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Relations Among Media, Eating Pathology and Body Dissatisfaction in College Women

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RELATIONS AMONG MEDIA, EATING PATHOLOGY AND BODY DISSATISFACTION IN COLLEGE WOMEN

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science at Virginia Commonwealth University

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Table of Contents

Page

Acknowledgements ................................................................. ii
List of Tables ........................................................................ vi
List of Figures .......................................................................... vii
Abstract ................................................................................ viii
Introduction ............................................................................. 1
  Body Image: Definitions and Theoretical Perspectives ............... 1
  Social Comparison Theory ....................................................... 2
  Social Learning Theory .......................................................... 4
Body Image Dissatisfaction and Media ....................................... 6
  The nature and impact of media images ................................... 8
  Review of Research on Risk Factors for Body Dissatisfaction .... 10
  Social comparison ................................................................. 10
  Internalization of the thin ideal ............................................. 11
  Interaction of thin-ideal internalization and body dissatisfaction ... 13
  Self-esteem .......................................................................... 15
  Culture as a potential protective factor .................................. 16
  Extant studies of media use and body dissatisfaction ............... 17
Theories of Media Use ............................................................... 19
  Uses and gratifications .......................................................... 19
  Parasocial interaction ........................................................... 22
The Internet as a New Media Modality ..................................... 25
Hypotheses ................................................................. 27
Method ................................................................. 28
Participants ............................................................. 28
Measures ................................................................. 28
  Media Exposure ....................................................... 28
  Eating Disorder Inventory ........................................ 32
  Sociocultural Attitudes Toward Appearance Questionnaire – 3 ........ 33
  Rosenberg Self-Esteem Scale .................................... 34
Procedure ................................................................. 34
Results ................................................................. 38
  Data analyses .......................................................... 38
  Descriptive statistics ............................................... 38
  Tests of statistical significance ................................. 45
    Hypothesis 1 ....................................................... 45
    Hypothesis 2 ....................................................... 48
    Hypothesis 3 ....................................................... 49
    Hypothesis 4 ....................................................... 50
    Hypothesis 5 ....................................................... 51
    Hypothesis 6 ....................................................... 56
    Hypothesis 7 ....................................................... 60
Discussion ............................................................... 62
  Descriptive results .................................................. 63
  Media use and body dissatisfaction ........................... 64
Impact of different Internet activities on body dissatisfaction ............... 66
Self-esteem as a moderator .................................................. 67
Implications ........................................................................... 68
Limitations ............................................................................. 69
References .............................................................................. 73
Appendix .................................................................................. 85
Media Use Questionnaire ....................................................... 85
Vita ......................................................................................... 92
List of Tables

Table 1. Summary of Descriptive Analyses of Psychological Measurements ................................................. 39
Table 2. Amount and Type of Media Use by College Female ................................................................. 40
Table 3. Internet Used by Category (Number of visits and hours per month) ........................................... 43
Table 4. Television Used by Category ......................................................................................................... 44
Table 5. Magazines Used by Category (Hours per month) ........................................................................ 45
Table 6. Correlations between Media Use, Eating Pathology, and Body Dissatisfaction ............................... 48
Table 7. Internet Categories as Predictors of Body Dissatisfaction .............................................................. 55
Table 8. Self-Esteem as a Moderator of Media Use in Predicting Body Dissatisfaction .............................. 58
Table 9. Body Mass Index (BMI) Demographics for Sample) ....................................................................... 61
List of Figures

Figure 1. Relation between Amount of Internet Use and Body Dissatisfaction for Different Levels of Self-Esteem ............... 59
Abstract

RELATIONS AMONG MEDIA, EATING PATHOLOGY AND BODY DISSATISFACTION IN COLLEGE WOMEN

By Carrie E. Bair, B.A.

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science at Virginia Commonwealth University.

Virginia Commonwealth University, 2011.

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Research has identified a relation between exposure to thin-ideal magazine and television media images and eating disorder pathology. However, few studies have examined the potential influence of Internet media on eating disorder behaviors and attitudes. This study investigated the associations among appearance-orientated media exposure, body dissatisfaction, eating pathology and thin-ideal internalization in a sample of 421 female undergraduate students. Results indicate that undergraduate women spend significantly more time viewing appearance-oriented sources online, rather than reading appearance-orientated magazines. Appearance-oriented Internet consumption was also more strongly associated with eating disorder pathology than was use of other media (television and magazines). Relations between appearance-orientated media use (all types) and body dissatisfaction was mediated by thin-ideal internalization. These
findings are consistent with those of previous research, and highlight the vulnerability individuals high in thin-ideal internalization might have following media exposure. They also suggest that Internet media might be an important topic to include in eating disorders prevention and treatment.
Western media is saturated with images promoting beauty, thinness, diet and exercise. Thin-ideal television and print media can serve as a risk factor for eating disorders (Levine & Murnen, 2009; Tiggemann, 2003; Tiggeman, 2006). However, the potential risk associated with exposure to online thin-ideal images has not been studied. The Internet is the fastest growing mass media market. In January 2009, 62% of 18 – 29 year olds reported using the Internet for more than an hour per day, a 12% increase from 2008 (Gallup, 2009). Thus, the Internet should be examined as a method of conveying social ideals and potentially influencing body image dissatisfaction in young women.

This study will address this issue by comparing the effects of exposure to Internet thin-ideal images with exposure to magazine and television thin-ideal images on body dissatisfaction. The following sections review previous research addressing body dissatisfaction, theories of media use, and hypothesized links between media and body dissatisfaction. This review also provides the rationale for the current study.

**Literature Review**

**Body Image: Definitions and Theoretical Perspectives**

Body image is broadly defined as, “the picture of our own body which we form in our mind … the way in which the body appears to ourselves” (Schilder, 1950, p.137). Body image has also been defined to mean a combination of at least 16 components including body satisfaction, body esteem, body concern and appearance satisfaction (Thompson et al, 1999). Finally, body dissatisfaction has been described as a negative subjective evaluation of one’s own body (Stice & Shaw, 2002).
Body image dissatisfaction is one of the core symptoms of the eating disorders anorexia nervosa (AN) and bulimia nervosa (BN, Cash & Deagle, 1997; Stice & Shaw, 2002; Striegel-Moore, Silberstein, French & Rodin, 1989). The etiology of these eating disorders is generally considered attributable to a complex combination of environmental, biological, developmental, and psychological factors (Fairburn, 1994; Mazzeo, Slof-Op’t Landt, van Furth & Bulik, 2006; Stice, 2001; Striegel-Moore & Bulik, 2003).

Environmental risk factors include the media’s promotion of an extremely thin body type for women. Biological risk factors include genetics, as rates of eating disorders are concordant in monozygotic twins (who share 100% of their genes) compared with dizygotic twins (who share about 50% of their genes, Fichter & Noegel, 1990).

Developmental risk factors include early or late pubertal timing for girls (McCabe & Ricciardelli, 2004). Psychological risk factors include temperament and personality; for example, the personality trait of perfectionism is associated with higher rates of eating disorders (Fairburn, 1999). Childhood sexual abuse is also linked with eating disorder risk, specifically BN (Wonderlich, Brewerton, Jocic, Dansky & Abbott, 1997, Thompson, 1994). This literature review will not attempt to cover all possible theories of eating disorder etiology, but rather, will focus on sociocultural theories of disordered eating, as these best relate to the role of the media in body image dissatisfaction.

Social Comparison Theory

Social Comparison Theory (SCT, Festinger, 1954) is based upon the principle that people are driven to evaluate their own and others’ opinions and activities. When objective, non-social means of evaluation are not available, a non-objective comparison between the opinions, abilities, or appearance of oneself to another, or to the group as a
whole, often satisfies this need. Festinger posits further that individuals want to know if their opinions and activities are consistent with general norms, and rely on others to help them make this evaluation. SCT also distinguishes between upward comparisons (when one compares herself with someone believed to be in a more socially desirable place), and downward comparisons (when one compares him/herself with someone believed to be in a less desirable place). Festinger states that there is an intrinsic bias for preferring one opinion to another, and this bias provides the value and direction for the comparison as the more valued opinion will serve as the basis for an upward comparison (Festinger, 1954). When an individual discovers a discrepancy between herself and the others, she will adjust her behavior to minimize this discrepancy. Social comparison can impact body image when individuals compare themselves to the ubiquitous images of thin models and celebrities in the media. Following Festinger’s theory, if this comparison is made and a discrepancy is found, the individual might change her behavior to compensate for this difference. It can be reasonably hypothesized from SCT that if the source of the comparison is greatly influential, such as a celebrity, this comparison could have a significant impact.

SCT has been used frequently as a basis for studying perceptions and valued behavior such as the media’s portrayal of acceptable body size (Engelin-Maddox, 2005; Cohen, 2008; Corning, Krumm & Smitham, 2006). Although most people engage in some level of social comparison (Gibbons & Buunk, 1999) there are risks associated with high levels of this behavior. The goal of social comparison is to gain more information about the self. A high need for this information is thought to indicate a lack of a secure sense of self (Gibbons & Buunk, 1999). High levels of social comparison are associated
with greater neuroticism, depression and anxiety, and lower self-esteem (Gibbons & Buunk, 1999).

Friends and social groups also provide settings for individuals to engage in social comparison. Indeed, one hypothesis regarding the relatively high rate of eating disorders at universities and colleges suggests that these settings provide increased opportunity for social comparison with peers (Hoek, 2002). One study evaluated whether the ratio of male to female students affected the rate of social comparison by surveying undergraduate women in female-only and mixed-gender university settings. They found that females attending universities with predominately female populations were more likely to engage in social comparison and reported more eating disorder pathology (Lindner, Hughes & Fahy, 2008). There are two plausible explanations for these findings. First, women at colleges with all-female populations have more opportunity to engage in social comparison with other women. Second, there might be increased competition for heterosexual romantic opportunities at all-female colleges. A limitation of this study is that college campuses that differ significantly in gender compositions also likely differ in many other ways, such as average distance of participant from family of origin, and values. More research is necessary before a causal relationship can be confirmed, nonetheless, this previous work does provide some important directions for future research.

Social Learning Theory

Another theoretical perspective relevant to studies of media use and body dissatisfaction is Social Learning Theory. This theory is based on the idea that people learn behaviors by observing models (Bandura, 1977). These role models are often
parents, family members, friends or teachers who model appropriate behaviors and reactions to novel situations that the observers use to inform their own current and future behaviors. Bandura describes symbolic learning as observing modeled behavior and then coding it into memory as words, labels or images to aid retention. During this learning process, the observer attends to the key components of the model, retains the mental model as a symbol, gains the motivation to perform, and then rehearses the behavior change (Bandura, 1977). Observational symbolic learning involves a role model who is either real or fictional, and can be conveyed through media sources like books, television or online media. Reinforcement of the values observed from the role model is necessary for the behavior to be integrated into the person’s life. Both the organization and the rehearsal of the behavior occur symbolically first and then overtly. Therefore, learning can occur without an immediately explicit change in behavior. This explains how people can view media images of the thin ideal over many years, and might experience attitude changes, but not manifest overt disordered eating. Further, this theory states that individuals are more likely to adopt a modeled behavior if it results in an outcome they value. Therefore, media images which present a woman and note that she became popular after losing weight might significantly impact a woman who desires more social contacts. Individuals are more likely to adopt a modeled behavior if the model is similar to the observer, has admired value, and the behavioral change has a functional value.

Social Learning Theory attributes the etiology of eating disorders to the emphasis placed on thinness in Western society. Women often receive positive attention for being thin, or even for attempting weight loss. This attention then serves as reinforcement of the thin-ideal (Levine & Smolak, 2001). Social Learning Theory has also been used to
explain the relation between eating disorder symptomatology and media use (Stice & Shaw, 1994). In the current study, the theoretical frameworks of Social Learning Theory and Social Comparison Theory were used to explain the hypothesized association between body dissatisfaction and media images of the thin-ideal.

**Body Image Dissatisfaction and Media**

Researchers have argued exposure to unrealistically thin ideal body types in the media, or a disparity between ideal and actual body size, is linked with body image dissatisfaction in women (Corning, Krumm & Smitham, 2006; Stice, Shupak-Neuberg, Shaw & Stein, 1994; Thompson & Stice, 2001). Indeed, body dissatisfaction is often considered “normative” among women (Rodin, Silberstein, and Striegel-Moore, 1985). In a cross-sectional study, 30% of women surveyed in the 1980s reported experiencing body dissatisfaction, however 48% of women reported body dissatisfaction when surveyed in the 1990s (Cash & Henry, 1995). In a more recent study of college students, 87% of females with a body mass index (BMI) within normal limits stated they had a desire to lose weight, with an average discrepancy of seven pounds between actual and desired weight (Neighbors & Sobal, 2007). Females classified as underweight by BMI (BMI < 18.5) showed the most body satisfaction of all groups. Misperception of body size and negative body image are common among women, even those within normal range for BMI, possibly in reaction to the omnipresence of the thin body ideal. For example, 38% of normal weight women reported they thought they were overweight in the National Health and Nutrition Examination (NHANES, Chang & Christakis, 2003).

This relative increase in reported body dissatisfaction might be related to the fact that the ideal Western body shape has grown drastically thinner as measured by *Playboy*
magazine models’ and Miss America contestants’ body measurements and weight (Garner, Garfinkel, Schwartz, & Thompson, 1980; Wiseman, Gray, Mosimann, Ahrens, 1992). The same studies also examined editorial content in women’s magazines describing diets and found an increase in the proportion of articles providing information about weight loss methods. Reflecting the thin ideal, the body size of the contestants in Miss America pageants and models in Playboy magazine was 13 – 19% below their average expected weights for their age and height categories throughout the 1980s (Wiseman, Gray, Mosimann & Ahrens, 1992). In a content analysis of national health surveys, Playboy models, Playgirl models and Miss America contestants, it was found that over four decades, the average body mass index (BMI) of Miss America contestants decreased while the average BMI of 18 – 24 year old American women increased. Further, according to World Health Organization standards, approximately one-third of the Playboy models and 17% of the Miss America contestants were found to meet BMI criteria for anorexia nervosa of a BMI below 18.5 (Spitzer, Henderson, Zivian, 1999).

Yet, despite these thin-ideal societal values and the availability of information on weight-loss techniques, national obesity rates increased at statistically significant rates of 0.61% per year between 1986 and 1995, followed by even greater increase of 0.95% per year from 1997 to 2002 (Caban et al., 2005). Therefore, as images of models and actresses got thinner, the average American woman got larger, representing an even greater discrepancy between ideal and reality.

Feelings of body dissatisfaction have been shown to be a risk factor for the development of an eating disorder in children and adults (Bell & Dittmar, 2007; Stice & Shaw, 2002). Endorsement of some degree of body dissatisfaction or weight distress in
adolescence has consistently been found to be one of the best predictors for later development of eating disorders (Killen et al., 1994; Leon, Fulkerson, Perry & Early-Zaid, 1995; Koerner & Paxton, 2001). As discussed, some body dissatisfaction is common. However, the combination of high body dissatisfaction with thin-ideal internalization and other risk factors (e.g. restrictive dieting, high body weight) is significantly linked with the onset of eating disorders (Stice & Shaw, 2002).

**The nature and impact of media images.** As noted in the previous section, there is a discrepancy between the specific body types presented in the media and their representation in the actual population. For example, in the U.S. population approximately 25% of women are obese yet only 3% of women portrayed on television are obese (Greenberg et al, 2003). Compared to other characters portrayed on television, the few obese characters represented are more likely to be unemployed, elderly, non-regular members of the cast, are less likely to engage in romantic relationships and social friendships and, have fewer positive social interactions. This body size stereotyping is starting to change in children’s media, as obese characters on sitcoms targeted at children are given equitable on-screen time and portrayed with many positive characteristics, such as being smart and outspoken. Despite these changes, obese children on children’s sitcoms are more likely to be depicted as less socially popular than average weight characters (Robinson, Callister & Jankoski, 2008). This demonstrates that overweight is still equated with negative characteristics, even in what is arguably well-intentioned media, and could lead girls and women to the conclusion that their worth is at least in part determined by their body size. If they feel their body does not fit the ideal, this might drive them towards extreme dieting, restrictive eating, or eating disordered behavior.
Negative stereotyping is evident even among young children, despite the increased prevalence of overweight and obesity. In a study of preschoolers, a strong bias against overweight peers was observed in children as young as three years of age (Cramer & Steinwert, 1998). Overweight children were more likely to be perceived as mean, undesirable playmates. By age four, children are more likely to characterize overweight peers by a lack of positive characteristics as well as the presence of negative characteristics. A study of adults looking at photographs of obese adults showed that participants thought obese people were more likely to be lazy (Wang, Brownell, Wadden, 2004).

Media images of thin celebrities and models provide a source of information that women tend to use as comparisons for themselves (Groesz, Levin & Murnen, 2002). Often this comparison is made in an upward fashion, as the average woman admires the thinness and perceived success of the celebrity (Striegel-Moore, Silberstein & Rodin, 1986). Women with a large discrepancy between actual body size and body size of a favored celebrity reported more anorexic and bulimic behaviors (Shorter et al., 2008). This suggests that when an upward social comparison to a thin-ideal is made, the amount of discrepancy can be a risk factor for creating body dissatisfaction culminating in disordered eating (Tiggemann, 2009).

An individual’s level of internalization of the thin ideal is another important factor in the relation between sociocultural beauty images and a woman’s feelings about herself. The thin ideal equates overweight with a reflection of poor moral character, and thinness with beauty and goodness. The more an individual woman believes in this ideal, the more she will be consumed with maintaining a thin figure (Striegel-Moore, Silberstein &
Rodin, 1986). In contrast, lower levels of internalization of thinness are thought to buffer against the development of negative opinions about body image (Cattarin et al, 2000).

**Review of Research on Risk Factors for Body Dissatisfaction**

The following section will focus primarily on reviewing the literature within the sociocultural and psychological disciplines relevant to this proposal. Additional literature will be reviewed that has investigated potential pathways from exposure to media images to disordered eating, as mediated by psychological traits including internalization of thinness and body dissatisfaction.

**Social comparison.** Messages about ideal body size and type come from a variety of sources. Friends, family, society in general, and the media all play contributing roles. Exposure to models and celebrities displaying the thin-ideal body type has been associated with eating disorder symptoms and body dissatisfaction (Tiggemann & Pickering, 1996). In a meta-analysis of twenty-five studies investigating the relation between media and body dissatisfaction, Groesz, Levine and Murnen (2001) found that exposure to images of thin models was significantly negatively related to post-exposure measurements of body satisfaction. Researchers found no such relation among individuals exposed to average size models, overweight models, cars, or houses. This relation was the most significant for women under the age of 19. Research has shown that, in samples of adult women, negative comparison processes (e.g.: feeling bad about oneself after comparing one’s body to the image of a thin model) are associated with negative mood responses to thin-ideal images (Tiggemann, Polivy & Hargreaves, 2009).

Many studies have suggested that the risk of disordered eating is greater among individuals who engage in more social comparison. College-age females exposed to
images of a thin peer competing for a romantic date rated their own self-confidence as significantly lower than a control group exposed to either an image of an overweight peer or no image at all (Lin & Kulik, 2002). Social comparison can occur between two or more individuals, or between the individual and the image of another individual. Thoughts of lower body satisfaction, coupled with low confidence and low self-esteem increase the risk for the individual to affect a behavioral change. Women who are more likely to engage in social comparison are also more likely to develop eating disorders (Corning, Krumm & Smitham, 2006). Further, women are more likely to engage in social comparison if they exhibit a pervasive sense of uncertainty about the self, but rank preference for certainty as high. This implies that women who lack a clear sense of self and who are very uncomfortable with this lack of certainty might engage in social comparison to inform their self-concept. When a person discovers a difference between herself and the image to which she compares herself, she will often take action to become more like this figure (Corning, Krumm & Smitham, 2006). An investigation of social comparisons with adolescents identified a positive relation between the tendency to engage in social comparison and the likelihood of engaging in risky behaviors, such as drinking alcohol or shoplifting (Gibbons & Gerrard, 1997). A study of adolescents showed that those with the highest BMIs were most likely to engage in social comparison with thin images, which in turn, is thought to lead to high levels of body dissatisfaction (Halliwell & Harvey, 2006).

**Internalization of the thin ideal.** Thin-ideal internalization is defined as an individual’s cognitive belief in the socially defined ideals of attractiveness, and engagement in behavior focused on achieving that ideal (Thompson et al, 1999;
Thompson & Stice, 2001). Research has shown that while internalization of the thin-ideal alone does not directly cause eating disorder symptoms, it is a risk factor (Stice & Shaw, 1994; Thompson & Stice, 2001). Cusumano and Thompson (1997) found that awareness of the sociocultural pressures for thinness, and internalization of thin-ideal are significant predictors of negative body image and eating dysfunction. Research has also found that individuals with different eating disorders interact with and react to media in distinct ways. Some data suggest that for restrained eaters, or dieters, exposure to thin-ideal images can provoke feelings of self-enhancement (Mills, Polivy, Herman, & Tiggemann, 2002; Joshi, Herman & Polivy, 2004). Specifically, researchers have posited that a “Fantasy Effect” occurs when restricted eaters view images of the thin-ideal, as these images motivate them to continue their diet regimes. This association has only been observed in women who report that their ideal is within reach (Mills, Polivy, Herman, & Tiggemann, 2002). Another theory regarding this effect is that restrictive eaters report feelings of self-enhancement, but actually feel threatened by the images and respond with self-enhancement as a denial (Joshi, Herman & Polivy, 2004). It is important to note that these studies found that restrained eaters had lower overall scores on measures of total self-esteem, appearance self-esteem, social self-esteem, mood, and self-image than unrestrained eaters. Further, neither study specifically studied internalization of thinness.

Differences in the levels of internalization of the thin ideal also appear to impact disordered eating. Women who compare themselves to sociocultural images portrayed in the media might be more likely to internalize unrealistic norms for body weight and shape (Stormer & Thompson, 1996). Research has found that media’s effects on
women’s body image are moderated by individual differences in level of internalization of the thin ideal, and the degree of comparison to media figures (Dittmar & Howard, 2004). For example, in one study, researchers surveyed college aged women to measure the influence of the thin ideal on the self, the level of perceived influence of the thin ideal on other women, and the level of influence of the thin ideal on men. Researchers also measured how often participants read fashion magazines such as *Cosmopolitan* and *Vogue*, which feature thin models. Participants who were told that other women were experiencing a high level of internalization of the thin ideal had a higher level of their own level of thin ideal internalization than a comparison group (Park, 2005). This study also showed a strong relation among reading fashion magazines, perceived influence of the thin ideal on the self and other women, and the desire to be thin. In sum, research suggests that increased levels of social influence were associated with a stronger belief that being thin will increase social likeability. Further, the belief that being thin can increase social likeability is correlated with higher incidence of disordered eating symptoms (Meyer & Gast, 2008).

**Interaction of thin-ideal internalization and body dissatisfaction.** Individual reactions to media images are hypothesized to be linked to eating disorders through the interaction of the thin-ideal internalization and body dissatisfaction (Thompson & Stice, 2001, Stice, Shupak-Neuberg, Shaw & Stein, 1994). Research indicates that thin-ideal internalization moderates the relations among body dissatisfaction, dieting and bulimic symptomatology (Cattarin, Thompson, Thomas & Williams, 2000; Heinberg & Thompson, 1995; Stice, Spangler, & Agras, 2001). Studies have concluded that exposure to thin-ideal images can contribute to increased body dissatisfaction if the individual
already internalizes the thin-ideal, and that this combination can lead to eating disorder symptoms (Tiggemann, 1996; Tiggemann, 2003). Much of the research has measured internalization of the thin-ideal to explain the progression to body dissatisfaction and the ultimate development of eating disorder pathology (Cohen, 2006; Dittmar, Halliwell & Stirling, 2009; Engelin-Maddox, 2005; Tiggemann, 2003; Park, 2005; Warren et al, 2005).

Research indicates that there are different behavioral effects based on the type of media people choose to consume. In particular, data suggest that fashion magazine readership is more strongly linked to disordered eating outcomes than appearance-orientated television watching (Tiggemann, 2003). Psychological traits such as level of internalization of thinness, self-esteem, gender role endorsement and body dissatisfaction have all been examined as potential mediators of this relation (Corning, Krumm & Smitham, 2006; Thompson & Stice, 2001; Stice, Shupak-Neuberg, Shaw & Stein, 1994). Dittmar, Halliwell and Stirling (2009) evaluated a model with pathways starting with exposure to thin-ideal images, to weight-related self-discrepancies, and finally to body-focused negative affect. Results showed that there was a negative exposure effect only in women who had internalized the thin-ideal.

Similarly, in Stice, Schupak-Neuberg, Shaw and Stein’s study (1994), significant associations were found among media exposure, gender role endorsement and eating disorder symptomatology. Further, gender role endorsement was related to the idealization of a stereotyped version of beauty that, in turn, was linked to body dissatisfaction. The study also yielded significant results for a relation between media exposure and eating disorder symptoms. This might suggest the presence of a mediating
factor not captured in this model. Stice’s study used images exclusively from beauty and fashion magazines; thus this model should be tested again using other types of media.

Tiggemann (2003) expanded Stice’s model by testing whether BMI and self-esteem moderated the association between media exposure and body dissatisfaction. Results indicated that the relation between magazine reading and body dissatisfaction was mediated by internalization of the thin ideal, while television use was not mediated by internalization. Further, this study found that BMI and self-esteem were more strongly related to television watching compared with magazine reading.

**Self-esteem.** Self-esteem is a construct that is often examined in studies of eating disorder behaviors (Akan & Grillo, 1995; Caldwell, Brownell & Wilfley, 1998; Cusunamo & Thompson, 1997; Mayhew, 1989). Global self-esteem is viewed as positive or negative orientation toward oneself, or an overall evaluation of one's worth or value (Rosenberg, 1965). Recently in the body image literature, some researchers have begun to narrow the focus of self-esteem into a ‘contingent self-esteem’ (CSE) based on self-evaluation and verbal validation from others based on an internal or external standard (Patrick, Neighbors & Knee, 2004). Other researchers focus on an appearance state self-esteem (Joshi, Herman & Polivy, 2004). State appearance self-esteem is a construct that theoretically overlaps with body dissatisfaction (Joshi, Herman & Polivy, 2004). For example, the State Self-Esteem Scale (Heatherton & Polivy, 1998) has an appearance subscale with an item “I am dissatisfied with my weight.” Due to this conceptual overlap, many eating disorder researchers continue to measure global self-esteem to understand how the participant feels about herself overall. Low global self-esteem is
considered a risk factor for eating disordered behavior in college aged women (Mintz &
Betz, 1988).

Research has shown that measures of global self-esteem can distinguish between
known groups of women with bulimia nervosa and women who engage in subthreshold
bingeing behavior, with the former endorsing lower levels of global self-esteem and
greater acceptance of societal norms of beauty (Striegel-Moore, Silberstein & Rodin,
1985). Research has also suggested that women with low global ratings of self-esteem
are more likely to internalize sociocultural standards (Katzman & Wolchik, 1984).
Global self-esteem is therefore an important construct to consider in studies of disordered
eating, and was assessed in this study.

**Culture as a potential protective factor.** Although the focus of much of this
review has been on the negative impact cultural norms can have on women’s self-
perceptions of body image and body dissatisfaction, there is evidence that some cultural
factors can provide protection against the internalization of the thinness ideal. Ethnicity
has yielded mixed results as a moderator for internalization of the thin ideal (Bettendorf
& Fischer, 2009; Warren et al, 2005; Phan & Tylka, 2006). There is general agreement
that an individual’s level of acculturation to the standards of the United States tend to
dissipate any ethnic protective factors (Root, 2001). However, for African American
women, ethnicity can serve as a protective factor from some eating disorders but might
also be associated with increased obesity risk (White, Kohlmaier, Varnado-Sullivan,
Williamson, 2003). African American women who identify the most with the white
culture, and who have internalized the sociocultural ideas of beauty of this white culture
may be at increased risk for eating disorders (Edwards-Hewitt & Gray; 1993). Studies of
group dynamics suggest that social comparisons are typically made to similar others who can provide more accurate information for self-appraisal (Crocker & Major, 1989). Thus, perhaps African Americans are less susceptible to internalization of thinness, due to the fact that much of the media focuses on images of white women. A study of African American women viewing both television shows with African American casts, and television shows with white casts explored some of these ideas. Overall, it was found that African American women viewing television shows with primarily African American casts endorsed fewer characteristics of drive for thinness, and there was no significant association between drive for thinness and African American women’s viewing of white television shows (Schooler, Ward, Merriwether & Caruthers, 2004). This implies that any study examining media’s interaction with cultural norms of thinness, body acceptance, and eating disorders should take cultural factors into account. Although studies have investigated the relations among body dissatisfaction, eating pathology and exposure to several media modalities, research has not examined the effects of Internet exposure on similar negative outcomes, despite the increased influence of the Internet as a major form of media communication, which offers ever-changing, interactive content available at anytime of the day or night (Berthon, Pitt, & Watson, 1996; Morris & Ogan, 1996; Rafaeli & Sudweeks, 1997). The following section will review additional research addressing the association between magazine use and eating disorder attitudes and behaviors. Next, theories of media use will be outlined, to set the stage for a discussion of how the Internet might distinctly influence eating and weight related behaviors.

**Extant Studies of Media Use and Body Dissatisfaction**
Inconsistent messages about body image are prevalent in magazines marketed to women. A content analysis of *Seventeen* and *YM* magazine from 1956 – 2005 found a statistically significant increase in editorial written content focusing on exercise and combined diet and exercise plans for *Seventeen* magazine over time; however there was no significant difference in body size of models appearing in these magazines over the same time period (Luff & Gray, 2009). These results regarding adolescent magazines differ from those found in the four most popular fashion magazines for adult women examined in a content analysis of the 1959 – 1999 time period. Cover models were examined from *Cosmopolitan, Glamour, Mademoiselle* and *Vogue*. Results showed that cover models became increasingly thin on the covers of *Vogue, Cosmopolitan* and *Mademoiselle*, although this trend was not significant for *Glamour*. Further, over time, full body photographs were more frequently used and models were more likely to be wearing revealing clothing (Sypeck, Gray, Ahrens, 2004). This is a noteworthy finding as exposure to sexualized media images of women’s bodies can provoke social comparison and the internalization of thinness (Tiggemann & Pickering, 1996).

Sexualized media images are not exclusive to fashion magazines. In a study of the effects of different types of television, it was found that only music video viewership was associated with a statistically significant increase in drive for thinness (Tiggemann, 2006). Researchers attributed this finding to the fact that women are portrayed in videos typically as one-dimensional sexual objects, and that this leads to the increased endorsement of stereotypical gender roles in adolescents. Bell and Dittmar (2007) conducted a similar study of adolescent girls in which they either watched music videos or listened to music while learning a word memory task. Results supported Tiggemann’s
earlier study; adolescents exposed to music videos showed significantly higher ratings of body image dissatisfaction than the control group. A study of younger adolescents found that total media use was not related to appearance or weight concerns but that music video watching was significantly related to both (Borzekowski, Robinson & Killen, 2000). These findings highlight the importance of considering media type when assessing outcomes of media use.

**Theories of Media Use**

Media use theories, such as the Uses and Gratifications theory and the parasocial interaction model, can also inform understanding of the links between thin ideal media and disordered eating. In the following paragraphs, these theories will be reviewed in terms of structure, motivations for audience use, and interactions with the media source.

**Uses and Gratifications theory.** Uses and Gratifications communications theory describes media use as related to the audience’s activity (Blumler, 1979; Rubin, 1994). Audience activity is considered a dimensional variable, and all audience members are not equally engaged at all times (Rubin, 1994). This model argues that media users are not passive members in the information exchange, but rather dynamically interact with their chosen media type (Blumer, 1979). Audience members compensate for areas of personal weakness by using a particular media type to solve perceived problems (Katz et al., 1974). The audience expresses activity through motivations, selectivity, and interaction with media messages (Blumer, 1979). This activity satisfies a need and causes gratification for the individual. According to Levy and Windhal (1984) there are three characteristics of the active audience: selectivity before exposure, involvement during media use, and use after exposure. People are therefore active audiences by exerting
control over the media they select that will then influence their cognitions and behavior (Katz et al, 1974). Businesses have long tried to capitalize on the active quality of audience members by engaging them in advertisement or product placement. Active television audiences have been shown to be more likely to alter a previously held position about a product after seeing a commercial than passive audience watchers (Kwak & Andras, 2009).

According to the Uses and Gratifications model, media use can be categorized as either ritualized or instrumental (Rubin, 1994). Further, this model posits that motivations to use media exist across a wide spectrum and include mood management, social compensation, motivation for communication, and surveillance (Rubin, 1994; Levin et al, 1974). Ritualized use is marked by diversionary consumption of media, while instrumental use is utilitarian in nature (Rubin, 1994). Watching television to help pass the time, or watching habitually (e.g., always at the same time of day, regardless of programming) are both examples of ritualized use. In contrast, tuning into the local news to learn the weather report is an instrumental use. Ritualized use is based on using the media medium more regularly to consume time and creates an affinity between the individual and the medium itself. Instrumental use is driven by seeking specific content, and suggests intentionality, selectivity and involvement on the part of the audience. Use of media in these differing ways can lead to expression of alternative behaviors.

This theory has been applied to the study of media’s influence on eating disordered behaviors and attitudes. Some research indicates that the effects of media might vary based upon the type people choose to consume. For example, Tiggemann (2003) found that fashion magazines were more strongly associated with thin-ideal
internalization, body dissatisfaction and pathological eating than was television viewing. Tiggemann explains that because the readers of fashion magazines are typically trying to gather information about beauty, fitness and style (i.e., instrumental use), they might be more susceptible to explicit messages about the sociocultural ideal of thinness presented in these publications. In contrast, she argues, television viewers watch specific programs for non-appearance-oriented reasons (e.g., to follow an ongoing story line); this type of viewing is likely to be more ritualized (2003).

Tiggemann’s findings and her interpretation of these results (2003) are consistent with those of communication research. Specifically, communication studies have found that the most common motivations to read fashion magazines are instrumental: either to gain knowledge about what is in style to try to achieve that ideal, or to gain information about what is in style to avoid embarrassment (Hu & Wang, 2009). It is, of course, also possible that individuals who instrumentally seek out beauty magazines had a higher level of thin-ideal internalization before reviewing the magazine’s content, compared with television viewers.

Use of “new media” such as the Internet has also been explained by the Uses and Gratifications theory. Time spent online was previously thought to displace time watching television, and therefore was thought of as a viable alternative to be used in a similar, ritualistic way. However, Ferguson and Perse’s (2000) survey study of college students showed that Internet use is instrumentally motivated, with even the entertainment motive being goal-directed and mindful. Within the instrumental category, studies have examined whether individual differences are associated with motivations for Internet use. Research suggests that neuroticism is linked to Internet use for
entertainment, and extraversion was related to chat room and email use (Wolfradt & Doll, 2001). There are conflicting results regarding gender differences in Internet usage (Price, 2006; Sherman et al, 2000; Wolfradt & Doll, 2001). A limitation of this previous work is that some studies have included adolescents exclusively (Wolfradt & Doll, 2001) while others (Price, 2006; Sherman, 2000), have included a wide age range of adults. Contextual factors such as age, economic security, and life satisfaction are all associated with Internet usage; thus there are limitations in comparing studies of adolescents and adults (Papacharissi & Rubin, 2000). An individual’s ability to access the Internet might differ from his/her ability to access television and magazines (as the latter two media are more likely to be viewed at home, while the Internet is often accessed at work and school). Therefore the Internet might function differently from these other mediums (Cooper & Tang, 2009).

**Parasocial interaction.** The parasocial interaction model is an outgrowth of the Uses and Gratifications theory which proposes that audience members can develop an imaginary relationship with media figures, including feeling interpersonally connected and empathetic to them (Giles, 2002). Viewers can have a mixture of cognitive, emotional and even behavioral reactions to media figures during a parasocial interaction (Klimmt, Hartmann & Schramm, 2006). This phenomenon was evident among listeners to radio programming before the advent of television (Rubin, 2000). It has also been reported among viewers of both newscasts and soap operas (Giles, 2002; Perse & Rubin, 1989; Rubin et al, 1985, Rubin & Step, 2000). Two key components of parasocial interactions are companionship and personal identity. Personal identification is not necessary for a parasocial interaction to form; in fact this interaction can develop even
when the character is quite different from the viewer (Giles, 2002). The parasocial interaction is not perceived as a true relationship; rather, it is used as an alternative companion when there are interpersonal and social deficiencies in the individual’s life (Giles, 2002). There is also not over-identification with the object of the parasocial interaction but again the media figure is treated as a companion (Levy, 1979). Even when media figures can be viewed, social attractiveness is more strongly correlated with the formation of a parasocial link than is physical attractiveness. Social attractiveness is defined as the qualities an audience member would seek in a friend, specifically agreeableness and popularity (McCroskey & McCain, 1974). One study suggested that the most important variables for forming a parasocial interaction were social attraction, confidence in the media personality, and the importance of the relationship development; these ratings were similar to those participants gave for their “real life” friendships (Rubin & McHugh, 1987). This research illustrates how media can become a valued interactive part of individuals’ lives.

Levy’s study (1979) of older adults’ viewership of nightly news programming found a significant negative correlation between parasocial interaction and educational level. Parasocial interactions might be more likely to occur in individuals with motivations to use media to reduce negative emotions and replace them with positive emotions (Klimmt, Hartmann, Schramm, 2006). In a study of talk radio, Rubin and Step (2006) found that radio listener outcomes of frequent listening, high opinion of host, and following advice given by the host were related to the initial motivations for listening to the radio programming. For example, they found that participants with a motivation to listen to exciting entertainment were more likely to be frequent and intentional listeners,
while those with motivations to obtain information or pass the time were more likely to follow the radio host’s advice. Parasocial interaction for individuals in each type of motivation correlated with high levels of frequent and intentional listening, respecting the host as an accurate source of information, and likelihood of following host’s behavior (Rubin & Step, 2006). In a study of motivations for reality television viewing, a strong personal connection, or parasocial interaction, with the contestants was the strongest predictor of return viewership. Further, data shows that the interactive nature of reality television programs that ask viewers to vote for a winner enhances the parasocial interaction with contestants (Ebersole & Woods, 2007). Viewers who felt more of a parasocial interaction with show contestants were more likely to vote than viewers who did not feel this interaction. These results highlight the potential for the effects of parasocial interactions to extend beyond the time period of media exposure and influencing a subsequent behavioral change.

The Uses and Gratifications theory accounts for varying motivations for media consumption. According to Rubin’s guidelines, all motivations can fall into the ritualized or instrumental categories. This broad outlook is a strength of the Uses and Gratifications approach, and allows for the integration of many motivations to the same media type for satisfaction of a multitude of needs. For example, as noted above, Tiggemann (2003) found that information-seeking motives to read fashion magazines were more strongly associated with body dissatisfaction than was television viewing. Internet use was found to be most commonly motivated by instrumental information-seeking, followed by instrumental motivation for computer-mediated communication, also known as social networking (Papacharissi & Rubin, 2000). Therefore, the Internet is
instrumentally selected as a media source for specific utility, intention, and audience involvement. It is not known whether instrumental use of the Internet to view fashion images would produce similar findings to Tiggemann’s (2003) study of fashion magazines. The current study will use the Uses and Gratifications theory perspective that different motives could lead to use of the same media type (i.e., Internet) in an instrumental fashion. Further, the current study will be informed by research regarding parasocial interactions, within the frameworks of Social Comparison Theory and Social Learning Theory, as individuals strive to model themselves after media figures they admire.

**The Internet as a New Media Modality**

Internet use is on the rise. According to a Nielsen sample, 18 - 24 year olds spend 14 hours and 19 minutes on the Internet per month, while 25-34 year olds spend 31 hours and 37 minutes online per month. Areas of rapid growth include online video watching, with a 34% increase from November 2007 to November 2008. These data suggest that television watching might soon be eclipsed in popularity by Internet video watching within this age group (comSCOR, 2009). In 2009, individuals with Internet access in their homes spent just as much of their time online as reading print media, including newspapers and magazines (Pew Internet & American Life, 2009). This reflects a trend in the American economy of reduced use of print media and a shift toward electronic media. One hundred twenty newspapers in the United States were forced to close due to lack of subscriptions and bankruptcy in between January 2008 and March 2009 (CNN online article, March 13, 2009). The Internet has grown rapidly over the past 10 years. However, additional research is needed to understand how the Internet affects users’
lives. In a Gallup Poll of Internet use, 62% of respondents ages 18 – 29 reported spending more than one hour on the Internet per day (Gallup, 2009). This is notable as it represents a 12% increase from the previous year. Particularly noteworthy was the finding that 30% of 18 – 34 year olds visit an entertainment web site on a daily basis, which rivals the 32% of this age group that routinely reads entertainment newspaper sections and the 19% that read entertainment magazines. The Internet is a growing section of the communications market, and is rapidly gaining favor among adolescent and young adults for entertainment, news, and social communication.

Research suggests that the motivations of entertainment, personal involvement and personal relevance were the strongest correlates of amount of time spent on a food company’s website (Eighmey & McCord, 1998). Further, websites with a fictional personality, such as a character on a cookie manufacture website, ranked higher in users’ ratings of likelihood to return to website. Another study used a parasocial interaction scale to measure college students’ reactions when visiting websites both with and without host personalities (Hoerner, 1999). Results showed a strong correlation between presence of host personalities and participants’ likelihood of returning to the website.

Web logs (blogs) are websites written by individuals that usually have a personal viewpoint. Blogs are characterized by frequent postings and updates, with information presented in reverse chronological order, and linking to a posting area where readers can comment and interact (Wall, 2006). Blogs often feature topics presented by a strong personality, as well as a community section where readers are encouraged to interact with the blog’s author and each other. Qualitative thematic evaluations of the empathetic-interaction expressions in the comments section of a blog suggest that there can be a
parasocial interaction between blog readers and the website host (Kassing & Sanderson, 2009; Sanderson, 2008). Research has shown that individuals can use parasocial relationships as motivation to become closer to their ideal selves (Derrick, Gabriel & Tippin, 2008). Consequently, people use the information from a parasocial interaction to provide information to motivate a behavioral change.

**Hypotheses**

Three modes of media use were examined in this study: Internet, television, and magazines. Specific hypotheses were made about each of these modes. First, it was hypothesized that image-focused magazine and Internet use would produce more negative outcomes as measured by higher EDI scores than image-focused television consumption. The second hypothesis was that thin-ideal internalization would mediate the relationship between image-focused Internet use and eating pathology. Third, it was hypothesized that thin-ideal internalization would mediate the relation between image-focused magazine use and eating pathology. In contrast, the fourth hypothesis was that image-focused television use’s relation to eating pathology would not be mediated by thin-ideal internalization. Fifth, it was expected that differences in body dissatisfaction and disordered eating would emerge among Internet users based on the type of web content consumed. Specifically, it was hypothesized that individuals who consume more image-focused websites and weblogs would show higher rates of thin-ideal internalization, body dissatisfaction and associated eating pathology, compared with women who consume less image-focused Internet materials. Sixth, it was hypothesized that self-esteem would moderate the degree of body dissatisfaction associated with media use; specifically individuals with high self-esteem would manifest less body
dissatisfaction at higher levels of media use. Finally, it was hypothesized that there would be group differences in body dissatisfaction based on BMI, with individuals with higher BMIs manifesting more body dissatisfaction.

Method

Participants

Participants were 421 undergraduate females recruited from the Psychology department subject pool and undergraduate psychology classes at a large mid-Atlantic university in 2008. This study was approved by the VCU Office of Research Subjects’ Protection. Participants received course research credit for completing these questionnaires.

Participants’ mean age was 19.2 (SD = 2.81) years old. Participants reported themselves to be 51.3% White, 22.1% African-American, 8.3% Asian American, and 7.8% Multiracial; 6.7% of participants either noted membership in an “Other” ethnic group or did not report their ethnicity. With respect to year in school, 62.2% were first-year students, 20.2% were second year, 10.9% were third year, 6.4% were fourth year, and 0.2% either did not report their year in school or provided unusable data for this item. Mean BMI for the total sample was 23.03 (SD = 4.19, range 14.90 – 41.00).

Measures

Media exposure. Image-focused media content in the entertainment, health / fitness, or fashion categories were included in this study (see Appendix). Television programming, magazines and websites were examined. A research team comprised of two advanced Counseling Psychology graduate students and a supervising faculty
member made all media selection inclusion, exclusion and categorization decisions. All
three members of the team met consensus to finalize decisions regarding categorization.

**Magazines.** Based on newsagent reporting, the top ten best-selling magazines for
females ages 18 – 22 in each category (entertainment, health / fitness, and fashion) were
considered (American Collegiate Marketing, 2008). Magazines were excluded if their
primary target demographic was incongruous with study sample (e.g., *Men’s Health*) or if
they did not include images primarily of people (e.g., *Cooking Light*). Supplementary
magazines that met the above inclusion and exclusion criteria were added at the
recommendation of college-aged women whom the research team informally consulted
regarding their magazine reading habits. Additional space was given for participants to
add *Other* magazines not specifically listed. Following the methodology used in
Tiggemann’s (2003) study of media use, participants were asked whether they had read
or looked at the named magazine within the last month, and to estimate how much time
in minutes they spent with it. For the purpose of data collection, magazines were split
into monthly and weekly magazines. Monthly magazines were defined as magazines that
produce between 10 – 14 issues per year, and participants were asked to detail how many
minutes per month they read or looked at them. Fashion and fitness magazines made up
the monthly category. Twenty-one monthly magazines and nine weekly magazines were
included. Weekly magazines were defined as producing between 49 – 55 issues per year.
Participants were asked to indicate how much time in minutes per week they read or
looked at weekly magazines. Weekly magazines were in the entertainment category.
Sixteen fashion magazines, five health / fitness magazines, and seven entertainment
magazines were included on the final survey. Each category contained an Other section
in which participants could write in the name and minutes spent with additional magazines. For the purpose of this study, image-focused magazine use was be defined as the total time in the past month spent reading or looking at fashion, fitness and celebrity/entertainment magazines.

**Television.** Television viewing habits were assessed by asking participants to list the top ten most frequently watched television programs in each of the following categories: music videos, fashion/beauty, soap operas, entertainment/celebrity news, reality television, and other. Participants were able to write in the show name and number of hours per week spent viewing. Each category included a *Not Applicable* choice allowing participants to indicate that they do not view that type of programming. Examples were given in each category to focus participants on the types of responses that fit. The example for entertainment/celebrity news read “e.g., E! News, Talk Soup, Access Hollywood, Entertainment Tonight, Inside Edition, etc.” Most examples were drawn from the top rated television shows in 2008 (Nielsen Media Research, Incorporated, 2008); a small number of additional examples were generated based on the results of consultation with undergraduate students about their media habits. From the reality television and other categories, researchers created an Image category comprised of programming that had a main focus on the body or specific body parts (e.g., *The Girls Next Door*, *The Biggest Loser*, and *Workout* series). Image-focused television consumption was defined as the sum total time in the past month spent viewing music videos, fashion/beauty, soap operas, entertainment/celebrity news, and programming sorted into the Image category.
**Internet.** Internet categories considered were fashion, health/fitness, entertainment, and entertainment blogs. Image-focused Internet consumption was defined as the total time in the past month spent on fashion/beauty websites, entertainment/celebrity news websites, fitness websites, and entertainment/celebrity blogs.

Websites were considered entertainment blogs if their content focused on celebrities, the layout was made up of postings in reverse-chronological order, and included links to interactive content for readers (Wall, 2006). Five entertainment blogs were used, with three *Other* categories allowing participants to write in additional websites. The entertainment blogs used (www.tmz.com, www.x17online.com, www.perezhilton.com, www.bossip.com, and www.theybf.com) were selected for inclusion through Internet search engines and recommendations from informal consultation with undergraduate females. Participants were asked to indicate how many times per week they visited the blog, and to indicate how many hours per week they spent on the blog.

Ten online versions of the fashion magazines (previously defined) used in this study (e.g., www.glamour.com) were included in the fashion Internet category. An additional four popular fashion websites were included (e.g., www.hilary.com), identified through Internet search engines and from informal consultation with undergraduates about their Internet habits. A total of 14 websites were included in this category. Participants were asked to indicate how many times per week they visited each website, and how many hours per week they spent on each website. Three *Other* categories were available to participants to indicate fashion websites not listed on the questionnaire.
Six Internet sites were included in the health/fitness Internet website category. Four website versions of health/fitness magazines (e.g., www.fitnessmagazine.com) were included in the health/fitness category. An additional two websites were identified (e.g., www.diet.com) through Internet search and by consulting undergraduates about their Internet habits. Participants were asked to indicate how many times per week they visited each website, and how many hours per week they spent on each website. Three Other categories were available to participants to indicate fitness websites not otherwise listed on the questionnaire.

**Eating Disorder Inventory (EDI).** The Eating Disorder Inventory (EDI; Garner, Olmstead, & Polivy, 1983), a 64-item self-report inventory consisting of 8 subscales, measures the severity of symptoms of anorexia nervosa and bulimia nervosa. For the purpose of this study, the three subscales measuring disordered eating were used: body dissatisfaction (EDI-BD), drive for thinness (EDI-DFT) and bulimia (EDI-BN) scales. Participants were asked if each item applied to them, with response options from 1 (always) to 6 (never). Untransformed scores were used as recommended for nonclinical populations by Schoemaker, van Strien and van der Staak (1994) with higher scores indicating more disordered eating attitudes. The body dissatisfaction scale measures concerns about overall shape and size of specific body parts (e.g.: waist, thighs, hips or buttocks) (Garner, 1991). The bulimia scale measures episodes of binge eating and purging behaviors (Garner, 1991). The drive for thinness scale measures excessive concern with weight and dieting, and fear of weight gain (Garner, 1991).

The EDI effectively distinguishes among individuals with anorexia nervosa, bulimia nervosa or no eating disorder (Garner, 1991; Garner & Olmstead, 1984). Joiner
and Heatherton (1998) found support for the factor structure of the eight subscales of the EDI in a non-clinical sample. Estimated temporal stability (three week) for the Drive for Thinness subscale is .92, Body Dissatisfaction subscale is .97, and Bulimia subscale is .90 (Wear & Pratz, 1987). The EDI was normed on a clinical population with anorexia nervosa and a comparison group of college females; norms are available for college samples and for individuals from a variety of ethnic and racial backgrounds (Garner et al., 1983a).

**Sociocultural Attitudes Towards Appearance Scale – 3 (SATAQ-3).** Attitudes toward thinness were measured using the Sociocultural Attitudes Towards Appearance Scale - 3 (SATAQ-3; Thompson et al., 2004). The SATAQ-3 is a 30-item measure of sociocultural influences on appearance (Thompson et al., 2004). Respondents rank their level of agreement or disagreement on a five-point scale (1 = definitely disagree, 5 = definitely agree). The overall scale includes four subscales: Internalization-General, Information, Pressures, and Internalization-Athlete. Only the Internalization-General subscale was used in the current study; this subscale assesses overall internalization of societal pressures for thinness (Markland, 2008). The majority of items on the internalization subscale direct participants to consider media pressure, influence and information in television, magazine or magazine form (e.g., Item 3, “I would like my body to look like the people who are on TV.”) Internal consistency reliability for Internalization-General is .92. Two items (items number 3 and 12) were reverse coded so that higher scores reflect greater societal influence on body image, following recommendations of the instrument authors (Thompson et al., 2004). Convergent validity evidence includes the high correlations reported between each of the SATAQ-3 subscales.
and disordered eating measurements. Temporal stability could not be assessed, as there are no test-retest reliability data currently available (Thompson, et al., 2004).

**Rosenberg Self-Esteem Scale (RSES).** Global self-esteem was measured using the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965). The RSES is comprised of 10 items that measure overall self-esteem and feelings of self-worth. It is a measure of global self-esteem (cognitive and affective components), general self-worth, and attitudes of positive self-esteem. Internal consistency (alpha) for the RSES has been reported as .88 in female college populations (Fleming & Courtney, 1984). Estimated temporal stability is reported as .82 over a 1-week interval (Fleming & Courtney, 1984). Construct validity, factor structure, and scaling assumptions have been supported across diverse populations (Schmitt & Allik, 2005; Sinclair et al., 2010).

Items on the RSES include statements such as “[o]n the whole, I am satisfied with myself” and “I feel that I’m a person of worth, at least on an equal plane with others.” Responses are rated on 4-point scale from 1 (*strongly disagree*) to 4 (*strongly agree*). Ratings are summed to achieve a total score between 0 – 30. Items 2, 5, 6, 8, 9 on the RSES were reverse coded (Rosenberg, 1979). Higher scores on the RSES indicate greater self-esteem. The RSES has been shown to be sensitive enough to detect shifts in overall self-evaluation in an experimental study where participants responded to questionnaires before and after exposure to a reality television show based on enhancing personal appearance through plastic surgery (Mazzeo, Trace, Mitchell & Gow, 2007).

**Procedure**

Participants learned about the study via the Psychology Department’s secure online research site and received course credit (when applicable) for their participation. All data
collection was completed online through secure, internal, systems and participants were identified via a code number, instead of names, to maintain anonymity. The collected data was maintained on a secure server behind a firewall. Participants were told that the purpose of the study was to examine the associations between media use and health behaviors. Following completion of the measures, participants were given an information sheet which explained the study’s objectives and included information about campus resources that could assist them with any concerns they might have regarding their emotions, mood, or eating behaviors.

First, descriptive analyses, including media use frequencies and durations for all media types, were conducted. Many researchers and popular media outlets have posited that college students are increasingly reliant on Internet and electronic devices (e.g., Yuen & Lavin, 2004), however, few have investigated which websites are most used, or how much time in general undergraduates actually spent online. Therefore, descriptive data detailing frequency, duration and type of Internet content consumed in this population will contribute to the scientific literature. Further, as media habits change over time, descriptive data regarding magazine use and television habits will prove useful to future studies of media habits in college-age females.

To derive descriptive data, time in hours was summed in each category of media. These values were then converted to percentages of time to standardize units of measurement and facilitate comparisons across categories. Prior to conducting any statistical tests, assumptions of normality were evaluated for all variables. PASW Statistics Version 18 was used for statistical tests.
Hypothesis one stated that image-focused magazine and Internet use would be more strongly associated with negative outcomes (as indicated by higher EDI scores) than image-focused television consumption. Three correlations were used to test this hypothesis. Image-focused magazine total use time, image-focused Internet total use time, and image-focused television total use time would be correlated separately with EDI total scores.

The second hypothesis is that thin-ideal internalization would mediate the relationship between image-focused Internet use and eating pathology. To test this potential mediation, the four conditions outlined by Baron and Kenny to identify a mediator (1986) were evaluated. A series of three multiple regressions tested the four conditions regarding mediation (Holmbeck, 1997).

The third hypothesis stated that thin-ideal internalization would mediate the relation between image-focused magazine use and eating pathology. A series of multiple regressions testing for mediation between image-focused magazine use, thin-ideal internalization and body dissatisfaction were conducted to evaluate this hypothesis following the Baron and Kenny recommendations (1986).

The fourth hypothesis is that image-focused television use’s relationship to eating pathology was not mediated by thin-ideal internalization. This was evaluated using the series of multiple regressions previously described (Baron and Kenny, 1986). It was predicted that image-focused television use was more highly associated with body dissatisfaction in the third regression than the second regression, indicating that thin-ideal internalization was not a mediator.
Of note, as much of psychology measures phenomena with multiple causes, a goal of reducing rather than eliminating relationship between the predictors and the outcome variable of body dissatisfaction in each series of regressions is realistic (Baron & Kenny, 1986; Holmbeck, 1997).

Hypothesis five proposed that differences in body dissatisfaction and disordered eating would emerge among Internet users based on the type of web content consumed. Specifically, it was anticipated that individuals who spend time on image-focused websites and weblogs would manifest higher rates of thin-ideal internalization, body dissatisfaction and associated eating pathology compared to individuals who do not consume such content. This hypothesis was tested via a multiple regression in which the dependent variable was body dissatisfaction, and the independent variables was total time spent on fashion websites, total time spent on entertainment/celebrity websites, total time spent on entertainment/celebrity blogs, and total time on fitness websites.

Sixth, it was hypothesized that self-esteem would moderate the degree of body dissatisfaction associated with different types of media use; specifically individuals with high self-esteem would manifest less body dissatisfaction at higher levels of media use. To test for this moderating effect, three hierarchical regressions were performed as recommended by Baron and Kenny (1986). Each regression tested the effect of self-esteem on the relation between one category of image-focused media use and body dissatisfaction. Three regressions were performed for image-focused Internet use, image-focused magazine use, and image-focused Internet use.

The final hypothesis was that there would be group differences in body dissatisfaction based on BMI, with individuals with higher BMIs manifesting more body dissatisfaction.
dissatisfaction as a function of media use. A one-way analysis of variance (ANOVA) was conducted to explore the impact of BMI on body dissatisfaction.

Results

Data Analyses

Researchers categorized all media information written in the other categories based on the categorization system described in the measures section (pages 28 – 32). All media use data were standardized to reflect average hours per month, to facilitate comparisons across categories (week times 4.2). As media variables asked for reported amounts of time spent with each media content, fields left blank by participants were calculated as zero. Missing data was excluded pairwise throughout analyses, unless otherwise noted. Univariate outliers were identified through examination of z-scores with the criteria that 1% were expected to have absolute values greater than 2.58, and none to have absolute values greater than 3.29. For the multiple regressions, multivariate outliers were identified through production of Mahalanobis distances with an alpha level of .001. Any multivariate outlier was excluded from analysis.

Descriptive Statistics

One goal of this study was to provide descriptive details about the type of media young women consume, and the amount of time spent in these domains. Results indicated that the Internet was the most commonly used media type, and was used 3.93 times as much as magazines by this sample. Table 1 reviews the descriptive analyses of all of the psychological measures. Table 2 reviews the time spent on each media medium.
Table 1.

*Summary of Descriptive Analyses of Psychological Measurements*

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<th>M (SD)</th>
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<tr>
<td>EDI</td>
<td>421</td>
<td>68.44 (20.74)</td>
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<tr>
<td>EDI-BD</td>
<td>421</td>
<td>30.01 (8.50)</td>
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<td>SATAQ-3</td>
<td>421</td>
<td>87.23 (22.84)</td>
</tr>
<tr>
<td>RSES</td>
<td>421</td>
<td>23.27 (1.85)</td>
</tr>
</tbody>
</table>
Table 2.

*Amount and Type of Media Used by College Females*

<table>
<thead>
<tr>
<th>Media Type</th>
<th>n</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image-focused magazines</td>
<td>421</td>
<td>2.33 (6.43)</td>
</tr>
<tr>
<td>Image-focused television</td>
<td>417</td>
<td>4.32 (8.76)</td>
</tr>
<tr>
<td>Image-focused Internet</td>
<td>420</td>
<td>9.43 (18.46)</td>
</tr>
</tbody>
</table>

*Note.* Mean hours per month.
Table 3 presents the amount of time participants spent on each category of Internet website measured in this study. Internet content changes rapidly; unique visits to each website could result in viewing different images. Therefore, the amount of unique visits per month to each category of website is also provided in Table 3. All ranges and medians listed are for participants who visited the website listed at least once.

The Internet category most frequently visited was the Other category; the top three websites visited in this category were part of the home university’s website (30.0% participants, range 0.50 – 420 hours per month, median 16.80 hours per month), and the online social networking websites Facebook (65.1% of participants, range 2.1 – 348.6 hours per month, median 21 hours per month) and Myspace (28.3% participants, range 2.1 – 252 hours per week, median 12.6 hours per month). The three celebrity blogs participants spent the most time in order, were: www.perezhilton.com (11.5% participants ranged 4.2 – 50.4 hours per month), tmz.com (4.5% participants ranged 4.2 – 63 hours per month), as well as www.theybf.com (1% of participants ranged 4.2 – 12.6 hours per month), described as the Internet’s “insight into the world of Black Hollywood and what is fabulous in Black America” (“About TheYBF”, n.d.). The three fashion websites where viewers spent the most time, in order, were: www.style.com (5.5% of participants spend between 4.2 – 21 hours per month), www.cosmopolitan.com (5.0% participants ranged 4.2 – 8.4 hours per month), and www.instyle.com (4.8% participants ranged 4.2 – 8 hours per month). In corporate entertainment websites, the websites participants spent the most time were: www.mtv.com (17.8% participants ranged 4.2 – 58.8 hours per month), www.bet.com (7.4% of participants ranged 4.2 – 71.4 hours per month) and www.people.com (4.0% participants ranged 4.2 – 16.8 hours per month).
There were only two fitness websites that more than 1% of the sample reported visiting: www.diet.com (1.2% participants, ranged 4.2 – 8.4 hours per month) and www.fitnessmagazine.com (1.2% participants, ranged 4.2 – 25.2 hours per month). Overall, the fitness websites category had the lowest frequency of visits and duration of time spent on the websites (see Table 3).

In addition to the information on categories of television presented in Table 4, participants also reported watching television on their personal computers ($M = 2.90, SD = 7.78$). As this result is a hybrid between television use and Internet use, television programs which participants described as being watched on personal computers was not included in analyses. The categories of magazine use are presented in Table 5.
Table 3.

*Internet Use by Category (Number of visits and hours per month)*

<table>
<thead>
<tr>
<th>Category</th>
<th>Visits</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entertainment</td>
<td>5.98</td>
<td>3.33</td>
</tr>
<tr>
<td>Blog</td>
<td>5.57</td>
<td>1.65</td>
</tr>
<tr>
<td>Fashion</td>
<td>4.28</td>
<td>2.67</td>
</tr>
<tr>
<td>Fitness</td>
<td>0.58</td>
<td>0.39</td>
</tr>
<tr>
<td>Other</td>
<td>112.87</td>
<td>50.25</td>
</tr>
</tbody>
</table>

*(SD) (15.74) (7.28) (26.24) (4.65) (12.31) (6.61) (4.65) (1.53) (47.23) (21.76)*
Table 4.

*Television Used by Category (Hours per month)*

<table>
<thead>
<tr>
<th></th>
<th>Music Videos</th>
<th>Fashion and Beauty</th>
<th>Soap Operas</th>
<th>Entertainment News</th>
<th>Dating</th>
<th>Streamed on PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD)</td>
<td>10.16 (17.12)</td>
<td>12.70 (17.68)</td>
<td>2.92 (11.00)</td>
<td>6.56 (13.58)</td>
<td>1.22 (3.42)</td>
<td>2.90 (7.78)</td>
</tr>
</tbody>
</table>
Table 5.

Magazines Used by Category (Hours per month)

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entertainment</td>
<td>1.97 (4.42)</td>
</tr>
<tr>
<td>Fashion &amp; Beauty</td>
<td>2.33 (6.43)</td>
</tr>
<tr>
<td>Fitness</td>
<td>0.81 (4.58)</td>
</tr>
</tbody>
</table>
Tests of Statistical Significance

Hypothesis 1.

Hypothesis one stated that image-focused Internet use and image-focused magazine use would be associated with more negative outcomes than image-focused television consumption. Hypothesis one also stated that image-focused Internet use and image-focused magazine use would have similar associations with body dissatisfaction. Three Pearson-product moment correlations were conducted to examine this hypothesis.

The Pearson-product moment correlation should only be conducted if the data is distributed normally. The eating disorder pathology variable met the assumptions of normality with no univariate outliers (kurtosis = -.66, SE = .24, skewness = .23, SE = .12). Body dissatisfaction met the assumptions of normality with no univariate outliers (kurtosis = -.57, SE = .24, skewness = .40, SE = .12). However, assumption checking revealed that the media use variables (Internet, television, magazine use) were non-normal. Specifically, image-focused Internet use did not meet the assumptions of normality (kurtosis = 4.75, SE = .24; skewness = 2.27, SE = .12). Three outliers were identified by examining the standardized values and winsorized. As recommended by Field (2009), a constant (1) was added to each value so the smallest value was at least one, and a square root transformation of image-focused Internet use resulted in a variable that met the assumptions of normality (kurtosis = .21, SE = .24; skewness = 1.10, SE = .12). Similarly, image-focused magazine use did not meet the assumptions of normality (kurtosis = 22.91, SE = .24; skewness = 4.22, SE = .12). Four outliers were identified by examining the standardized values and assigned the next highest value. As recommended by Field (2009), a constant (1) was added to each value so the smallest value was at least
one, and a log ten transformation of Image-focused magazine use resulted in a variable that met the assumptions of normality (kurtosis = -.01, $SE = .34$; skewness = -.20, $SE = .17$). Finally, image-focused television use did not meet the assumptions of normality (kurtosis = 20.87, $SE = .24$; skewness = 3.93, $SE = .12$). Eight outliers were identified by examining the standardized values and assigned the next highest value. As recommended by Field (2009), a constant (1) was added to each value so the smallest value was at least one and a log ten transformation of Image-focused television produced a variable that met the assumptions of normality (kurtosis = -.02, $SE = .30$; skewness = -.35, $SE = .15$).

The results of the correlations between media type and eating disorder pathology are presented in Table 6. Image-focused magazine use was not significantly associated with eating pathology or body dissatisfaction. Image-focused television and Internet were both significantly associated with eating pathology and body dissatisfaction. Image-focused Internet use was the media type most associated with eating pathology, and image-focused television use was most associated with body dissatisfaction. Therefore, hypothesis one was not supported.
Table 6.

*Correlations between Media Use, Eating Pathology, and Body Dissatisfaction*

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Eating Pathology</th>
<th>Body Dissatisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image-focused magazines</td>
<td>$r (420) = .10 (p = .14)$</td>
<td>$r = .07 (p = .13)$</td>
</tr>
<tr>
<td>Image-focused television</td>
<td>$r (420) = .13 (p = .03)$</td>
<td>$r = .13 (p = .006)$</td>
</tr>
<tr>
<td>Image-focused Internet</td>
<td>$r (420) = .15 (p = .003)$</td>
<td>$r = .12 (p = .01)$</td>
</tr>
</tbody>
</table>

*Note.* Significance values given for 2-tailed tests. Eating Disorder Inventory and Eating Disorder Inventory – Body Dissatisfaction subscale.
Hypothesis 2.

The second hypothesis stated that thin-ideal internalization would mediate the relation between image-focused Internet use and body dissatisfaction. Following the Baron and Kenny (1986) mediation model, three regressions were performed. First, the relation between image-focused Internet and thin-ideal internalization was examined. Second, the relation between image-focused Internet use and body dissatisfaction was examined. Finally, image-focused Internet use and thin-ideal internalization were used as independent variables in a hierarchical regression equation in which body dissatisfaction served as the outcome variable. Following Baron and Kenny’s (1986) recommendation, this was a simultaneous entry regression, so that the effect of thin-ideal internalization on body dissatisfaction was examined after image-focused Internet use is controlled, and the effect of image-focused Internet on body dissatisfaction was examined after thin-ideal internalization is controlled.

Assumptions of normality, linearity and homoscedacity for multiple regressions were met by examining skewness, kurtosis and the residual scatterplot. First, image-focused Internet use was significantly associated with body dissatisfaction, $F(1, 416) = 8.30, p = .004, R^2 = .02, \beta = .14, t (414) = 2.88, p = .004$. Second, a significant relation between image-focused Internet use was significantly associated with internalization of the thin ideal, $F(1, 414) = 12.96, p < .001, R^2 = .03, \beta = .17, t (414) = 3.60, p < .001$. Finally, a multiple regression showed that image-focused Internet use and thin-ideal internalization together were significantly associated with body dissatisfaction $F(2, 413) = 107.25, p < .001; R^2 = .34$. Image-focused Internet use was not a significant independent predictor of body dissatisfaction in this model, $\beta = .04, t (413) = .97, p = .33$. 
Examination of the Mahalanobis distance showed no multivariate outliers. Using the Sobel test, it was found that the magnitude of the relation between image-focused Internet use and body dissatisfaction decreased slightly when the thin-ideal internalization pathway was controlled ($Z = 3.49$, $p < .001$). According to Baron and Kenny (1986), each regression will show a significant relation between predictor and outcome variable if there is a meditational variable, and image-focused Internet use would be less highly associated with body dissatisfaction in the third regression than in the second regression if the thin-ideal was mediating. In conclusion, thin-ideal internalization fully mediates the relation between image-focused Internet use and body dissatisfaction, and hypothesis two was retained.

**Hypothesis 3.**

The third hypothesis stated that thin-ideal internalization would mediate the relation between image-focused magazine use and body dissatisfaction. Again, following the Baron and Kenny (1986) recommendations for testing for mediation, the significance of the association between image-focused magazine use and thin-ideal internalization was examined in the first regression. Second, the relation between image-focused magazine use and body dissatisfaction was examined. If there is a mediating relationship, these first two regressions would yield significant results (Holmbeck, 1997). Finally, image-focused magazine use and thin-ideal internalization were used as predictors for the outcome variable of body dissatisfaction.

Assumptions of normality, linearity and homoscedascity for multiple regression were met by examining skewness, kurtosis and the residual scatterplot. Examination of the Mahalanobis distances showed no multivariate outliers. First, image-focused
magazine use was a significant predictor of body dissatisfaction, $F(1, 417) = 8.07, p = .005, R^2 = .02, \beta = .14, t(415) = 2.84, p = .005$. Second, showed that image-focused magazine use was a significant predictor of internalization of the thin ideal, $F(1, 415) = 29.53, p < .001, R^2 = .07, \beta = .26, t(415) = 5.43, p < .001$. Finally, a multiple regression model showed that image-focused magazine use and thin-ideal internalization together were significantly associated with body dissatisfaction $F(2, 413) = 106.61, p < .001; R^2 = .34$. Image-focused magazine use was not a significant independent predictor of body dissatisfaction, $\beta = -.01, t(413) = -.33, p = .74$. Using Sobel’s test, it was found that the magnitude of the relation between image-focused magazine use and body dissatisfaction decreased significantly when thin-ideal internalization was included ($Z = 5.09, p < .001$). As image-focused magazine use was better able to predict body dissatisfaction when thin-ideal internalization was not controlled, full mediation was supported. In conclusion, thin-ideal internalization mediates the relation between image-focused magazine use and body dissatisfaction, and hypothesis three is retained.

**Hypothesis 4.**

The fourth hypothesis stated that thin-ideal internalization would not mediate the relationship between image-focused television use and body dissatisfaction. Following the Baron and Kenny (1986) mediation model, three regressions were performed. Assumptions of normality, linearity and homoscedascity for multiple regression were met by examining skewness, kurtosis and the residual scatterplot. Examination of the Mahalanobis distance showed no multivariate outliers. The significance of the association between image-focused television use and thin-ideal internalization was examined in the first regression. Second, the significance of the association between
image-focused television use and body dissatisfaction was examined. Finally, image-focused television use and thin-ideal internalization were used as predictors for the outcome variable of body dissatisfaction in the last regression.

The first regression showed that image-focused television use was significantly associated with body dissatisfaction, $F(1, 417) = 11.59$, $p = .001$, $R^2 = .03$, $\beta = .16$, $t(417) = 3.40$, $p = .001$. Second, image-focused television use was significantly associated with internalization of the thin ideal, $F(1, 415) = 34.49$, $p < .001$, $R^2 = .08$, $\beta = .28$, $t(415) = 5.87$, $p < .001$. Finally, a multiple regression model showed that image-focused television use and thin-ideal internalization together were significant predictors of body dissatisfaction $F(2, 413) = 106.54$, $p < .001$; $R^2 = .34$. Image-focused magazine use was not a significantly associated with body dissatisfaction, $\beta = .003$, $t(413) = .07$, $p = .94$.

Using the Sobel test, it was found that the magnitude of the relation between image-focused television use and body dissatisfaction decreased significantly when thin-ideal internalization was included ($Z = 5.39$, $p < .001$). Since image-focused television use was more strongly associated with body dissatisfaction when thin-ideal internalization was not controlled, a meditational relation is supported; thin-ideal internalization fully mediates the relationship between image-focused television use and body dissatisfaction, so hypothesis four was not supported.

**Hypothesis 5.**

Hypothesis five proposed that differences in body dissatisfaction would emerge among Internet users based on the type of web content consumed. To test this, a standard multiple regression was used. The first part of this hypothesis would be supported if the different categories of Internet are differentially associated with body dissatisfaction.
The second part of this hypothesis would be supported if total time on entertainment / celebrity blogs was the independent variable most strongly linked to body dissatisfaction, in the direction that more time spent on these types of blogs was associated with greater body dissatisfaction.

Assumptions of linearity, normality and homoscedascity were met by examining skewness, kurtosis and the residual scatterplot. The predictor variables were the time spent on the four different types of Internet categories: fashion websites, entertainment/celebrity websites, entertainment/celebrity blogs and fitness websites, and other websites. Only the Other category was normally distributed. A constant (1) was added to each value to perform log 10 transformations on the fashion website, entertainment/celebrity blog variable and fitness website variables. Standardized values were examined and three univariate outliers were found in the fashion website variable, seven univariate outliers in the entertainment/blog website category, and one univariate outlier found in the fitness website category. All univariate outliers were replaced with the next highest value. A constant (1) was added to each value to perform a square root transformation on the entertainment/celebrity website category and four univariate outliers were found by examining standardized values and replaced with the next highest value. One univariate outlier was identified in the Other category and replaced with the next highest value. The correlation table was examined and the highest correlation between independent variables was 0.25 between fitness website and fashion website viewing; therefore, the assumption of minimal multicollinearity was met. Examination of the Mahalanobis distance showed no multivariate outliers.
Categories of Internet use did not significantly predict body dissatisfaction, $F(5, 415) = 1.21, p = .30, R^2 = .01$. None of the types of Internet use were significantly related to body dissatisfaction ($p < .001$) (see Table 7). The Other category ($\beta = -.02, t (415) = -.36, p = .72$) and Fitness category ($\beta = -.04, t (415) = -.71, p = .48$) both influenced body dissatisfaction in the unexpected direction; as consumption of these Internet categories was associated with lower body dissatisfaction. However, neither of these relationships were statistically significant and had very small effect sizes. Time spent on entertainment websites was also not significantly associated with body
Table 7.

*Internet Categories as Predictors of Body Dissatisfaction*

<table>
<thead>
<tr>
<th>Internet Website Category</th>
<th>$\beta$</th>
<th>$t$ (415)</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entertainment/Celebrity Blog</td>
<td>0.02</td>
<td>0.39</td>
<td>0.70</td>
</tr>
<tr>
<td>Entertainment/Celebrity Website</td>
<td>0.1</td>
<td>2.08</td>
<td><strong>0.04</strong></td>
</tr>
<tr>
<td>Fitness</td>
<td>-0.04</td>
<td>-0.71</td>
<td>0.48</td>
</tr>
<tr>
<td>Fashion</td>
<td>0.03</td>
<td>0.59</td>
<td>0.56</td>
</tr>
<tr>
<td>Other</td>
<td>-0.02</td>
<td>-0.36</td>
<td>0.72</td>
</tr>
</tbody>
</table>

*Note.* Bolded results are significant at the $p < .05$ level.
Hypothesis five stated that there would be differences in the relations between types of Internet use and body dissatisfaction. This part of hypothesis five was retained. Hypothesis five further stated that entertainment blog websites would emerge as the category most associated with higher levels of body dissatisfaction. The second part of the hypothesis was not supported.

**Hypothesis 6.**

Hypothesis six stated that self-esteem would moderate the degree of body dissatisfaction associated with different types of media use; specifically individuals with high self-esteem would manifest less body dissatisfaction at higher levels of media use. Three hierarchical multiple regressions were conducted to test moderation, as recommended by Baron and Kenny (1986). One hierarchical regression was performed in each media category: Internet, magazine, and television use. In each regression equation, first the main effects variable and the moderator term were centered by creating deviation scores to reduce multicollinearity effects (Aiken & West, 1991). Then an interaction term was created from these centered variables. In each hierarchical multiple regression, amount of time spent on image-focused media type was entered in the first step, self-esteem was entered in the second step, and the interaction (e.g., product) terms were entered in the third step, predicting level of body dissatisfaction. Model checking showed that the self-esteem variable was normal and linearly distributed with no univariate outliers.

As shown in Table 8, results revealed significant main effects for the impact of every type of media use on body dissatisfaction: Internet use model, $F(2, 415) = 11.20, p < .001, R^2 = .05$, television use model, $F(2, 416) = 13.01, p < .001, R^2 = .06$, and
magazine use, $F(2, 416) = 10.37, p < .001$. Amount of time spent on the Internet interacted with self-esteem levels in the full model, $F(3, 414) = 8.55, p < .001, R^2 = .06$; $\Delta F(1, 416) = 2.65, p < .001, \Delta R^2 = .07$, such that women who reported both high Internet use and low self esteem reported more body dissatisfaction than did women who reported high Internet use and high self-esteem (see Figure 1; this figure represents the relationship between amount of Internet use, measured continuously along the x-axis, and level of body dissatisfaction, measured continuously along the y-axis, plotted for different levels of self-esteem; Aiken & West, 1991). High levels of self-esteem buffers the relationship between image-focused Internet use and body dissatisfaction. Hypothesis six was retained.
Table 8.

**Self-Esteem as a Moderator of Media Use in Predicting Body Dissatisfaction Severity**

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internet</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time on Internet</td>
<td>0.07</td>
<td>0.03</td>
<td>0.13*</td>
</tr>
<tr>
<td>Self-Esteem Level</td>
<td>0.89</td>
<td>0.22</td>
<td>0.19**</td>
</tr>
<tr>
<td>Time on Internet x Self-Esteem Level</td>
<td>-0.03</td>
<td>0.01</td>
<td>-0.09†</td>
</tr>
<tr>
<td><strong>Television</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Television Time</td>
<td>0.15</td>
<td>0.05</td>
<td>0.14**</td>
</tr>
<tr>
<td>Self-Esteem Level</td>
<td>0.93</td>
<td>0.22</td>
<td>0.20***</td>
</tr>
<tr>
<td>Television Time x Self-Esteem Level</td>
<td>-0.01</td>
<td>0.03</td>
<td>-0.02</td>
</tr>
<tr>
<td><strong>Magazines</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magazine Time</td>
<td>0.17</td>
<td>0.09</td>
<td>0.09</td>
</tr>
<tr>
<td>Self-Esteem Level</td>
<td>0.95</td>
<td>0.22</td>
<td>0.21***</td>
</tr>
<tr>
<td>Magazine Time x Self-Esteem Level</td>
<td>0.02</td>
<td>0.06</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Note. † \( p = .08 \), * \( p < .05 \), ** \( p < .01 \), *** \( p < .001 \).
Figure 1. Relation between Amount of Internet Use and Body Dissatisfaction for Different Levels of Self-Esteem.
Hypothesis 7.

Hypothesis seven was that there would be group differences in body dissatisfaction based on BMI, with individuals with higher BMIs manifesting more body dissatisfaction. In order to test the group differences, BMI of participants were divided into four groups reflecting World Health Organization Classification: underweight (BMI < 18.5), normal (BMI 18.5 – 25), overweight (BMI 25 – 30), and obese (BMI >30). BMI categories were dummy coded to allow a planned group differences contrast comparing the impact of BMI levels on body dissatisfaction.

Table 9 details the frequencies of each BMI category in the current sample, reflecting World Health Organization Classification: underweight (BMI < 18.5), normal (BMI 18.5 – 25), overweight (BMI 25 – 30), and obese (BMI >30). A one-way between groups analysis of variance (ANOVA) was conducted to explore the impact of BMI on body dissatisfaction. BMI categories were dummy coded allowing a planned group differences contrast to examine the influence of BMI on body dissatisfaction.
Table 9.

**Body Mass Index (BMI) Demographics for Sample**

<table>
<thead>
<tr>
<th>Category</th>
<th>Participants</th>
<th>Percentage of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight (BMI &lt; 18.5)</td>
<td>25</td>
<td>5.9</td>
</tr>
<tr>
<td>Normal Weight (BMI 18.5 - 25)</td>
<td>264</td>
<td>62.7</td>
</tr>
<tr>
<td>Overweight (BMI 25 - 30)</td>
<td>66</td>
<td>15.7</td>
</tr>
<tr>
<td>Obese (BMI &gt; 30)</td>
<td>24</td>
<td>5.7</td>
</tr>
<tr>
<td>Did not report</td>
<td>42</td>
<td>10</td>
</tr>
</tbody>
</table>

*Note. Mean BMI = 23.03, SD = 4.19*
Levene’s statistic was not significant; therefore it can be assumed that there are equal variances in all groups. There was a significant difference in body dissatisfaction across the BMI groups, $F(4, 373) = 18.40, p < .001, \eta^2 = .10$. The underweight group ($M = 25.73, SD = 9.10$) had the lowest body dissatisfaction and was significantly different than the remaining three groups $t(373) = -4.17, p < .001$. The normal weight group was also significantly different than the remaining three groups $t(373) = -3.94, p < .001$. A planned contrast between the normal weight group ($M = 28.30, SD = 8.04$) and the overweight group ($M = 33.71, SD = 7.88$) indicated there were significant differences in the weighted means $t(373) = -2.60, p = .01$. The overweight group was significantly different from the remaining three groups $t(373) = 2.70, p = .006$. The obese group was significantly different from the remaining three groups $t(373) = 5.02, p < .001$. The overweight group and obese group both had weighted means in the positive direction indicating that these two groups had higher body dissatisfaction than the normal and underweight groups. Hypothesis seven was retained.

**Discussion**

A broad aim of this study was to provide information about the amount and types of media that college females consume. The first specific aim was to examine the associations among various types of media use (Internet, television, or magazines) and eating disorder symptomatology. The second aim was to investigate whether the relation between media use (Internet, television and magazines) and body dissatisfaction was mediated by thin-ideal internalization. The third aim was to examine whether users of different types of web content would vary in their levels of body dissatisfaction. The
fourth aim was to assess whether self-esteem moderated the relation between the three types of media use and body dissatisfaction. The fifth aim was to explore potential relations between BMI status and body dissatisfaction.

**Descriptive Results**

Current findings provide new information about the types of media college women use, as well as the frequency with which they seek out these media, and the amount of time they spend interacting with them. The Internet was used almost four times (3.93) as much as magazines, and more than twice as much as television. It is notable that consistent with some previous findings (Pew Research Center, 2011), women in this sample reported using the Internet more than any other media source. Results of this study are consistent with reports that state that while college students watch an average of 2.5 hours of television per day, they spend an average of 5 hours per day on a computer (Alloy Marketing Group, 2009). However, it should be noted that investigations including a broader sample of individuals in this age group (i.e., not college students exclusively), have found that television is the second most used media in this age group, and is used at higher rates than Internet among young adults with lower incomes and education levels (Pew Research Center, 2011). The sample in the current study was relatively homogeneous with respect to education level and accessibility of technology; this may account for some of the findings supporting high Internet use rates.

How young adults use the Internet might also have influenced the results of the current study. Recent reports have listed that over 70% of consumers ages 18 - 33 use the Internet to watch videos (Zickuhr, 2010). Therefore, there may be less of a distinction
between television and Internet for this age group, and young adults may be using their computers to meet most of their media interests.

**Media Use and Body Dissatisfaction**

Consistent with previous literature (Tiggemann, 2003), current findings suggest that various media modalities differentially impact body dissatisfaction. While other studies (Levine & Murnen, 2009) have found the strongest association between magazine use and body dissatisfaction, findings from the current investigation suggest that television and Internet use are more strongly related to feelings of body dissatisfaction. While both Internet and television were associated with feelings of body dissatisfaction, Internet use was the media modality most associated with eating disorder symptoms. According to Social Comparison Theory, the more that women view highly valued images and find themselves dissimilar, the more this could trigger behavior to become more similar to their valued upward comparison figures. Therefore, women who are viewing more images online may be more vulnerable to this comparison due to the seemingly exhaustive amount of thin-ideal images available.

It should be noted that magazines were used infrequently in the sample in the current study, compared with television and Internet use. Other research in this area has more narrowly defined thin-ideal television use as only soap opera or music videos (Tiggemann, 2003). By contrast, the expanded interpretation of thin ideal television used in this study might have captured a broader range of images that contribute to feelings of body dissatisfaction that were previously unmeasured. Studies have indicated that time spent looking at sexualized images can provoke internalization of the thin ideal (Tiggemann & Pickering, 1996). This current study included a wider range of exposures
to body images and therefore may have included more sexualized images than in previous studies. Thus, this study may provide more generalizable results regarding television’s impact on body dissatisfaction.

Consistent with hypotheses and previous literature (Tiggemann & Pickering, 1996; Tiggemann, 2002), internalization of the thin-ideal mediated the association between both Internet and magazine consumption and body dissatisfaction. Contrary to this study’s hypotheses, the association between television and body dissatisfaction was also mediated by internalization of the thin ideal. These results contribute to the body of research supporting Stice’s (1994) original meditational model. Internet use was examined specifically in this study because this form of media offers relatively unlimited quantity and range of images that participants can seek out 24 hours per day, and little prior research has examined the effects of Internet use on body dissatisfaction. However, since the 1990s when most models of media use and eating disorders were developed, television options have become increasingly varied and consumers have more control over their viewing. In a 2010 survey, 62% of adults reported using time-shift technology to view their favorite television programming (Nielsen Media Research data, n.d.). Time-shift technology includes digitally recording television shows to watch them later, watching television streaming on the Internet, downloading television shows to watch on either personal computers or personal mobile devices, and ordering television shows to watch on demand via cable subscriptions. The consumer becomes more intentional in this type of television interaction and purposefully selects the targeted shows. If television viewing is becoming more intentional, then it is reasonable, following the Uses and Gratifications theory, to speculate that the psychological mechanisms governing
television and Internet selection and consumption are becoming more similar. Research has shown that consumers who use time-shift technology to view television are more likely to be using the television to satisfy instrumental motives, rather than ritual motives (Ferguson & Perse, 2004). Therefore, it is possible that television was most associated with body dissatisfaction in this sample because participants were engaging in less ritualistic use of television than was hypothesized. Use of time-shift technology was not recorded in the current study, but will be an important area of future research.

Specifically, future research in this area is needed to determine whether college-age women are typically using time-shift technology to watch television, and how this technology might influence the association between media use and psychological outcomes.

**Impact of Different Internet Activities on Body Dissatisfaction**

In support of study hypotheses, the distinct types of Internet categories were differentially associated with body dissatisfaction. Specifically, entertainment/celebrity websites were the only type of Internet use associated with body dissatisfaction. This contrasts with the hypothesis that blogs would have the greatest impact on body dissatisfaction. However, recent data shows that young adults in the 18 – 33 age range declined in reading and writing blogs by 17% from 2009 to 2010 (Pew Research Center, 2010). Instead, this age group continued to increase the amount of time spent online with social network websites. While parasocial interaction theory suggests that people can form imaginary relationships with media sources, users participating in Internet communities have the opportunity to form interpersonal relationships. People who participate in Internet communities such as social networking websites, Internet chat
rooms, the comments sections of websites, and networked gaming communities report that their motivation for participating in the community is the potential for close relationships, sharing experiences, and co-creating value for the Internet community (Droge, Stanko & Politte, 2010). Although a majority of the sample in the present study did report use of social networking sites, this was reported in the Other category which was not significantly associated with body dissatisfaction. Further, researchers did not specifically ask participants about their use of social networking websites, and participants who disclosed their use wrote this into the other section of the survey. Recent research has shown that use of social networking websites increases the risk of developing eating disorders for adolescent girls (University of Haifa, 2011). This research should extend to examine the effects of social networking websites on outcomes of interest for adult women.

**Self-Esteem as a Moderator**

Women with higher self-esteem manifested less body dissatisfaction at higher levels of Internet use. However, this interaction was not present in the relation between magazine and television use and body dissatisfaction. Research has shown that levels of self-esteem can vary for viewers of different media types with more frequent television watchers having lower self-esteem than frequent magazine readers (Tiggemann, 2003). In addition, an experimental study showed that women who were exposed to Internet thin-ideal images had lower self-esteem after exposure (Bardone-Cone & Cass, 2007). Past research has also shown that for restrictive eaters (dieters), exposure to thin-ideal images can enhance appearance self-esteem, which is thought to be attributable to a fantasy effect. This fantasy effect has been described as occurring when women are
exposed to thin-ideal images, imagine themselves in their ideal body, and have the belief that they can achieve this ideal body (Myers & Biocca, 1992). However, it is important to note that, restrictive eaters have overall lower self-esteem compared with unrestrictive eaters (Mills, Polivy, Herman & Tiggemann, 2002). Much of the literature examining the interaction between self-esteem and Internet use shows that higher amounts of Internet use are associated with lower self-esteem, and concludes that low self-esteem may be a risk factor for developing and “Internet addiction” (Armstrong, Phillips & Saling, 2000; Ehrenberg, Juckes, White & Walsh, 2008). However, no studies have examined the impact of level of self-esteem on body dissatisfaction associated with Internet use.

This study cannot identify the precise features of the Internet responsible for driving the relations among Internet use, body dissatisfaction, and eating disorder symptomatology. Additionally, this study cannot yield conclusions about causal mechanisms influencing the development of eating disorders. However, according to Social Comparison Theory, exposure to thin-ideal images triggers cognitive self-comparison, and leads to feelings of dissatisfaction (Festinger, 1954; Corning, Krumm & Smitham, 2006).

**Implications**

Results of this study have a number of practical implications. Some evidence exists that media literacy programs are successful at preventing body dissatisfaction (Levine and Murnen, 2009). Current findings highlight the need to expand these programs to include Internet media. The Internet provides a unique challenge for prevention and intervention, as messages can come through Internet content websites, streaming videos, pop up advertisements, and social communications and networking.
The Internet is also unique in its almost limitless nature, making it possible to access a huge cache of image-focused content instantaneously, at any time of day or night. This is particularly concerning when considering the statistics about the increasing diffusion of the Internet women’s lives, and how it now is now used in work, social, leisure, and hobby activities (Pew Center Research, 2010). Further, 43% of undergraduate students attending the university where the present study was conducted have reported using their personal mobile devices as their primary source of Internet, an increase of 32.8% from two years prior (Kapsidelis, 2011), highlighting the omnipresent nature of the Internet.

Limitations

There were a number of limitations in this study. First, the sample was one of convenience and recruited from the undergraduate population of a large urban mid-Atlantic university where this research took place. Future research should include a wider diversity of participants with respect to age and educational level to produce more generalizable results. However, as women in this age range tend to be an at-risk population for eating disorders, this was an acceptable sample for this study. Second, as with almost all media studies, all information was collected through self-report and reports of media usage were retrospective. Future research should use more precise and impartial methods of collecting data (e.g., use of the Nielsen box for television information, computer programs that track and record all websites visited within a set amount of time). In order to be more accurate, future research would also be recommended to include a clinical interview of eating disorder symptoms, and objective measures of BMI. Third, the media usage questionnaire did not include questions about social networking, participation in Internet communities and streaming television. Future
researchers should also consider including questions about use of the Internet on personal mobile devices. One particular difficulty with media studies is that people often multi-task, and our study was unable to capture information about whether participants were spending focused time on these websites, or whether multiple websites were open on the participants’ computer competing for their attention. With the advent of personal mobile devices, people have the ability to be connected at almost all times, making the measurement of media dosage particularly challenging. Fourth, this study was cross-sectional in design and therefore no causal conclusions can be drawn. Although it seems possible that media exposure causes body dissatisfaction, the converse is also possible. For example, women who are particularly unhappy with their bodies may intentionally pursue thin-ideal images. Research has suggested (Tiggemann & Miller, 2010) that this is most likely for Internet users due to the more intentional nature of Internet consumption. Experimental and longitudinal research is recommended to investigate the causal and meditational relations between media use, thin-ideal internalization and body dissatisfaction.

Although the etiology of eating disorders involves a complex combination of environmental, genetic, developmental, psychological, and social factors; this study focused exclusively on sociocultural factors influencing development of eating disorders through examination of the impact of the media on women. In conclusion, this study has made an important first step in comparing Internet use to magazines and television use for their impact on women’s body image. With the advent of personal mobile devices that allow people to be connected at all times, Internet use continues to become more
ubiquitous and more research into the its impact on body image and eating disorder symptomotology is urgently needed.
List of References
List of References


Appendix

Media Use Questionnaire

Television

- Please indicate, under each given category, the television shows you watch.
  *Please be sure to include all television shows/program watched on any system, including TV, DVD, the internet, DVR, etc.*
- Then, indicate in an average week, how much time (in hours) you spend watching each television show.


I watch the following Entertainment/Celebrity News shows:

1. ________________  Total Time per week: ______ hours.
2. ________________  Total Time per week: ______ hours.
3. ________________  Total Time per week: ______ hours.
4. ________________  Total Time per week: ______ hours.
5. ________________  Total Time per week: ______ hours.
6. ________________  Total Time per week: ______ hours.
7. ________________  Total Time per week: ______ hours.
8. ________________  Total Time per week: ______ hours.
9. ________________  Total Time per week: ______ hours.
10. ________________ Total Time per week: ______ hours.

N/A, I don’t watch any entertainment/celebrity news television shows: ______

**Fashion/Beauty Television** (e.g., Ten Years Younger, How Do I Look?, Doctor 90210, What Not to Wear, How to Look Good Naked, Extreme Makeover, Make Me a Super Model, Project Runway, Biggest Loser, America’s Next Top Model, etc.)

I watch the following Fashion/Beauty television shows:

1. ________________  Total Time per week: ______ hours.
2. ________________  Total Time per week: ______ hours.
3. ________________  Total Time per week: ______ hours.
4. ________________  Total Time per week: ______ hours.
5. ________________  Total Time per week: ______ hours.
6. ________________  Total Time per week: ______ hours.
7. ________________  Total Time per week: ______ hours.
8. ________________  Total Time per week: ______ hours.
9. ________________  Total Time per week: ______ hours.
10. ________________ Total Time per week: ______ hours.

N/A, I don’t watch any fashion/beauty television shows: ______
**Soap Operas** (e.g., Days of Our Lives, General Hospital, All My Children, The Young and the Restless, etc.)

I watch the following Soap Operas:

1. ________________  Total Time per week: _____ hours.
2. ________________  Total Time per week: _____ hours.
3. ________________  Total Time per week: _____ hours.
4. ________________  Total Time per week: _____ hours.
5. ________________  Total Time per week: _____ hours.
6. ________________  Total Time per week: _____ hours.
7. ________________  Total Time per week: _____ hours.
8. ________________  Total Time per week: _____ hours.
9. ________________  Total Time per week: _____ hours.
10. ________________  Total Time per week: _____ hours.

N/A, I don't watch any soap operas: ______

**Music Videos** (e.g., VH1, BET, MTV; only count time spent watching music videos, not shows)

I watch the following music video television:

1. ________________  Total Time per week: _____ hours.
2. ________________  Total Time per week: _____ hours.
3. ________________  Total Time per week: _____ hours.
4. ________________  Total Time per week: _____ hours.
5. ________________  Total Time per week: _____ hours.
6. ________________  Total Time per week: _____ hours.
7. ________________  Total Time per week: _____ hours.
8. ________________  Total Time per week: _____ hours.
9. ________________  Total Time per week: _____ hours.
10. ________________  Total Time per week: _____ hours.

N/A, I don't watch any music videos: ______

**Reality Television** (e.g., Flavor of Love, Real World, American Idol, America’s Best Dance Crew, Dancing with the Stars, So you Think you can Dance?, Top Chef, Big Brother, Iron Chef, Workout, Shear Genius, Split Ends, Girls Next Door, etc.)

I watch the following reality television:

1. ________________  Total Time per week: _____ hours.
2. ________________  Total Time per week: _____ hours.
3. ________________  Total Time per week: _____ hours.
4. ________________  Total Time per week: _____ hours.
5. _______________ Total Time per week: ______ hours.
6. _______________ Total Time per week: ______ hours.
7. _______________ Total Time per week: ______ hours.
8. _______________ Total Time per week: ______ hours.
9. _______________ Total Time per week: ______ hours.
10. _______________ Total Time per week: ______ hours.

N/A, I don’t watch any reality television shows: ______

Other (e.g., cooking shows, household/decorating shows, The History channel, PBS, talk shows, etc.)
1. _______________ Total Time per week: ______ hours.
2. _______________ Total Time per week: ______ hours.
3. _______________ Total Time per week: ______ hours.
4. _______________ Total Time per week: ______ hours.

N/A, I don’t watch any television: ______

Magazines

- The following magazines come out once a month. Indicate which magazines you read by placing an “X” in the associated box.
- Indicate on an average month, how much time (in minutes) you spend looking at and/or reading each magazine.

<table>
<thead>
<tr>
<th>Total Time per Month</th>
<th>Total Time per Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cosmopolitan _______ min.</td>
<td>InStyle _______ min.</td>
</tr>
<tr>
<td>Vibe _______ min.</td>
<td>Marie Claire _______ min.</td>
</tr>
<tr>
<td>Vogue _______ min.</td>
<td>Elle _______ min.</td>
</tr>
<tr>
<td>Harper's Bazaar _______ min.</td>
<td>Lucky _______ min.</td>
</tr>
<tr>
<td>Glamour _______ min.</td>
<td>Vanity Fair _______ min.</td>
</tr>
<tr>
<td>Jane _______ min.</td>
<td>Prevention _______ min.</td>
</tr>
<tr>
<td>Ebony _______ min.</td>
<td>Fitness Magazine _______ min.</td>
</tr>
<tr>
<td>Essence _______ min.</td>
<td>Women’s Health _______ min.</td>
</tr>
<tr>
<td>Self _______ min.</td>
<td>Shape _______ min.</td>
</tr>
<tr>
<td>Seventeen _______ min.</td>
<td>Teen Vogue _______ min.</td>
</tr>
</tbody>
</table>
CosmoGIRL! ___ min.

Other (please specify)? ___ min. Other (please specify)? ___ min.

Other (please specify)? ___ min. Other (please specify)? ___ min.

None. I don’t read any monthly magazines.

- The following magazines come out once a week. Indicate which magazines you read by placing an “X” in the associated box.
- Indicate in an average week, how much time (in minutes) you spend looking at and/or reading each magazine.

**Total Time per Week**                  **Total Time per Week**

People ___ min.                         Star ___ min.

InTouch ___ min.                         Time ___ min.

USWeekly ___ min.                       Newsweek ___ min.

Life&Style ___ min.                      OK! Magazine ___ min.

National Enquirer ___ min.              Other (please specify)? ___ min

Other (please specify)? ___ min.        Other (please specify)? ___ min.

None. I don’t read any weekly magazines.

**Computer**

- Indicate which websites you view by placing an “X” in the associated box under each category.
- Then, indicate how many times you visit each website on an average week.
- Finally, indicate on an average week, how much total time (in hours) you spend on each website.
<table>
<thead>
<tr>
<th>Entertainment/Celebrity Blogs</th>
<th>Visits per Week</th>
<th>Total Time per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.tmz.com">www.tmz.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.bossip.com">www.bossip.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.perezhilton.com">www.perezhilton.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.theYBF.com">www.theYBF.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.X17online.com">www.X17online.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>_______</td>
<td>_______ hours</td>
</tr>
</tbody>
</table>

None. I don’t look at any entertainment/celebrity blogs.

<table>
<thead>
<tr>
<th>Fashion/Beauty</th>
<th>Visits per Week</th>
<th>Total Time per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.style.com">www.style.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.vanityfair.com">www.vanityfair.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.glamour.com">www.glamour.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.marieclaire.com">www.marieclaire.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.redbookmag.com">www.redbookmag.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.vibe.com">www.vibe.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.cosmopolitan.com">www.cosmopolitan.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.harpersbazaar.com">www.harpersbazaar.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.ebony.com">www.ebony.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.janemag.com">www.janemag.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.instyle.com">www.instyle.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.elle.com">www.elle.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.hillary.com">www.hillary.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.essence.com">www.essence.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
</tbody>
</table>
None. I don’t look at any fashion/beauty websites.

<table>
<thead>
<tr>
<th>Entertainment News</th>
<th>Visits per Week</th>
<th>Total Time per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.people.com">www.people.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.eonline.com">www.eonline.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.mtv.com">www.mtv.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.eonline.com">www.eonline.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.bet.com">www.bet.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.ew.com">www.ew.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td>Other (please specify)?</td>
<td>_______</td>
<td>_______ hours</td>
</tr>
</tbody>
</table>

None. I don’t look at any entertainment news websites.

<table>
<thead>
<tr>
<th>Music Videos</th>
<th>Visits per Week</th>
<th>Total Time per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.mtv.com">www.mtv.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.bet.com">www.bet.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.vh1.com">www.vh1.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.cmt.com">www.cmt.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.youtube.com">www.youtube.com</a> (music videos only)</td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.yahoo.com">www.yahoo.com</a> (music videos only)</td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td>itunes (music videos only)</td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td>Other (please specify)?</td>
<td>_______</td>
<td>_______ hours</td>
</tr>
</tbody>
</table>
Other (please specify)?

None. I don’t look at any music videos online.

<table>
<thead>
<tr>
<th>Fitness/Nutrition</th>
<th>Visits per Week</th>
<th>Total Time per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.fitnessmagazine.com">www.fitnessmagazine.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.self.com">www.self.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.shape.com">www.shape.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.fitnessonline.com">www.fitnessonline.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.muscleandfitness.com">www.muscleandfitness.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.womenfitness.net">www.womenfitness.net</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td><a href="http://www.diet.com">www.diet.com</a></td>
<td>_______</td>
<td>_______ hours</td>
</tr>
<tr>
<td>Other (please specify)?</td>
<td>_______</td>
<td>_______ hours</td>
</tr>
</tbody>
</table>

| Other (please specify)?            | _______        | _______ hours       |

<table>
<thead>
<tr>
<th>Other Favorite Websites per Week</th>
<th>Type of Website</th>
<th>Visits per Week</th>
<th>Total Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other (please specify)?</td>
<td>_______</td>
<td>_______</td>
<td>_______ hours</td>
</tr>
</tbody>
</table>

| Other (please specify)?            | _______        | _______        | _______ hours |

| Other (please specify)?            | _______        | _______        | _______ hours |

| Other (please specify)?            | _______        | _______        | _______ hours |

| Other (please specify)?            | _______        | _______        | _______ hours |
VITA

Carrie Elizabeth Bair was born on December 16, 1983, in Syracuse, New York, and is an American citizen. She graduated from Charles O. Dickerson High School, Trumansburg, New York in 2002. She received her Bachelor of Arts in Political Science and Psychology from Boston University in 2006. She worked as a Research Assistant at the Center for Anxiety and Related Disorders at Boston University for one year, and as a Research Assistant for the Posttraumatic Stress Disorder Research Program at the San Francisco VA Medical Center / NCIRE for two years.