem scale scores increased by an average of .937 points ($p<.001$). For every additional bout of non-physical leisure activity each week, self-esteem scale scores for girls increased by .087 points ($p <.01$) and for every additional bout of physical activity each week they increased by .092 points ($p<.001$). The adjusted R^2 of Model 2 for self-esteem scale scores for females is .135 ($p<.001$) so that about 13.5% of the variance in self-esteem is explained by these variables.

Comparing the standardized betas, perception of being overweight had the largest standardized beta at -.216. With a standardized beta of .192, GPA also seems to have a greater effect on self-esteem than the other variables. The smallest standardized beta is -.003 for age. Being black has the largest effect of the race/ethnicity variables, with a standardized beta of .133; the standardized beta for other minority groups is -.046. The standardized betas for BMI ($\beta=.071$), trying to change weight ($\beta=-.086$), non-physical leisure activity ($\beta=.061$) and physical activity ($\beta=.098$) were all moderate. Light television use ($\beta=-.012$), heavy television use

($\beta=.008$), parent's education ($\beta=-.022$), and perceiving being underweight ($\beta=-.041$) had relatively low standardized betas in this model.

5.3.3 Boys' Television Consumption and Self-Esteem

5.3.3.1 Model 1

Table 6 also presents the OLS regression results for boys. Television use was significantly associated with boys' self-esteem after controlling for race/ethnicity, age, BMI, and parent's education. Although light television users did not differ significantly from moderate users, heavy users scored, on average, .564 points lower on self-esteem than moderate users and this was statistically significant ($p<.001$). As compared to white males, black males scored, on average, .828 points higher ($p<.001$). Hispanic males scored, on average, .136 points lower than white males, but this was not a statistically significant difference. Males of other races/ethnicities scored, on average, .011 points lower than white males, but this was also not statistically significant. Every year increase in age predicted a .202 point decrease, which was statistically significant ($p<.001$). BMI was not statistically significant. The adjusted R^2 for this model is .022 ($p<.001$) so that only about 2.2% of the variance in self-esteem scale scores is explained by these variables (see Table 6).

Comparing the standardized betas, age had the largest standardized beta at .111. Black males had the second highest standardized beta at .089, which was close to the standardized beta for heavy use ($\beta=-.082$) which indicates that these three variables had a greater effect on self-esteem scale scores than the other variables. The remainder all had standardized betas of $-.026$ or smaller (see Table 6).

5.3.3.2 Model 2

After controlling for body image, school success, and alternative time use, the coefficient for self-esteem scores for heavy television users reduced to $-.449$ (from $-.564$ in Model 1), which indicates that the effect of television consumption was only slightly mediated by these variables. Body image was associated with self-esteem for boys. As compared to boys that reported perceiving that they were about the right weight, boys that perceived they were overweight scored, on average 1.286 points lower on the self-esteem scale ($p < .001$) and boys that perceived they were underweight scored, on average $.545$ points lower ($p < .001$). Boys that reported that they were trying to change their weight scored, on average, $.249$ points lower than boys that reported they were not trying to change their weight ($p < .05$). For every point increase in GPA, self-esteem scale scores increased by an average of $.668$ points ($p < .001$). For every additional bout of non-physical leisure activity each week, self-esteem scale scores for girls increased by $.093$ points ($p < .001$) and for every additional bout of physical activity each week they increased by $.066$ points ($p < .001$). The adjusted R^2 of Model 2 for self-esteem scale scores for males is $.088$ ($p < .001$) so that only about 8.8% of the variance in self-esteem is explained by these variables.

Comparing the standardized betas, perception of being overweight had the largest standardized beta at $-.164$. With a standardized beta of $.159$, GPA also seems to have a greater effect on self-esteem than the other variables. The smallest standardized beta is $.001$ for other minority boys. Being black has the largest effect of the race/ethnicity variables, with a standardized beta of $.097$; the standardized beta for Hispanic males is $-.004$. The standardized betas for heavy television use ($\beta = -.066$), age ($\beta = -.090$), BMI ($\beta = .077$) underweight ($\beta = -.069$), leisure activity ($\beta = .071$), and physical activity ($\beta = .086$) were all moderate. Light television use

($\beta=-.029$), parent's education ($\beta=-.028$), trying to change weight ($\beta=-.038$) had relatively low standardized betas in this model.

5.3.4 Gender Differences

In order to examine whether the associations between television and self-esteem vary by gender, I conducted a modified Chow test. The modified Chow test is used to determine if the coefficients for separate groups are significantly different from each other. Modified Chow tests were performed on coefficients that were statistically significant for both males and females. It is also helpful to note which coefficients were significant for girls or boys, but not both. Television use was significantly related to self-esteem for boys, but not for girls. This is surprising given the previous research that has found a stronger relationship for girls. Weight perception was more strongly associated with self-esteem for girls (Cohen's $b=-1.595$) than for boys ($b=-1.286$), as was weight control at $-.626$ for girls and $-.249$ for boys. For each point increase in GPA, girls' self-esteem scale scores increased by an average of .937 points and boys' increased by an average of .668 points, which indicates that it, too, is more strongly associated with self-esteem for girls. Leisure activity was more strongly associated with self-esteem for boys (Cohen's $b=.093$) than for girls (Cohen's $b=.087$); however physical activity was more strongly associated with self-esteem for girls (Cohen's $b=.092$) than for boys (Cohen's $b=.066$).

5.3.5 Girls' Television Consumption and Depressive Symptoms

5.3.5.1 Model 1

Table 7 presents the results of the ordinary least squares regression analysis for depressive symptoms. Television use was significantly associated with girls' depressive symptoms after controlling for television use, race/ethnicity, age, BMI, and parent's level of education. For females, as compared to respondents in the moderate use group, respondents in

the light use group scored .843 points higher on the depressive symptoms scale. This was statistically significant ($p < .05$). Respondents in the heavy use group scored, on average, .221 points lower than those in the moderate use group, but this was not statistically significant. As compared to white females, black females scored, on average, 1.623 points higher ($p < .001$). Hispanic females scored, on average, 2.207 points higher than white females, and other minority females scored, on average, 2.697 points higher than white females. All of the race/ethnicity coefficients were statistically significant ($p < .001$). Every year increase in age predicted a .315 point increase, and this was statistically significant ($p < .001$). For each one point increase in BMI, depressive symptoms scores for females increased by, on average, .124 points ($p < .001$). For each increase in the highest level of education a residential parent had completed, self-esteem depressive symptoms scores decreased by 1.001 points ($p < .001$). The adjusted R^2 for this model is .059 ($p < .001$) so that about 5.9% of the variance in self-esteem scale scores is explained by these variables.

Comparing the standardized betas, parent's education had the largest standardized beta at -.151. The smallest standardized beta is .013 for heavy television use. Hispanic youth ($\beta = .088$), other minority youth ($\beta = .086$), and black youth ($\beta = .071$) all had moderate standardized betas. Light television use ($\beta = .050$), age ($\beta = .069$), and BMI ($\beta = .067$) were still higher than heavy television use, but were relatively low in this model (see Table 7).

5.3.5.2 Model 2

An OLS Regression was run for the above model adding the mediating variables of weight perception, weight control, GPA, and leisure activity and physical activity (see Table 7). After controlling for body image, school success, and alternative time use, the coefficient for depressive symptoms for light users reduced slightly to .816 (from .843 in Model 1), which

indicates that the effect of television consumption was only slightly mediated by these variables. As compared to girls that reported perceiving that they were about the right weight, girls that perceived they were overweight scored, on average 2.490 points higher on the depressive symptoms scale ($p < .001$). Girls that perceived they were underweight scored, on average .204 points higher than girls that perceived they were about the right weight, but this was not a statistically significant difference. Girls that reported that they were trying to change their weight scored, on average, 1.533 points higher than girls that reported they were not trying to change their weight ($p < .001$). For every point increase in GPA, depressive symptom scale scores decreased by an average of 2.479 points ($p < .001$). Neither of the alternative time use variables were significantly associated with self-esteem. The adjusted R^2 of Model 2 for depressive symptoms scale scores for females is .142 ($p < .001$) so that about 14.2% of the variance in self-esteem is explained by these variables.

Comparing the standardized betas, GPA had the largest standardized beta at -.228. With a standardized beta of .151, perception of being overweight also seems to have a greater effect on depressive symptoms than the other variables. The smallest standardized beta is -.002 for heavy television use. Black ($\beta = .067$), Hispanic ($\beta = .067$), and other minority females ($\beta = .072$) all had very similar standardized betas. The standardized betas for BMI ($\beta = .079$), parent's education ($\beta = -.098$), and trying to change weight ($\beta = -.095$) were all moderate. Light television use ($\beta = .048$), age ($\beta = .052$), perception of being underweight ($\beta = .008$), leisure activity ($\beta = -.024$) and physical activity ($\beta = -.034$) had relatively low standardized betas in this model.

5.3.6 Boys' Television Consumption and Depressive Symptoms

5.3.6.1 Model 1

Results from Table 7 suggest that television use was significantly associated with boys' depressive symptoms after controlling for television use, race/ethnicity, age, BMI, and parent's level of education. For males, as compared to moderate users, light television users scored an average of 1.090 points higher and heavy users scored an average of 1.093 points higher on the depressive symptoms scale. These were both statistically significant ($p < .001$). As compared to white males, black males scored, on average, 1.275 points higher ($p < .001$), Hispanic males scored, on average, .788 points higher ($p < .05$), and other minority males scored, on average, 1.325 points higher ($p < .01$) than white males. For every one year increase in age, depressive symptom scores increased by .497 points ($p < .001$). For each increase in the highest level of education a residential parent had completed, scores decreased by an average of .708 points ($p < .001$). BMI was not significantly associated to depressive symptoms for boys. The adjusted R^2 for this model is .049 ($p < .001$) so that only about 4.9% of the variance in self-esteem scale scores is explained by these variables (see Table 7).

Comparing the standardized betas, age had the largest standardized beta at .134. Parent's education had the second highest standardized beta at -.128, which indicates that these two variables had a greater effect on depressive symptom scale scores than the other variables. Light television use ($\beta = .073$), heavy television use ($\beta = .078$), and black males ($\beta = .067$) all had moderate standardized betas. Hispanic males ($\beta = .037$), other minority males ($\beta = .051$), and BMI ($\beta = -.027$) all had relatively small standardized betas (see Table 7).

5.3.6.2 Model 2

Table 7 also presents the OLS regression results for depressive symptoms scale scores for males for Model 2. After controlling for body image, school success, and alternative time use, the coefficient for depressive symptoms for heavy television users is slightly reduced to .882 from 1.093, which indicates that the effect of television consumption was slightly mediated by these variables. It is still statistically significant ($p < .001$) so a small amount of the impact of television consumption on self-esteem for boys may have been explained by this model.

As compared to boys that reported perceiving that they were about the right weight, boys that perceived they were overweight scored, on average 1.632 points higher on the depressive symptoms scale ($p < .001$). Boys that perceived they were underweight scored, on average .259 points higher, but this was not a statistically significant difference. Boys that reported that they were trying to change their weight scored, on average, .857 points higher than boys that reported they were not trying to change their weight ($p < .001$). For every one point increase in GPA, depressive symptoms scale scores decreased by an average of 1.694 points ($p < .001$). For every additional bout of non-physical leisure activity each week, depressive symptoms scale scores for boys decreased by .110 points ($p < .05$) and for every additional bout of physical activity each week they decreased by .122 points ($p < .001$). The adjusted R^2 of Model 2 for self-esteem scale scores for males is .110 ($p < .001$) so that about 11% of the variance in self-esteem is explained by these variables.

Comparing the standardized betas, GPA had the largest standardized beta at $-.198$. Age ($\beta = .113$) and perception of being overweight ($\beta = .103$) had the next highest standardized betas and may have a greater effect on depressive symptoms than the other variables. The smallest standardized beta is .016 for perception of being underweight. Hispanic males had the smallest

standardized beta of the race/ethnicity variables ($\beta=.028$) while black males ($\beta=.050$) and other non-Hispanic minority males ($\beta=.051$) had very similar standardized betas. The remainder of the variables also had relatively similar standardized betas. Light television users ($\beta=.077$) and heavy users ($\beta=.063$) both had about the same impact on depressive symptoms. BMI ($\beta=-.091$) had a slightly larger impact. Parent's education ($\beta=.070$), trying to change weight ($\beta=.064$), and physical activity ($\beta=-.078$) had moderate impact while leisure activity had a relatively low standardized beta ($\beta=-.042$).

5.3.7 Gender Differences

In order to help answer research questions 3 and 4, whether the associations between television and depressive symptoms vary by gender, I conducted modified Chow tests for this model as well. These results are presented in Table 7. Television use was significantly related to depressive symptoms for both girls and boys. Weight perception was more strongly associated with depressive symptoms for girls ($b=2.490$) than for boys ($b=1.632$), as was weight control at 1.533 for girls and .857 for boys. For each point increase in GPA, girls' depressive symptoms scale scores decreased by an average of 2.479 points and boys' decreased by an average of 1.694 points, which indicates that it, too, is more strongly associated with depressive symptoms for girls. Leisure activity was not significantly associated with depressive symptoms for either girls or boys; however physical activity was more strongly associated with depressive symptoms for boys ($b=-.122$) than for girls ($b=-.071$).

The coefficients for light television use, black, other minority, and age were are statistically significant for both girls and boys, but the modified Chow tests showed that the difference between girls and boys on each was not statistically significant. The differences between the BMI coefficients for girls and boys were statistically significant ($p<.05$). A one

point increase in BMI resulted in an average decrease of .145 points on the depressive symptoms scale for girls, and a .139 point decrease for boys. The differences for parent's level of education was also statistically significant ($p < .05$).

As compared to the girls that reported perceiving that they were about the right weight, girls that reported perceiving that they were overweight scored an average of 2.490 points higher on the depressive symptoms scale. As compared to boys that reported perceiving that they were about the right weight, boys that reported perceiving that they were overweight scored an average of 1.632 points higher. The modified Chow test indicated that the difference between the coefficients for boys and girls was statistically significant ($p < .05$). This indicates that perception of being overweight has a statistically significantly greater impact on depressive symptoms for girls than for boys. This can also be seen in the weight control variable. Girls that were actively trying to change their weight scored, on average, 1.533 points higher than the girls that were not trying to change their weight. The boys that were trying to change their weight scored, on average, .857 points higher than the boys that were not. The difference between these coefficients was statistically significant ($p < .05$). A one point increase in GPA resulted in an average decline of 2.479 points for girls 1.694 points for boys. The difference between these coefficients was statistically significant ($p < .05$). This indicates that higher grades benefit both girls and boys in terms of depressive symptoms, but the benefit might be higher for girls than for boys.

CHAPTER 6

DISCUSSION

The purpose of this study was to examine the relationship between the amount of television adolescents watch and their well-being, with differences between girls and boys being key. Self-esteem can be a fairly unstable measurement, so it was important to include another measurement of well-being; depressive symptoms. Cultivation theory and social comparison theory were two of the most prevalent theories in the literature that was reviewed for this study and proved useful in looking at the relationships. My results were somewhat surprising though, as there was not a linear relationship between television consumption and well-being for either girls or boys, and it appears that other factors may be more important to girls' and boys' well-being than just the number of hours they spend watching television.

6.1 Television and Well-Being

My first research question asked if television consumption was associated with self-esteem and depressive symptoms. Contrary to the findings of Martins & Harrison, (2012), or Polce-Lynch and colleagues (2001) Hypothesis 1A, that television hours would be negatively associated with self-esteem for girls, was not supported. In addition, Hypothesis 1B was not supported either since boys that were heavy users had lower self-esteem than the moderate users. For both girls and boys, the moderate use group had the highest self-esteem levels, which created a curvilinear relationship. The differences between the groups of girls were not significant. For boys, the moderate and heavy users had scores that were significantly different from each other, but the difference was very small. This indicates that this relationship is weak at best, and as with the girls, media content might have more of an impact than the amount of television they watch.

The association between television consumption and depressive symptoms provided similar results. Hypothesis 1C was partially supported, since the girls that were heavy users reported more frequent depressive symptoms than either the light or moderate female users. Hypothesis 1D, that television hours would be negatively associated with depressive symptoms for boys, was not supported. For both boys and girls, the moderate use group once again had the better scores. Among the boys, the differences between all groups were significant. These differences are not very dramatic though, given that the scores for each group vary by only about one point, meaning that moderate television users report experiencing depressive symptoms only slightly less frequently than their peers that report light or heavy use.

While cultivation theory posits that frequent and repeated exposure to mass media shapes beliefs about the world, and previous researchers have found that television consumption was negatively associated with well-being (Hammermeister et al., 2005, Martins & Harrison, 2012), my findings did not reflect a strong association between the number of hours of television girls and boys reported watching each week and their self-esteem scores or depressive symptoms. Moreover, given that for both of these measures, the groups that reported moderate use reported better outcomes than those that were light users, my findings are inconsistent with the idea that increased exposure would necessarily lead to decreased well-being. Previous research using social comparison theory suggests that comparisons to characters on television may have a negative effect on well-being if the attributes seem unattainable (Knobloch-Westerwick, 2014; Milkie, 1999). My expectation that television consumption would have a more negative effect for girls than for boys was based on previous research that found that males and females are often portrayed in stereotypical ways (Gerding & Signorielli, 2014), and that girls are consistently underrepresented in the media (Gerding & Signorielli, 2014; Hoplamazian &

Knobloch-Westerwick, 2014; Martins & Harrison, 2012); however, my results were not consistent with this expectation. Given the pervasiveness of messages about physical appearance ideals for both females (Gerding & Signorielli, 2014) and males (Smolak & Stein, 2010; Tiggemann & Slater, 2004), repeated exposure through prolonged television consumption may not be necessary for internalization (Harrison, 2003).

6.2 Television, Body Image, School Success, and Alternative Time Use

My second research question asked if television consumption was associated with body image, school success, and alternative time use. Once again, I was surprised to find that there was not a statistically significant relationship between television consumption and weight perception or weight control for either girls or boys. These findings are in direct contrast with Clay, Vignoles, and Dittmar's (2005) findings. The findings in the present study did support the findings of Cooper and colleagues (1999) and Rideout, Foehr and Roberts (2010), however. For both girls and boys, there was a significant, negative relationship between television consumption and grade point average. Among girls, television consumption was associated with both leisure and physical activity. The association for leisure activity was negative. Heavy users reported engaging in physical activities least frequently while moderate users reported the greatest frequency. The association between television consumption and leisure activity for boys was also significant, but the heavy users reported engaging in leisure activities least frequently while the moderate use group reported the greatest frequency. Here again, the moderate users reported the most frequent bouts of physical activity, but it was actually the light users that reported the least frequent.

While they were not part of my original research questions, there were other bivariate relationships that proved to be interesting. The girls that perceived that they were about the right

weight experienced greater well-being than the girls that perceived that they were either underweight or overweight. Because this is a measure of perception, not a physical measurement of weight, weight perception may be a function of social comparisons. As girls watch television programming that portrays ideal body types, they might make assumptions about their own body shapes that can influence how they see their weight in comparison to others. The boys that perceived that they were about the right weight also experienced greater well-being, while the boys that perceived that they were overweight or underweight experienced decreased well-being. This means that for both girls and boys, perceptions about their weight are related to well-being, and the perception of being about the right weight results in greater well-being. Both girls and boys that were trying to change their weight reported decreased well-being; however, these differences were not meaningful for the boys, which indicates that, for them, weight control does not significantly contribute to self-esteem or depressive symptoms.

Of note here is that girls who perceived that they were overweight, or were trying to change their weight, experienced the lowest levels of well-being. This indicates that body image has a greater influence on well-being for girls than for boys. This is also consistent with the finding that the media presents a thin ideal for women that does not reflect reality (Harrison, 2003), which helps cultivate the beauty standards for both males and females, and girls who engage in comparison with the images they see in the media may experience a decrease in well-being when they feel that the ideals are unattainable.

Grade point average was associated with increased self-esteem and decreased depressive symptoms for both girls and boys, and girls and boys that engaged in more non-physical leisure activity or physical activity each week had lower depressive symptoms than those that engaged in those activities less often. School success as well as leisure and physical activities can all be

seen as alternatives to television consumption. Adolescents that have higher levels of school success may spend more time on homework or studying than their peers, although time spent on homework was not looked at in this study. One of the primary tenants of cultivation theory is that the cumulative effect of exposure to the dominant messages transmitted on television is that the “reality” portrayed on television begins to appear natural and normal (Gerbner et al., 1986; Gerding & Signorielli, 2014). This might indicate that adolescents who spend less time watching television and more time experiencing the real world might not buy into media messages as easily and might then, in turn, experience higher levels of well-being. Real world experiences could also provide them with a more diverse comparison group that does not necessarily represent the unattainable standards set by the media.

6.3 Mediating Television and Well-Being

The third research question asked if body image, school success, and alternative time use help explain the association between television consumption and self-esteem or depressive symptoms. For both self-esteem and depressive symptoms, the second OLS model did a better job of predicting scores. Hypothesis 2A and Hypothesis 2B were partially supported. Controlling for body image, school success, and alternative time use slightly mediated the effect of television consumption on well-being for boys. What these models indicate is that there are many factors other than television use that are associated with self-esteem and depressive symptoms. Body image, school success, and alternative time use had much stronger associations with well-being. For this reason, what adolescents are watching may be more important than how often they are watching.

6.4 Limitations and Future Research

This study is not without its limitations. The first limitation is that it is cross-sectional and cannot address causality. This means that it captures information about the media habits and well-being of adolescents at one moment in time. Media use and other activities change over time, as do weight perception and GPA. It is also possible that adolescents with lower self-esteem, or who experience more frequent depression, turn to television as a source of comfort. This data does not capture the progression of these attributes over time. The second would be the age of the data. Wave I data of Add Health was collected from middle and high school students in 1994-1995. At that time, the Internet was still in its infancy and the only way to watch television was on a television set. Television programming is still widely viewed, but it is now accessible anywhere, anytime, to just about anybody. Viewing options have also grown with the availability of services such as Netflix and Hulu, which both offer original programming alongside traditional network and cable television.

Another limitation is that this data only accounts for the quantity of television consumption, not the quality. There were no questions pertaining to what adolescents were watching, so there is no way to know to whom they were possibly making social comparisons. Future studies could address this by asking adolescents to keep a diary of the television shows they watched and then examining the characteristics of the characters in those shows. Add Health data also left out another important question; with whom the respondents were watching television? Previous research has indicated that adolescents that watch television with their parents, or whose parents talk to them about what they watch, are less likely to internalize the messages they receive from the media (Clay, et al., 2005). Future research should include other types of mass media (movies, music, magazines, and social networking sites) as well as

information on the content of the media. This could include specific television shows or genres as well as movie and music genres.

During the time period that the Add Health data was collected, improving self-esteem was seen as a way to prevent or solve problems that were related to adolescence. As Baumeister, Campbell, Kruger and Vos (2003) discuss, this would imply that adolescents were struggling with low levels of self-esteem. This was not what they found, nor was it seen in this study. The self-esteem scale scores were skewed high for all of the adolescents and hovered around 24 points on a scale with a range of 6 to 30. I believe that self-esteem is a meaningful measure of well-being given its association with depressive symptoms, however other research suggests that it does not provide the benefits that it was previously believed to, and that future research would be better served by using more direct measures of happiness and success (Baumeister et al., 2003).

Another factor that should be examined in more detail in future studies is race/ethnicity. Other researchers have found consistent racial differences in self-esteem (Martins and Harrison, 2012). Consistent with those findings, the current study found that black males had the highest levels of self-esteem. One of the tenets of social comparison theory is that comparisons are made with similar others; hence males compare themselves to males while females compare themselves to females. Milkie (1999) found that black girls were less prone to social comparisons with girls in magazines because they identified that these were images for white girls. These limitations and suggestions for future research lead me to the conclusion of this study and what possible implications my findings might have.

CHAPTER 7

CONCLUSION

There are several important implications for this study. While it was expected that there would be a negative association between television consumption and self-esteem for girls, this was not the case. This prediction was guided by cultivation theory; however the findings may mean that the content of the programming being consumed may have more impact than the quantity, as discussed in Clay, Vignoles, and Dittmar (2005). This could help shape media use recommendations for parents. While the AAP currently recommends that adolescents watch no more than two hours of television each day, my findings suggest that this time limit may not be as beneficial as recommendations that include limiting the types of television programs kids are allowed to watch, and providing guidelines on how to talk to adolescents about media representations.

Rideout and colleagues, (2010) found that about 71% of adolescents have a television in their bedroom and that these kids watch an average of 1 hour more per day than their peers that do not have a television in their bedroom. While the increase in time may not have as many consequences as expected, it is logical to think that kids that have free access to a television in their bedrooms may have fewer limits on what they watch, or may be less likely to follow the limits they are given. They may also be less likely to watch with a parent who might be able to mediate some of the messages. Strasburger (2010) suggests that parents co-view television with their children so that they can discuss the content and help teach kids critical viewing skills.

The largest implication is the importance of media literacy, which Strasburger and Hogan (2013) say may enhance knowledge, connectedness, and health. Given the pervasiveness of media in our culture, even those that choose to not watch television or actively consume other

forms of media cannot completely opt out of it. Advertising is everywhere; plastered on the side of the city bus, splashed across billboards, and embroidered across the front of a ball cap. Music plays over the speakers at the grocery store. Restaurants boast televisions showing the latest sporting event or national news. As schools advance technologically, students will likely spend more time on the Internet, where they can discover just about anything. It seems that now, more than ever, it is important to teach kids how to view these messages critically.

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APPENDIX

Table 1: Descriptive Statistics of Independent and Dependent Variables

	Females					Males				
	N	Mean or Proportion	SD	Min	Max	N	Mean or Proportion	SD	Min	Max
Adolescent Well-Being										
Self-Esteem Scale		24.215	(3.616)	6	30		25.282	(3.279)	6	30 ***^
Depressive Symptoms		11.754	(8.065)	0	50		9.902	(6.672)	0	48 ***^
Body Image										
Weight Perception										***
Underweight	302	0.103				698	0.223			
About the right weight	1,474	0.502				1,715	0.549			
Overweight	1,162	0.395				711	0.228			
Weight Control										**
Trying to change	1,579	0.538				1,577	0.505			
Not trying to change	1,359	0.462				1,547	0.495			
Grade Point Average		2.927	(0.741)	1	4		2.688	(0.781)	1	4 ***^
Alternative time use										
Leisure activity		5.542	(2.520)	0	10		5.988	(2.529)	0	10 ***
Physical activity		8.879	(3.850)	0	20		9.963	(4.241)	0	20 ***^
Gender										
Female	2,938	0.485								
Male						3,124	0.515			
Television Consumption										
Light use	1,048	0.357				867	0.278			
Moderate use	994	0.338				1,144	0.366			
Heavy use	896	0.305				1,113	0.356			
Race/Ethnicity										
White	1,946	0.662				2,091	0.669			
Black	434	0.148				456	0.146			
Hispanic	349	0.119				351	0.112			
Other	209	0.071				226	0.072			
Age		15.354	(1.772)	11	21		15.512	(1.804)	11	21 **
Body Mass Index (BMI)		22.216	(4.369)	12	46.4		22.601	(4.392)	11	56.4 **
Parent's Education										
< H.S. diploma	311	0.106				310	0.099			
H.S. diploma	817	0.278				860	0.275			
Some College	802	0.273				821	0.263			
4 Year Degree	580	0.197				692	0.222			
>4 year degree	428	0.146				440	0.141			
Total Sample N	2,938					3,124				

Source: National Longitudinal Study of Adolescent Health, Wave I (1994-1995)

Note: To test for significance of gender differences in bivariate relationships, nominal variables use Chi Square, ordinal variables use Spearman's Correlation, interval variables use t-test.

*p<.05 **p<.01 ***p<.001

^d>.02 Cohen's d is used to determine if effect size of a statistically significant relationship determined by a t-test creates a meaningful difference. d>.02 indicates a meaningful difference.

Table 2: Means or Proportions of Key Variables by Television Consumption and Gender

Television Consumption	Females			Males		
	Light	Moderate	Heavy	Light	Moderate	Heavy
Self-Esteem Scale	24.174 (3.621)	24.259 (3.560)	24.214 (3.675)	25.268 (3.371)	25.519 (3.223)	25.049 ** (3.249)
Depressive Symptoms	11.990 (8.195)	11.157 (7.618)	12.139 ** (8.359)	10.354 (7.043)	9.139 (6.276)	10.334 *** (6.706)
Weight Perception						
Underweight	0.343	0.373	0.284	0.259	0.391	0.350
About the right weight	0.371	0.337	0.291	0.296	0.359	0.345
Overweight	0.372	0.330	0.328	0.251	0.359	0.390
Weight Control						
Not trying to change	0.362	0.345	0.293	29.600	35.800	34.600
Trying to change	0.351	0.333	0.315	0.259	0.374	0.367
Grade Point Average	2.993 (0.720)	2.984 (0.745)	2.787 *** (0.743)	2.754 (0.798)	2.716 (0.766)	2.609 *** (0.778)
Leisure Activity	5.706 (2.485)	5.593 (2.464)	5.295 ** (2.604)	5.966 (2.556)	6.210 (2.504)	5.777 *** (2.516)
Physical Activity	8.968 (3.974)	9.054 (3.937)	8.581 * (3.583)	9.518 (4.362)	10.234 (4.218)	10.030 ** (4.144)
N	1048	994	896	867	1144	1113

Source: National Longitudinal Study of Adolescent Health, Wave I (1994-1995)

Note: Chi-square is used for nominal variables, Spearman's Rank Correlation is used for ordinal variables, and ANOVA is used for interval variables.

*p<.05 **p<.01 ***p<.001

Table 3: Means and Standard Deviations for Dependent Variables by Weight Perception and Gender

Weight Perception	Females				Males			
	Underweight	About right	Overweight	F	Underweight	About right	Overweight	F
Self-Esteem Scale	24.123 (3.751)	25.064 (3.258)	23.162 (3.732)	95.783 ***	24.876 (3.483)	25.753 (3.105)	24.542 (3.296)	42.196 ***
Depressive Symptoms	11.579 (7.655)	10.403 (7.397)	13.513 (8.631)	50.007 ***	10.430 (7.255)	9.362 (6.244)	10.687 (6.959)	12.825 ***
N	302	1474	1162		698	1715	711	

Source: National Longitudinal Study of Adolescent Health, Wave I (1994-1995)

Note: A One Way ANOVA was used to test for significance of differences.

*p<.05 **p<.01 ***p<.001

Table 4: Comparison of Means by Weight Control Group and Gender

	Females			Males		
	Not trying to change	Trying to change		Not trying to change	Trying to change	
Self-Esteem Scale	24.913 (3.372)	23.615 (3.711)	t=9.929 ***^	25.524 (3.231)	25.044 (3.309)	t=4.107 ***
Depressive Symptoms	10.230 (7.324)	13.065 (8.436)	t=9.749 ***^	9.272 (6.420)	10.520 (6.857)	t=5.248 ***
N	1359	1579		1547	1577	

Source: National Longitudinal Study of Adolescent Health, Wave I (1994-1995)

*p<.05 **p<.01 ***p<.001

^d>.02 Cohen's d is used to determine if effect size of a statistically significant relationship determined by a t-test creates a meaningful difference. d>.02 indicates a meaningful difference.

Table 5: Bivariate Correlations

	Females			
	1	2	3	4
1. Self-esteem scale				
2. Depressive symptoms scale	-.511 ***			
3. GPA	.206 ***	-.287 ***		
4. Leisure Activity	.108 ***	-.097 ***	.137 ***	
5. Physical Activity	.139 ***	-.108 ***	.139 ***	.273 ***

	Males			
	1	2	3	4
1. Self-esteem scale				
2. Depressive symptoms scale	-.455 ***			
3. GPA	.168 ***	-.244 ***		
4. Leisure Activity	.094 ***	-.088 ***	.059 **	
5. Physical Activity	.154 ***	-.153 ***	.126 ***	.239 ***

Source: National Longitudinal Study of Adolescent Health, Wave I (1994-1995)

*p<.05 **p<.01 ***p<.001

Table 6: Ordinary Least Squares Regression Results for Self-Esteem Scale Scores

Variables	Females						Males					
	Model 1			Model 2			Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Television Consumption (Reference -Moderate use)												
Light use	-0.085	0.159	-0.011	-0.087	0.150	-0.012	-0.194	0.146	-0.026	-0.213	0.142	-0.029
Heavy use	-0.058	0.167	-0.007	0.059	0.158	0.008	-0.564	0.138	-0.082 ***	-0.449	0.134	-0.066 **
Race/Ethnicity (Reference -White)												
Black	1.337	0.194	0.131 ***	1.352	0.186	0.133 ***	0.828	0.169	0.089 ***^	0.905	0.166	0.097 ***^
Hispanic	-0.188	0.214	-0.017	0.089	0.204	0.008	-0.136	0.191	-0.013	-0.039	0.185	-0.004
Other Minority	-0.918	0.260	-0.065 ***	-0.651	0.247	-0.046 **	0.011	0.227	0.001	0.011	0.220	0.001 **
Age	-0.064	0.038	-0.031	-0.005	0.037	-0.003	-0.202	0.033	-0.111 ***	-0.163	0.034	-0.090 ***
Body Mass Index (BMI)	-0.083	0.016	-0.100 ***	0.059	0.018	0.071 **	-0.006	0.014	-0.008	0.058	0.017	0.077 ***^
Parent's education	0.094	0.057	0.032	-0.064	0.055	-0.022	0.061	0.049	0.022	-0.077	0.049	-0.028
Weight Perception (Reference - about the right weight)												
Overweight				-1.595	0.170	-0.216 **				-1.286	0.172	-0.164 ***^
Underweight				-0.486	0.219	-0.041 *				-0.545	0.153	-0.069 ***
Weight Control (Reference -not trying to change)				-0.626	0.143	-0.086 ***				-0.249	0.120	-0.038 *^
Grade Point Average (GPA)				0.937	0.089	0.192 ***				0.668	0.075	0.159 ***^
Leisure activity				0.087	0.026	0.061 **				0.093	0.023	0.071 ***^
Physical activity				0.092	0.017	0.098 ***				0.066	0.014	0.086 ***^
R^2	.031			0.135			0.022			0.088		
<i>F</i>	12.650 ***			33.701 ***			9.619 ***			22.398 ***		
<i>N</i>	2937			2937			3123			3123		

Source: National Longitudinal Study of Adolescent Health, Wave I (1994-1995)

* $p < .05$ ** $p < .01$ *** $p < .001$, ^ Modified Chow $p < .05$

Table 7: Ordinary Least Squares Regression Results for Depressive Symptoms Scale Scores

Variables	Females						Males					
	Model 1			Model 2			Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Television Consumption (Reference -Moderate use)												
Light use	0.843	0.350	0.050 *	0.816	0.334	0.048 *	1.090	0.294	0.073 ***	1.142	0.285	0.077 ***
Heavy use	0.221	0.367	0.013	-0.037	0.351	-0.002	1.093	0.277	0.078 ***	0.882	0.269	0.063 **
Race/Ethnicity (Reference -White)												
Black	1.623	0.426	0.071 ***	1.527	0.413	0.067 ***	1.275	0.340	0.067 ***	0.944	0.335	0.050 **
Hispanic	2.207	0.470	0.088 ***	1.673	0.452	0.067 ***	0.788	0.383	0.037 *^	0.597	0.372	0.028
Other Minority	2.697	0.570	0.086 ***	2.265	0.548	0.072 ***	1.325	0.456	0.051 **^	1.315	0.442	0.051 **
Age	0.315	0.084	0.069 ***	0.238	0.082	0.052 **	0.497	0.066	0.134 ***^	0.417	0.068	0.113 ***
Body Mass Index(BMI)	0.124	0.034	0.067 ***	-0.145	0.040	-0.079 ***	-0.031	0.027	-0.021	-0.139	0.034	-0.091 ***^
Parent's education	-1.001	0.125	-0.151 ***	-0.648	0.123	-0.098 ***	-0.708	0.099	-0.128 ***^	-0.388	0.099	-0.070 ***^
Weight Perception (Reference - about the right weight)												
Overweight				2.490	0.378	0.151 ***				1.632	0.345	0.103 ***^
Underweight				0.204	0.487	0.008				0.259	0.308	0.016
Weight Control (Reference -not trying to change)				1.533	0.317	0.095 ***				0.857	0.241	0.064 ***^
Grade Point Average (GPA)				-2.479	0.199	-0.228 ***				-1.694	0.152	-0.198 ***^
Leisure activity				-0.078	0.058	-0.024				-0.110	0.046	-0.042 *
Physical activity				-0.071	0.039	-0.034				-0.122	0.029	-0.078 ***
<i>R</i> ²	.059			0.142			0.049			0.110		
<i>F</i>	24.217 ***			35.752 ***			20.95 ***			28.437 ***		
<i>N</i>	2937			2937			3123			3123		

Source:National Longitudinal Study of Adolescent Health, Wave I (1994-1995)

p* < .05 *p* < .01 ****p* < .001, ^ Modified Chow *p* < .05