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# Do body image and gender role attitudes mediate the relationship between media exposure and sexual risk behavior in college students?

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DO BODY IMAGE AND GENDER ROLE ATTITUDES MEDIATE  
THE RELATIONSHIP BETWEEN MEDIA EXPOSURE AND  
SEXUAL RISK BEHAVIOR IN COLLEGE STUDENTS?

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

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## **Abstract**

### **DO BODY IMAGE AND GENDER ROLE ATTITUDES MEDIATE THE RELATIONSHIP BETWEEN MEDIA EXPOSURE AND SEXUAL RISK BEHAVIOR IN COLLEGE STUDENTS?**

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

Virginia Commonwealth University, 2011

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Despite growing awareness of the HIV/AIDS pandemic and educational efforts to provide accurate information about sexually transmitted diseases (STD), young adults continue to engage in risky sexual practices that increase their vulnerability of acquiring an STD, including inconsistent condom use. Research has gathered ample evidence to suggest that the media, in particular television consumption, is directly linked with sexual risk, yet less is known about the potential mechanisms that may be driving this link. The present study examines body image and gender role attitudes as two potential mediators of this relationship. Three-hundred and four undergraduate students (73% female; 64% White) at a large, urban University completed questionnaires to assess television influence, body image, gender role attitudes, and sexual behavior, through an online-survey tool. Results yielded significant correlations among

several predictors and condom use, although mediation was not achieved. Limitations, implications of the findings, and directions for future research are discussed.

Do body image and gender role attitudes mediate the relationship between media exposure and sexual risk behavior in college students?

Adolescents and young adults comprise the age group with the highest estimated incidence of sexually transmitted diseases (STDs) in the United States (CDC, 2009). Although they represent only 25% of the sexually active population, individuals 15 to 24 years of age are more likely to engage in risky sexual behaviors that contribute to the high rates of STDs (e.g., HIV, Chlamydia, gonorrhea, syphilis) seen in this population. For example, according to a report on the sexual and reproductive health of youth and young adults from the Centers for Disease Control and Prevention, in 2006 a total of 9,530 persons aged 10-24 years (3,914 females and 5,616 males) were living with HIV/AIDS in the United States and the majority of these individuals were young adults aged 20 to 24 years (71% of females and 80% of males) (CDC, 2009). To investigate the risk associated with young adults' sexual behavior, Buhi, Marhefka, and Hoban (2010) utilized data from the American College Health Association - National College Health Assessment. This study analyzed the sexual behaviors of a national sample of 42,529 undergraduate students (18 to 24 years). Results indicated that in their lifetime, 72% had reported ever having oral sex, 67% reported having had vaginal intercourse, and a reported 24% of students had had anal sex. Strikingly, of those who reported having had oral sex fewer than 5% used a condom the last time they engaged in this sexual act, for anal sex 31% of students reported using a condom their last time, and 58% of students reported using a condom at last vaginal intercourse. Despite educational efforts to disseminate accurate information about STD transmission, young adults continue to engage in risky sexual practices that put them at risk of contracting HIV, including inconsistent use of condoms and having multiple sexual partners (Duncan, Harrison, Toldson, Malaka, & Sithole, 2005). Thus, it is

important to identify factors and potential mechanisms that develop and maintain young adults' risky sexual practices.

### **The Media as a Sexual Socialization Agent**

Young adults are exposed to a variety of sources, such as parents, peers, and even the media, that are likely to inform their sexual knowledge and in turn their sexual behavior and practices. Although the media encompass many different genres (e.g., the Internet, movies, magazines, and radio), research has primarily focused on television viewing (Nunez-Smith, et al. 2008; Strasburger, Jordan, & Donnerstein, 2010; Wright, 2009). Despite the recent spike of research regarding Internet use given its popularity with adolescents and young adults, television still remains a powerful source of influence and ultimately sexual knowledge. In the average American home the television set is playing for approximately 7 hours a day (Gerbner, Gross, Morgan, Signorelli, & Shanahan, 2002). This constant repetition of stories is likely to influence our beliefs and attitudes about the world, making television a significant contributor of our value system. In an era where being “sexy” and behaving sexually is “in”, it is not surprising that television programming depicting sexual behavior is on the rise. Kunkel, Eyal, Finnerty, Biely, and Donnerstein (2005) found that 77% of primetime television shows depict sexual content, but only 11% of them make any mention of the risk and responsibilities that come with sexual intercourse. Moreover, Roberts, Henricksen, and Foehr (2004) found that television programs often depict the emotional or social consequences of sexual activities (e.g. humiliation, guilt, anxiety, and rejection), but largely fail to portray the physical consequences, such as an unwanted pregnancy or acquiring a sexually transmitted disease. Thus, television provides vast amounts of sexual information that may encourage young adults to emulate and embrace the recreational side of sex.

Recently, television networks whose audience typically consist of adolescents and young adults are launching programming (e.g., 16 and pregnant, Teen mom, True life) that focus on the lives of adolescents faced with unplanned pregnancies. Research on this type of programming is slowly appearing throughout the media literature. For example, Suellentrop, Brown, and Ortiz (2010) examined the effect of such shows on adolescents' attitudes toward teen pregnancy. They found that 93% of adolescents (12-19 years) reported that after watching an episode of the MTV hit show "16 and pregnant" they learned that teen parenthood is harder than what they imagined. After watching the show, girls were more likely than boys to have more realistic expectations about the negative consequences of teen pregnancy such as potentially not being able to finish high school and get a degree. Although teens seemed to be learning about the potential negative impact of risky sexual behavior, sexually experienced teens who watched the show were more likely to think that if they had a baby their parents would help them raise the baby, and that other people would view them as mature. In a separate report by The National Campaign to Prevent Teen and Unplanned Pregnancy (2010), 40% of adolescents ages 12 to 19 years ( $N = 1,008$ ) who reported watching "16 and pregnant" also reported being more likely to talk to their parents about teen pregnancy, and 82% believed that it helps adolescents better understand the challenges of parenting. Yet, 15% of respondents to this national phone poll believed the show glamorizes teen pregnancy. Although studies that examine the positive consequences television programming can have on adolescent and young adult's sexual socialization are starting to emerge, the vast majority of research cites the important role television plays in the development of sexual scripts and expectations that may lead to risky behaviors.

Young adults today have unparalleled access to entertainment media that features on-demand information concerning sexual behavior and ideals of self-concept, yet there may be

negative consequences associated with living in a society dominated by the media. For instance, researchers have found an association between television exposure and youth sexual behavior. In a national telephone survey (N = 1,762), Collins, et al. (2004) found that adolescents, ages 12 to 17, who watched high levels of sexual content on television were twice as likely to initiate sexual contact in the next 12 months compared to other adolescents. In a review of the literature Rich (2005) summarized the major findings of research studies targeting the media and sexual risk behavior over the past two decades. Findings revealed that youth who are exposed to greater sexual content in the media display more permissive attitudes toward sex, report increased sexual experience of peers, and engage in more sexual behavior (and at an earlier age) than youth who are less exposed to sexual content through the media. In addition, results with college samples replicate these findings. Zurbriggen and Morgan (2006), for example, found that college students who viewed reality dating programs were more likely than other students to adopt sexual double standards (i.e., men are dominant and should be more experienced than women; women are submissive and should not initiate sexual negotiations) and report higher levels of sexual experience than students who did not watch these programs. Moreover, Strouse and Buerkel-Rothfuss (1987) found that frequent viewing of music videos among college students was strongly associated with having multiple sexual partners.

Several frameworks have been proposed to explain why television (or media more generally) might affect sexual risk behaviors. First, Social Cognitive Theory (Bandura, 1986) proposes that individuals learn vicariously by observing others. If the behavior is rewarded without consequences (i.e., punishments), the behavior is likely to be modeled. As college students become immersed in their television programs and associate sex with a rewarding, consequence-free experience, they are more likely to imitate the behaviors seen on screen. For

instance, a recent study looking at television exposure and teen pregnancy found that adolescents who watch substantial amounts of sexual content on television have an increased risk of experiencing a pregnancy before the age of 20 (Chandra, et al., 2008). Furthermore, Martino, Collins, Kanouse, Elliott, and Berry (2005) found that adolescents who consumed a heavier sexual diet of television were more likely to initiate sexual intercourse one year later compared to adolescents that were less exposed to sexual content on television.

Another important theory implicated in this line of work that extends Social Cognitive Theory is Cultivation Theory (Gerbner, Gross, Morgan, Signorelli, & Shanahan, 2002). This theory suggests that individuals who consume higher amounts of media are likely to view the vivid portrayals of television as reality, when in fact reality could be far from this portrait. Under this framework, individuals who watch more television are likely to cultivate beliefs about the world (i.e., sex is risk-free) that coincide with the reality presented on screen (i.e., references to sex as recreational or women depicted as sexual objects) (Ward & Friedman, 2006). For instance, Buerkel-Rothfuss and Strousse (1993) demonstrated that heavier viewers of sexual television content had increased perceptions of the frequency with which some behaviors occur in the real world. Specifically, the authors found that undergraduates who view greater amounts of daytime soap operas offer higher estimates of divorce rates and number of children born out of wedlock than do less frequent viewers.

Lastly, proponents of Constructivist Theory (Ward & Rivadeneyra, 1999; Taylor, 2005) suggest that even though the amount of television exposure is important, a key element that must be addressed is how involved the individual is in what they are seeing. They argue that sexual socialization is likely to occur from the viewers' perceptions of and engagement with the television programs they watch. The more active and involved the viewer is the greater the

effect of the media on the individuals' perceptions of the world. To illustrate this framework, Zurbriggen and Morgan (2006) examined the relationship between exposure to dating reality programs and viewer involvement (e.g. watching to learn versus watching for entertainment). They found that young adults (ages 18-24) who were actively involved and watched these shows to inform their relationships held more gender stereotypical beliefs about dating and viewed men as sex-driven, than participants who watched for entertainment purposes.

In sum, we have learned great amounts regarding the relationship between media influences, specifically television exposure, and sexual risk behaviors. However, little is known about the processes or mediators through which television exposure affects sexual behavior.

### **Body Image and Gender Role Attitudes as Mediators**

Two factors that may mediate or affect the relationship between sexual health and media influences are body image and gender role attitudes, and both have been independently related to television exposure and sexual behavior.

Television has been implicated in portraying and transmitting body image standards to society. For example, in American television programming females are socialized to desire a thinner and petite figure, while males are encouraged to strive for a lean but muscular figure. As young adults begin exploring their sexuality and become intimate with others, concerns about failing to meet these standards arise (Arnett, 2000). A number of studies have demonstrated the negative association between television exposure and body satisfaction (Anderson, Huston, Schmitt, Linebarger, & Wright, 2001; Hargreaves & Tiggemann, 2002; Harrison, 2000). For instance, Groesz, Levine and Murnen (2002) reviewed 25 experimental studies and found that viewing images of the thin-ideal on screen was associated with lower body satisfaction in women. Furthermore, Harrison and Cantor (1997) conducted a study with 422 undergraduate



students and found that overall television viewing and magazine reading was predictive of body dissatisfaction in women; however this association was stronger for television exposure. For males, magazine reading, but not television exposure, was a significant predictor of endorsing thinness and dieting behaviors for themselves.

These findings are important given that negative appraisals of one's physical appearance have been linked to increased sexual risk behaviors. One study found that sexually active African American adolescent females (ages 14-18) with low body satisfaction were less likely to use condoms and more likely to have multiple sex partners than peers with a more positive image (Wingood, DiClement, Harrington, & Davies, 2002). Moreover, Gillen, Lefkowitz, & Shearer (2006) suggest that young adults may feel inadequate and uncomfortable in the presence of potential dating partners and may compare themselves more to same-sex peers. This uncertainty about the self may put college students at a higher risk of negative sexual outcomes, such as an unwanted pregnancy and sexually transmitted diseases. Being away from home and without parental supervision for probably the first time in their lives, college students may feel more freedom to engage in sexual behaviors but may also feel more self-conscious about their bodies. In addition, body satisfaction may play a role in the individual's self efficacy to communicate with their partners about safe sex. Shearer, Hosterman, Gillen, and Lefkowitz (2005) found that college women who are more satisfied with their bodies may exhibit greater confidence in sexual situations, increasing the likelihood that they will take a stand and advocate for safe sex, despite traditional gender roles which call for females to be submissive and acquiescent in sexual encounters.

A significant relationship between media exposure and gender role attitudes has also been identified in the field. Although the literature linking the two is not extensive, several studies

have demonstrated that regular exposure to television programming high in sexual content is associated with college students expressing a greater acceptance for recreational or casual sex, and of sexual stereotypes depicting women as sexual objects and men as “players” (Ward & Friedman, 2006; Zurbriggen & Morgan, 2006). Moreover, holding more traditional gender role attitudes has been associated with sexual risk behaviors. For example, Shearer, Hosterman, Gillen, and Lefkowitz (2005) found that young men (ages 18-25) who do not express stereotypical feminine behaviors, and thus adhere to the masculine role, are less likely to use protection or condoms during sexual acts. On the other hand, young women holding more traditional marital role attitudes tend to perceive more barriers to condom use. In addition, Noar and Morokoff (2002) found that higher levels of masculinity ideology in college males were associated with more negative attitudes about condoms, and in turn decreased readiness to use condoms in sexual encounters.

Over the past three decades research studies have tackled the media’s influence on risk behaviors but less is known about the potential mechanisms that may be driving the link between media exposure and sexual risk behaviors. The current study seeks to address this gap in the literature and provide evidence for specific mediators underlying the relationship between media influence and sexual risk behavior. Body image and gender role attitudes are two potentially key mediating factors that may further our understanding of the relationship between television exposure and sexual risk behaviors. The specific aims of this study are to: (1) examine the relationship between television influences and sexual risk behavior, (2) determine whether body image and gender role attitudes are significantly correlated with sexual risk behavior, respectively, and (3) examine the mediating role of body image and gender role attitudes on college students’ television influences and sexual risk behavior. A sample of 304 college

students, ages 18-25, attending an urban University completed measures assessing television influence, body image, gender role attitudes and sexual risk, using a web-based survey system.

### **Review of the Literature**

The sexual health of young adults is a public health priority. Young adults engage in sexual behaviors that increase their risk of unintended pregnancy and sexually transmitted diseases, including HIV. These behaviors comprise early sexual initiation, multiple sex partners, inconsistent use of condoms or other contraception, and use of substances (e.g., alcohol and drugs) that impair judgment about risk. Youth risk behavior surveillance data from the Centers for Disease Control and Prevention (CDC, 2007) show that 48% of high school students report having had sexual intercourse, and 15% of students report having 4 or more sexual lifetime partners. Moreover, 39% of sexually active high school students did not use a condom during their last sexual encounter. Among college students, a study of 662 undergraduates found that 51% reported having sexual intercourse within the previous month, with only 32% of students reporting “always” using a condom in the last 30 days (Lynch, Mowrey, Nisbett, & O’Neill, 2004). Along these lines, one study found that the mean number of lifetime partners for a sample of 778 freshman undergraduate students was 3.5, with the mean age of first sexual encounter being 16.4, putting young adults at risk early on in their lives (Flannery & Ellingson, 2003).

More recently, Buhi, Marhefka, and Hoban (2010) analyzed the sexual behaviors of undergraduate students, aged 18 to 24 years, using data from the American College Health Association - National College Health Assessment with a final sample of 42,529 students. Results indicated that 75.1% of students reported ever having any sexual experience (i.e., oral, vaginal, or anal sex), and the mean number of sexual partners for this group was 1.41( $SD=2.44$ ).

Of those who reported having had oral sex (72%), only 4.3% used a condom in their last oral sexual act. For students who endorsed having had anal sex (24%), approximately 31% used protection in the form of condoms while engaging in this act the last time. Finally, of the 67% of students who reported vaginal intercourse, 58% used a condom in the last time. Although sexual activity is prevalent among college students, the use of protection against sexually transmitted diseases is limited. Interestingly, this study found race/ethnic differences in sexual behavior among Black and White students. For instance, a greater percentage of Black men and women reported using condoms during sexual activity compared to their White peers (condom use at last oral sex: 10% vs. 3.5%; condom use at last vaginal sex: 62.7% vs. 57.9%; and condom use at last anal sex: 44% vs. 29.8%). Although Black students were more likely to use condoms during sex, results indicated that they are more likely to have a greater number of sexual partners (1.72[*SD*=3.49] vs. 1.40[*SD*=2.36]) compared to White students.

A recent study by Turchik, Garske, Probst, and Irvin (2009) analyzed responses from 310 undergraduate psychology students (ages 18 to 23) to examine whether personality traits, sexuality, and substance use predicted sexual risk behaviors over a period of six months. Results indicated that men who engaged in greater alcohol and recreational drug use and scored higher on personality measures of extraversion and low on agreeableness were more likely to engage in sexual risk taking (i.e., unprotected sexual encounters, multiple sexual partners) than men who scored lower on the same assessments. Alternatively, women who reported a greater alcohol and drug consumption, higher sexual excitation, and lower sexual inhibition were more likely to take sexual risks than women with lower scores on these measures.

This high risk sexual behavior has serious consequences. Approximately 19 million sexually transmitted diseases (STD) are diagnosed each year, with nearly half of them afflicting

adolescents and young adults aged 15 to 24 years (Weinstock, Berman & Cates, 2004). According to the Centers for Disease Control and Prevention (CDC), adolescents and young adults are particularly at risk for exposure to HIV through heterosexual contact (CDC, 2008a). The latest statistics from 2006 reveal that 15% of the newly diagnosed HIV cases in the United States were among individuals 13 to 24 years of age (CDC, 2008b). Moreover, Rotheram-Borus and Futterman (2000) estimated that only 16% of youth living with HIV are actually aware of their serostatus (compared to two-thirds of adults). Despite persistent efforts to disseminate information and increase awareness about HIV transmission, youth and young adults continue to engage in sexual behaviors (e.g., inconsistent condom use, multiple sexual partners) that place them at high risk for contracting the virus. Thus, it is important to identify the potential mechanisms or processes that may keep young adults from protecting themselves and practicing safe sexual behaviors.

### **The Relationship between Television Exposure and Sexual Risk Behaviors**

One important agent implicated in young adults' sexual risk behaviors is the mass media, and in particular, television exposure. Although there is a growing literature on the effect of sexual content found in the Internet, the music industry (e.g., songs and videos), and other media channels on sexual health (Brown & L'Engle, 2009; Kim & Ward, 2004; Wingood, et al., 2003), this review and the current study focuses on the relationship between television exposure and sexual risk behaviors. Youth spend approximately 6 to 7 hours per day with some form of media, including television, movies, radio, computers and the Internet (Escobar-Chavez, et al. 2005), however, they spend more time in front of the television than with any other type of media (Roberts & Foehr, 2004). Recent statistics with children ages 11 to 14 find that they spend approximately 8 hours and 40 minutes with some type of media every day, however,

spend 5 hours watching television (Suellentrop, Brown, Ortiz, 2010). Similarly, adolescents ages 15 to 18 report spending 8 hours of daily media use with 4 hours of 22 minutes spent in front of the television set. Budden, Anthony, Budden, and Jones (2007) found that on average college students spend 13.49 hours a week watching television. Consequently, television provides countless visual examples and verbal scripts that aid young adults' learning about dating, intimacy, sex, and relationships in general (Brown & Strasburg, 2007). To illustrate, Farrar, Kunkel, Biely, Eyal, Fandrich, and Donnerstein (2003) examined the 2002 prime-time programming for sexual content and found that movies were the genre most likely to feature sexual content (94% of movies), followed by comedy series (89%) and dramas (73%). Even though movies were the most likely genre to include sexual talk and behaviors, results indicated that comedies had the highest number of sexual scenes per hour (9.5), followed by drama series (6.1 scenes per hour), news magazine shows (4.3), reality shows (3.7) and lastly, movies (3.3). These findings highlight the frequency with which sexual messages are found across primetime television and remind us of the power television has to promote sex in their viewers.

More recently, television programming is starting to shift, with reality television programs that attempt to explore and portray the negative consequences of sexual risk behavior. For instance, networks such as MTV are broadcasting television shows (e.g., *16 and Pregnant*, *Teen Mom*, *True Life*) that bring to the screen the positive and negative consequences that come with early parenthood, and specifically portray the way young mothers cope with the stresses and challenges of pregnancy. With the rise of these programs on television, research that explores its impact on viewers is starting to emerge. Suellentrop, Brown, and Ortiz (2010) conducted a study with adolescents, ages 12 to 19, to examine the impact of watching an episode of MTV's "16 and pregnant" on attitudes about teen pregnancy. Participants completed pre and post-test

questionnaires and were randomly assigned to one of two conditions: a treatment group, which consisted of adolescents watching three episodes of the show, followed by discussion of the episodes, and a control group, who neither viewed nor discussed the episodes. Results indicated that of 84 adolescents who were randomly assigned to watch the episodes, 93% reported that they learned that teen parenthood is harder than what they imagined. Furthermore, they reported enjoying the show and discussing it with peers (63%) and parents (41%). Interestingly, a gender difference was found in that girls were more likely to have more realistic expectations about being able to finish high school and pursue a college degree compared to boys. Even though adolescents in this sample voiced their learning about the potential negative impact of risky sexual behavior, findings also revealed that those adolescents who were sexually experienced and watched the episode were more likely than adolescents who were not sexually active to believe that their parents would help them if they got pregnant and others would think of them as mature. Furthermore, in 2010 The National Campaign to Prevent Teen and Unplanned Pregnancy conducted a phone survey with over 1,000 adolescents ages 12-19. Results revealed that 82% of adolescents who have seen MTV's hit show "16 and pregnant" were more likely to believe that these portrayals help them understand the challenges these adolescents are facing. Yet, 15% of youth believed the show portrays teen pregnancy in a glamorous and alluring way.

Although some studies have examined the positive and educational aspects of the messages portrayed in television (Collins, et al. 2003; Rideout, 2008; Suellentrop, Brown, & Ortiz, 2010), the consensus in the field is that television may misinform its audience by under-emphasizing the consequences of sexual risk behaviors, presenting a distorted portrayal of sexual roles, and encouraging a consequence-free sexual belief system (Brown, 2002; Brown, 2006; Ward & Friedman, 2006). For example, Kunkel, Eyal, Finnerty, Biely, and Donnerstein (2005)

found that 77% of broadcasting prime-time television programs portrays sexual content. However, only 11% of scenes reference the potential risks or negative consequences of sex or mention safe sex practices. Brown (2002) states that the media has intentionally overlooked the 3 C's of responsible sexual behavior: commitment, contraceptives, and consideration of consequences. Her research indicates that approximately 1 in 10 television programs mentions some form of consequence to having unprotected sex. Furthermore, Hust, Brown & L'Engle (2008) conducted a quantitative analysis utilizing four mediums of the popular media (television, magazines, music, and movies) with 12 to 14 year olds. Over 200,000 units (e.g., non-break sequences or camera cuts, paragraphs, photos, headlines) were randomly selected and coded for content from the most popular "vehicles" watched, listened to, or read by adolescents. A total of 446 units of sexual health content were identified. Analyses revealed that only 25% of units discussed pregnancy, 11% covered sexually transmitted diseases, and 19% focused on condom use or other forms of birth control. These findings become especially alarming when we consider that adolescents often rank the media among their top sexual informants, along with their peers and parents (Collins, Elliott, Berry, Kanouse, & Hunter, 2003; Epstein & Ward, 2008). As a result of this increased exposure to sexual content in television shows, researchers have examined the association between television viewing and adolescent and young adult sexual risk attitudes, intentions, and behaviors.

Exposure to sexual content on television has been associated with more liberal and stereotypical sexual attitudes, beliefs about relationships, greater acceptance of dating violence, and sexual risk behaviors (Ward, 2003). For instance, Martino, Collins, Kanouse, Elliott and Berry (2005) conducted a large national study of adolescents (ages 12-17) who had not engaged in sexual intercourse and were interviewed at baseline and at a one-year follow up. The surveys



included questions regarding exposure to sexual content on television, intercourse-related outcome expectancies, perceived norms regarding sex, and sexual behavior and intentions. Results indicated that viewing sexual content on television was associated with less negative expectations about the potential detrimental consequences of having sexual intercourse (e.g., social acceptance/rejection, unwanted pregnancies, and STDs). These negative expectancies were, in turn, associated with a higher likelihood of intercourse initiation one year later. What's more, Chandra, et al. (2008) examined the relationship between exposure to sexual content on television and teen pregnancy in a sample of 1,461 youth (ages 12-17). Data from this longitudinal national study revealed that adolescents who were exposed to high sexual content on television were three times more likely to have experienced a pregnancy three years after baseline than adolescents exposed to low levels of sexual content. As a result, being exposed to images depicting sexual content in the media has been strongly linked to negative outcomes.

These negative effects are also seen with college samples. Ward (2002) examined data from 259 undergraduates and found a strong association between television exposure and deeper viewer involvement with attitudes consistent with sexual relationships being recreationally oriented and classifying men as sex-drive and women as sex-objects. Moreover, these types of attitudes are associated with risky sexual practices. For instance, Zurbriggen and Morgan (2006) examined the associations between television viewing of reality dating programs and sexual attitudes and behaviors in college students. Their findings indicate that for males overall viewing was correlated with holding a sexual double standard (i.e., women who initiate sex are too aggressive; men should be more sexually experienced than their partner). Furthermore, for women, viewing these programs as a learning tool was negatively associated with reported levels of sexual experience, and overall television viewing was positively related with having had

sexual intercourse. Another study found that among 259 undergraduate women (mean age of 19 years), frequent exposure to music videos was strongly associated with both a greater number of sexual partners and with more sexual experience (Strouse & Buerkel-Rothfuss, 1987). For the 198 men in the sample (ages 18-33), frequent viewing of soap operas was related to having more sexual partners. In addition, Ward and Rivadeneyra (1999) found that out of 314 college students (ages 18-24) those students who perceived portrayals of typical sexual situations on television as more realistic and likely to happen in their own lives were more likely to report greater levels of sexual experiences. These studies provide evidence to support the notion that television viewing is positively correlated with permissive sexual attitudes and risky sexual behaviors of young adults.

Television exposure is also linked with other health risk behaviors that, in turn, are often associated with sexual risk behaviors. For example, exposure to television programming depicting alcohol has been implicated in more positive beliefs and expectancies about alcohol (Grube & Wallack, 1994), as well as alcohol consumption (Collins, Ellickson, McCaffrey, & Hambarsoomians, 2007). These types of findings are concerning given the link between alcohol use and sexual risk behaviors. Specifically, alcohol use can negatively affect an individual's judgment about safe sexual practices. For example, one study found that 26.6% of college students used drugs or alcohol before engaging in sexual intercourse (Johnson, 1992). Moreover, in a sample of 7,441 unmarried youth and young adults, ages 14-22, Santelli, Robin, Brener and Lowry (2001) found a strong link between alcohol and drug use and sexual risk behaviors. Among those who used substances in their last intercourse, 61% had had multiple partners within the past 30 days compared to 32% of those who did not use alcohol or drugs at their last sexual encounter. For men, an earlier initiation of alcohol use was negatively correlated with condom

use in their last sexual intercourse but positively correlated with having had multiple partners within the past month. For women, as alcohol and drug use increased the likelihood that they would have multiple sexual partners in the past 3 months also increased (8% to 48% for alcohol use, 6% to 35% for drug use). Thus, television endorses alcohol use among youth which can subsequently play a role in sexual risk practices.

Television viewing has also been related to smoking. One study found that adolescents who watched advertisements promoting cigarettes were at a higher risk for smoking than those who were not exposed to these ads (Biener & Siegel, 2000). The authors argued that the increased risk was due to the glamour associated with smoking and smokers alike. The same researchers found that participants who were able to recall the ads related to tobacco were more likely to view smoking favorably and to become smokers themselves. In another study, Dalton Sargeant, Beach, et al. (2003) established that of never smoking adolescents, exposure to movie smoking at baseline predicted smoking initiation 1 year later. Taken together, these studies suggest that adolescents and young adults may perceive smoking as “cool” and “hip” thereby increasing the likelihood that they will initiate smoking themselves. Just as repeated exposure to smoking on television programming has the ability to increase the frequency of this behavior, it is then feasible to consider that exposure to sexual content on television may play the same role in today’s youth.

It is important to note, however, that the majority of the studies in the field are correlational and therefore only demonstrate an association between television exposure and sexual risk behavior. I have presented evidence that finds a significant link between consuming a heavier television diet and risky sexual practices including early initiation of sexual intercourse. It is easy to conceptualize the findings in the literature as concluding that television

viewing leads to more sexual risk behaviors, however, we cannot determine whether exposure to sexual content on television *caused* the enactment of the behavior given that it is possible that students who already engaged in risky practices (and potentially are more sexually experienced) are more drawn to television shows with sexual content, and therefore it is not the viewing of the show that increases these behaviors. Thus, the findings presented in this literature review should take this into account and be interpreted with caution.

The studies reviewed above all suggest that one of the many challenges facing today's youth and young adults is how to successfully navigate a media-dominated world. From television to print media to the Internet, youth and young adults are constantly bombarded with an array of messages that in one way or another influence their self-concept and behavior (Heatherton & Sargent, 2009). Although the effect media messages have on its observer is not always apparent, the information received has the potential to shape the mental representations or schemas formed. Given the extensive contact we have with media communications in our day to day lives, strong concern and worry exist among psychologists, policy makers, and parents about the potential detrimental effects the media has on adolescents' and young adults' health and behavior (Rich, 2005). Therefore, researchers have been particularly interested in *how* media exposure influences youth's and young adults' sexual attitudes, knowledge, and sexual risk behaviors.

### **How Does Television Viewing Influence Sexual Risk Behaviors? Theoretical Frameworks**

Over the years, researchers have developed theories and hypotheses that attempt to explain television's role as an educator. Having already presented evidence supporting the link between television exposure and sexual risk behaviors, my focus now turns to examining the theories that drive these associations and the empirical research that supports them. The sections

below highlight three well-established psychosocial theories that have been used to explain the underlying processes that link television viewing and sexual risk behaviors: Social Cognitive Theory, Cultivation Theory, and Constructivist Theory.

**Social Cognitive Theory.** According to Social Cognitive Theory (Bandura, 1994) human behavior is a product of three distinct processes: 1) direct experience, 2) vicarious learning from observing others (modeling), and 3) the storing and processing of complex information through cognitive operations. Stemming from his earlier work on social learning, Bandura posited that even when individuals have not actually performed a behavior, they can learn through imitation, that is mimicking the behaviors of others. Applying this thinking to the media's influence on behavior, television can act as an agent of socialization that produces its' effects through the individual's disposition to learn by modeling those on screen. Furthermore, watching television allows viewers to expand their knowledge, skills, and behavioral repertoires on the basis of observed models. Specifically, individuals are more likely to pay more attention and follow models they find attractive and more similar to the self.

Following Bandura's model, I expect that viewer's sexual decisions are shaped by observing the models presented, identifying with the characters on screen, and following the behaviors that have been rewarded. Therefore, individuals who pay close attention to the information portrayed on television will generate new schemas or modify existing mental representations of the world that fit what was learned. By extension, these modified or newly acquired schemas may influence the way people act. Bandura (2001) directly applied his earlier work to a theory specific to media processes called the Social Cognitive Theory of Mass Communication. This theory proposes that media portrayals can influence real-world behaviors via observation and imitation if presented explicitly and in detail. Thus, audience members

adopt the messages seen on television based on their personal dispositions to learn, the salient features of the media images, and their personal connection to these images.

Bandura's model establishes a direct link between television viewing and imitation of the behavior. A recent review of the literature found evidence to support the theory. The review found that of the 14 studies devoted to evaluating the relationship between media exposure and sexual behavior, 13 (93%) found a statistically significant association between exposure to sexual content on television and more rapid progression of initiation of sexual behavior (Nunez-Smith, et al., 2008). In addition, using longitudinal data from a sample of 1,292 adolescents (12-17 years of age), Martino, Collins, Kanouse, Elliott, and Berry (2005) examined the effects of social cognitive theory on sexual behaviors. They found that adolescents who were exposed to a higher sexual diet on television were more likely than other adolescents to initiate sexual relations one year later. Interestingly, African-American and White adolescents, but not Hispanic adolescents, exposed to more frequent sexual content on television were more confident in their abilities to enact safe sexual behaviors (e.g., condom use, communication with partner) and as a result less likely to initiate sexual intercourse, making safe sex self-efficacy a strong mediator of television exposure and sexual initiation. Yet, the authors also found that the more sexual content adolescents watched on television, the less negative expectations of the potential consequences of sex were perceived and the higher the likelihood of intercourse initiation. This finding is not surprising given the portrayal of risks and responsibilities regarding sex on television are but a mere 14% among all programs, and 11% for primetime shows (Kunkel, Eyal, Finnerty, & Donnerstein, 2005). Although observing media models behaving sexually on TV may increase an individual's self efficacy about practicing safe sex, it

can also undermine the potential detrimental consequences of sexual intercourse (e.g., unwanted pregnancy, STD's).

**Cultivation Theory.** A second theoretical framework that expands on Social Cognitive Theory and that has been extensively studied in media and sexuality research is Cultivation Theory. Proposed by Gerbner and colleagues in 1986 and refined in 1994, this theory suggests that higher amounts of media viewing will lead to a cultivation of attitudes and beliefs that reflect a distorted version of reality (Gerbner, Gross, Morgan, Signorelli, & Shanahan, 2002). As viewers are continually exposed to this fake-reality, they gradually come to cultivate or adopt beliefs about the world that coincide with this portrait. Although viewing content is important and will inform the schemas and beliefs formed, a key element that distinguishes this theory is exposure or amount of viewing. According to cultivation theory, television will have the strongest effect on those who spend more time watching television. This is likely to occur because the cognitive schemas acquired through repeated exposure to television are more readily available in our information processing centers and are more accessible for easy retrieval, making it more likely that real experiences are interpreted via such schemas (Shrum, 1996).

Following the cultivation model, I expect that young adults who spend more time engaged in and devoted to television shows will come to assimilate the messages presented as their own. For instance, those who frequently view television's repeated references to sex as recreational or to women as sexual objects would gradually come to adopt similar beliefs about sexuality in the real world (Ward & Friedman, 2006). Correlational studies dominate cultivation research, relating amount of television exposure to beliefs and attitudes characteristic of the media perspective of reality. For example, one study found that greater exposure to soap operas is associated with viewers' assumptions about the prevalence of sex and of certain sexual

activities frequently depicted on television (Buerkel-Rothfuss & Strousse, 1993). Along these lines, the authors found that undergraduates who frequently viewed soap operas offered higher estimates of the number of real people who divorce or have illegitimate children than do less frequent viewers. Furthermore, another study examined the attitudes of 314 undergraduate students (ages 18-24) about how dating and relationships are portrayed on television (Ward & Rivadeneyra, 1999). Participants completed questionnaires and were shown four video clips of popular TV shows. The authors concluded that watching more hours of primetime television was linked to stronger endorsement of recreational attitudes about sex, and greater total exposure to television was associated with holding more traditional gender role attitudes. Taken together these findings provide evidence to support cultivation theory, in that the more television watched the more likely individuals' are to adopt the messages portrayed and therefore behave in accordance with these attitudes and beliefs.

**Constructivist Theory.** Although ample evidence has supported both Social Cognitive Theory and Cultivation Theory, it is possible that other factors aside from viewing amounts and modeling affect sexual behavior. Ward and Rivadeneyra (1999) suggest that the role of the viewer is crucial in understanding this relationship and is widely overlooked in the aforementioned theories. These researchers take a more *constructivist* point of view and argue that viewer participation and involvement in what they are seeing will strongly influence the relationship between media exposure and sexual behavior. Overall, the literature points to four components that drive this perspective: 1) active involvement, 2) self-identification with characters, 3) viewer motivation, and 4) perceived realism (Ward, 2002). The current literature provides evidence that individuals who are more engaged and actively involved in what they watch (Ward & Rivadeneyra, 1999), who identify more strongly with the fictional characters



depicted on TV (Harrison, 1997), who have specific purposes and motives for watching television (Rubin, 1994), or who attribute greater realism to the portrayals of TV (Potter, 1986) are more likely to be affected by the content viewed.

A number of studies provide support for the constructivist view. Ward and Rivadeneyra (1999) examined the role of active involvement and perceived realism on 314 undergraduate college student's attitudes about sex. They found that being a more active television viewer and watching shows to learn about the world were each associated with a stronger endorsement of recreational attitudes toward sex. In addition, the more realistic participants perceived the storylines to be, the more sexually experienced they expected their peers to be. Although television exposure and perceived realism each contributed to the model, the most robust predictor of the sexual outcomes examined was viewer involvement. This study highlights the importance of considering amount of exposure to television but also viewer characteristics. Moreover, Taylor (2005) set out to examine whether perceiving television content as more realistic has an effect on the sexual attitudes and beliefs of 182 undergraduate students (ages 18-26). The researcher also examined whether delivering the sexual content verbally or visually affected the students' attitudes and beliefs. Students were exposed to one of three conditions: (1) visual or verbal sexual content, (2) neutral television, or (3) no television. Results indicated that students who scored highly on perceived realism and viewed sexual content on television reported more permissive sexual attitudes (i.e., measure comprised of the appropriateness of sexual intercourse on their first date, when casually dating, seriously dating, pre-engaged, and engaged) than students who were not exposed to sexual content. Likewise, those who rated the clips as more realistic and were exposed to sexual content verbally endorsed more permissive

sexual attitudes than students in the other two conditions. In addition, the author reported that men consistently reported more permissive attitudes than women.

The present study will be primarily guided by the cultivation and constructivist frameworks. Given my interest in television exposure, active involvement of the viewer, and perceived realism of television programming I expect that college students who spend more time watching television shows will most likely adopt the messages presented as their own, cultivating a new image of reality that is consistent with a risk-free sexual mentality. From a constructivist point of view, we learn that viewer participation and involvement in what they are seeing coupled with how real they believe the scenes in front of them seem to be are two important pieces to the link between media exposure and sexual behavior that merit exploration. Thus, using cultivation and constructivist theories as our foundation, this study will examine three aspects of television influence (i.e., exposure, involvement, perceived realism) that are likely to influence college students' risky sexual practices. Although plenty of evidence has been gathered pointing to a strong link between media exposure and sexual attitudes and behavior, the literature has not explicitly identified the mechanisms through which media affects sexual behavior.

### **Body Image and Gender Role Attitudes as Mediators**

**Body image.** One potential mediator is body image, which has been independently associated with media exposure and sexual behavior. Body image encompasses the general evaluations, thoughts, and behaviors individuals have regarding their bodies (Gillen, Lefkowitz, & Shearer, 2006). As physically-oriented domains of the self, body image and sexuality are closely linked. Sexuality encompasses the attitudes we have about, as well as actual involvement in, the physical expression of sexual feelings (Gillen, Lefkowitz, & Shearer, 2006). Sexuality

involves a degree of intimacy that includes exploration of bodies but most importantly potential judgment from sexual partners. In turn, attitudes about the physical body can affect a person's sense of confidence and security in sexual relationships, and their satisfaction with sexual experiences.

Two hypotheses have been generated to explain the association between body image and sexual behavior. One camp suggests that individuals with a poor body image are likely to avoid sexual contact entirely due to feelings of embarrassment or discomfort (Faith & Schare, 1993), while those highly satisfied with their appearance may engage in sexual risk taking more frequently because they enjoy displaying their bodies, or feel a sense of invincibility (Trapnell, Meston, & Gorzalka, 1997). The second camp proposes that individuals who are dissatisfied with their bodies are more likely to engage in risky sexual acts than more satisfied peers (Littleton, Breitkopf, & Berenson, 2005; Eisenberg, Neumark-Sztainer, & Lust, 2005). On the other hand, individuals with a more positive regard for their physical appearance may feel confident enough to be able to ask a partner to use condoms or avoid risky situations in general. This association may be moderated by gender (Gillen, Lefkowitz, & Shearer, 2006).

A number of studies offer support for the association between body dissatisfaction and sexual risk behaviors in females. For example, using a sample 3,637 women (mean age 28 years) Ackard, Kearney-Cooke, and Peterson (2000) found that women with negative views of their bodies report less sexual experience, less sexual satisfaction, and less comfort with various elements of sexual intimacy. Satisfaction with one's body may also play a role in an individual's sexual self-efficacy. For instance, Cash, Maikkula, and Yamamiya (2004) reported that in a sample of 145 women (median age of 21), those who were dissatisfied with their bodies were less comfortable and confident in sexual interactions, and were also more self-conscious about

their body during the act of sex. Furthermore, research has found that dissatisfaction with one's body has the potential to inhibit safe sex discussions between intimate partners. A study using a sample of 522 adolescent African American females (ages 14-18) found that adolescents who exhibited more dissatisfaction with their bodies were 2.1 times more likely to believe that they had fewer options for sexual partners, twice as likely to perceive themselves as having limited control in their sexual relationships, and 1.8 times more likely to fear the results of negotiating condom use (Wingood, DiClemente, Harrington, & Davies, 2002). Another study conducted by Littleton, Breitkopf, and Berenson (2005) examined the relationship between body image and risky sexual behaviors in a sample of 1,668 women, ages 12 to 56 (mean age = 25). The authors found that women who were ashamed of their appearance were more likely to practice inconsistent condom use and have multiple partners than women who were confident about their image. In addition, women who scored high on body surveillance or appearance investment (i.e., worrying about whether clothes look good) were more likely to engage in sexual activity after using alcohol or drugs. These results indicate that women who felt shame over their bodies and carefully monitored their appearance were more insecure in their relationships, affecting their level of self-confidence, and consequently predicting more sexual risk behaviors.

Moreover, Eisenberg, Neumark-Sztainer, and Lust (2005) conducted a study with 1,168 college students and found that poor body satisfaction in sexually active women, not males, was associated with having a casual partner and using no or unreliable contraception at the last sexual encounter. Gillen, Lefkowitz, and Shearer (2006) examined whether body image plays a role in college students' risky sexual attitudes and behavior. They gathered data from 434 college students aged 17 to 19 years and found evidence supporting a gender difference in risky sexual practices. Results indicated that males who were more oriented toward their appearance and

evaluated their appearance more favorably reported more lifetime sexual partners. In addition, females that regarded their appearance more positively (i.e., were more satisfied with their bodies) reported engaging in more protected sex in their lifetime. The opposite pattern was found for males: the more positive regard toward their appearance, the more unprotected sexual activity in their lifetime. Moreover, these males were more likely to doubt condoms' protection ability. Taken together these findings provide support for a strong link between body satisfaction and sexual risk behaviors, highlighting the importance of identifying factors that may influence body image and also considering how this link may be different for men and women.

The way an individual feels and appraises his or her body may also be related to other risk behaviors, such as alcohol use, that are in turn related to sexual risk behaviors. For example, Littleton, Breitkof, & Berenson (2005) identified that one way women cope with their negative perceptions and appraisals of their bodies is with the use of substances. Wild, Flisher, Bhana, & Lombard (2004) examined the relationship between body image and substance use using a sample of 939 youth and young adults (ages 12 to 24) and found that for females, but not males, low self-esteem regarding their body image was strongly associated with greater alcohol and drug use, as well as sexual risk behaviors (i.e., multiple partners and unprotected intercourse). Another study conducted by Nieri, Kulis, Keith, & Hurdle (2005) using a sample of 3,563 eighth grade students (mean age of 14), with the majority being Latino, found that more acculturated Latino youth with poorer evaluations of their bodies had the greatest risk for substance abuse (i.e., alcohol, marihuana, cigarettes). As noted previously, numerous researchers have also found a link between alcohol use and sexual risk behaviors (Cooper, 2002; Cooper, Peirce, & Huselid, 1994; Justus, Finn, & Steinmetz, 2000; Wingood & DiClemente, 1998). For example, one study conducted with a large sample of 7,441 individuals (ages 14-22) found that using alcohol or

drugs during the last intercourse was associated with having multiple partners and having unprotected sex within the past 30 days (Santelli, Robin, Brener, & Lowry, 2001). Overall, findings reveal that lower body satisfaction is linked to risk behaviors, including substance use, multiple sexual partners, and inconsistent condom usage during sexual acts.

The media is notoriously known for depicting largely unattainable standards of weight and beauty in their portrayals. Given the elevated amounts of media young adults consume each day it is not surprising that the development and maintenance of a positive body image becomes a daunting and challenging task for most. Just as television portrayals play a role in sexual attitudes and behaviors, watching television has also been implicated in the viewer's evaluations about their physical appearance. The media is the mastermind behind spreading and transmitting the thinness-oriented norms we value as a society (Thompson & Heinberg, 1999). What results is the internalization of the thin-ideal which reflects the extent that individuals accept socially-defined standards of beauty.

There has been vast support for the association between television exposure and negative body image (Botta, 2000; Dohnt & Tiggemann, 2006; Grabe, Ward, & Shibley-Hyde, 2008; Hargreaves & Tiggemann, 2003; Tiggemann, 2005a). For instance, in 2002 Groesz, Levine, and Murnen conducted a meta-analysis of 25 controlled experiments and found a modest yet consistent relationship between viewing images of thin models and lower body satisfaction among females. The effect was greater for participants younger than 19 and those who initially had lower body satisfaction. In another study, women exposed to appearance-related commercials (i.e., depicting women as sex objects) expressed greater anxiety and reported lower body satisfaction than women who were exposed to neutral commercials (Hargreaves & Tiggemann, 2002). In a study focusing on Latino youth, Rivadeneyra, Ward, and Gordon (2007)

found that the frequent exposure of media that depicted mainly Caucasian models and an unattainable thin-ideal for women and a tall, muscular ideal for men was associated with higher levels of body dissatisfaction. Other studies have found similar associations, in that television viewing, especially programming portraying the thin-ideal, is positively correlated with body dissatisfaction (Anderson, Huston, Schmitt, Linebarger, & Wright, 2001; Hargreaves & Tiggemann, 2003; Harrison, 2000; Harrison & Cantor, 1997).

Moreover, evidence suggests a negative association between television viewing and people's perceptions of their weight (McCreary & Sadava, 1999). Television's failure to show the full range of weights found in real life may be cultivating unrealistic body images in frequent viewers. This unrealistic social standard of thinness is also linked to self-control and success (Harrison & Cantor, 1997). The expectation is that once the ideal is met it will lead to a more successful and happy life. It has also been suggested that the more attractive an observer finds a media model, the more the observer will strive to emulate that model (Harrison, 1997). Social Learning Theory (Bandura, 1977) proposes that individuals observe, learn, and model what they see on screen because it is rewarding to them. Thus according to this theory, individuals acquire the thin-ideal through repeated exposure to attractive social agents in the media.

Most of the research in this area focuses on young women because they exhibit higher rates of body dissatisfaction and eating disorders than do young men (Cohen, 2006). In addition, television is dominated by the thin ideal of feminine beauty, where underweight women are overrepresented in comparison to the general population (Roberts, Henriksen, & Foehr, 2004). Nevertheless, a classic study in the media literature illustrates how male body-ideals have also changed considerably over time. Pope, Olivardia, Gruber, and Borowiecki (1999) recorded the body measurements of various action figures sold to boys from 1964 through 1998 and looked at

how much the dolls changed over time. The authors found that the doll's bodies became markedly bulkier and taller over time by the addition of large muscles. Not surprisingly, Tiggemann (2005) found that high school females scored higher on drive for thinness measures, while males scored higher on drive for muscularity measures. The author also found that males tend to watch television for its entertainment value while females tend to watch for social learning purposes. Thus, gender might moderate the relationship between television viewing and its outcomes, given the proposition that men and women experience television differently.

Research on media exposure and body image has also examined the role of body size. A systematic review of the literature conducted by Nunez-Smith, et al. in 2008 found that of the studies examined 86% of them reported a significant relationship between media exposure and body mass index (BMI), with the more hours spent watching television, the higher the indexes. Furthermore, 82% of longitudinal studies conducted in the past 25 years reveal that amount of television viewing predict increased weight over time. The association between TV viewing amounts and weight seems to start early. One study found that children who watch more than 8 hours of television per week at age three were significantly more likely to be obese (BMI > 30) at age seven (Reilly, et al. 2005). Thus, watching more television has a significant effect on our body size. This relationship, in turn, may lead to higher levels of body dissatisfaction. For example, a number of studies indicate that body size is positively correlated with body dissatisfaction – that is, the higher the respondent's body mass index (BMI), the higher the reported body dissatisfaction (Dalley, Buunk, & Umit, 2009; Hofschire & Greenberg, 2002; Watkins, Christie, & Chally, 2008). Extending these results to sexuality research, one study with 985 undergraduate participants (with two thirds aged 18-22 years old) examined the relationship between body mass index and sexual risk behavior (Eisenberg, Neumark-Sztainer & Lust, 2005).



They reported a positive association between higher indexes and having more casual sex partners and being intoxicated at the most recent sexual intercourse for women participants, but no association was found for men. Lastly, Gillen, Lefkowitz, and Shearer (2006) found a significant association between body size and knowledge about sexual risk in college students (ages 17-19). In their study, undergraduates with lower BMIs were more likely to believe condoms were efficacious in preventing pregnancy and protecting against sexually transmitted diseases.

**Gender Role Attitudes.** In addition to body image as a potential mediator, this study explores whether holding traditional gender role attitudes also mediates the relationship between media exposure and sexual behavior. Although gender roles have been independently associated with sexual behavior and television exposure, to date no research has examined whether gender roles mediate the relationship between television exposure and sexual risk behaviors.

The link between gender roles and sexual attitudes and behaviors has been well established in the literature. Experts in this area propose that gender roles contribute to the emergence of “sexual scripts” that prescribe what the appropriate interactions should be between heterosexual couples in sexual settings (Noar & Morokoff, 2002). On the one hand, men shall be tough, dominant, and aggressive in sexual encounters, while women should adhere to a more submissive and acquiescent role, leaving important critical sexual decisions up to their partners. Thus, traditional gender roles reflect current social norms that provide men more power than women. Given this discrepancy between genders and the internalization of social norms that dictate inequality, research has centered on how traditional gender roles relate to risky sexual practices.

A seminal study in this literature conducted by Pleck, Sonenstein and Ku in 1993 sought to examine the relationship between masculinity ideology (i.e., avoiding femininity, achieving

status, being independent, and aggressive) and sexual attitudes and behaviors. Using a large national sample of over 1,000 sexually active adolescent males aged 15-19, researchers found that higher endorsements of masculinity ideology was related to more sexual partners in the past year, more negative attitudes about condoms, less belief in male responsibility to prevent pregnancy, and less consistent use of condoms. A more recent study set out to replicate these findings using a college student population. Noar and Morokoff (2002) examined the relationship between masculinity ideology, condom attitudes and condom use using a sample of 272 sexually active college males. In accordance with Pleck, et al.'s findings, they found that higher levels of masculinity ideology were associated with more negative attitudes about condoms. In turn, more negative condom attitudes were related to a decreased readiness to use condoms consistently. Furthermore, those who scored high on masculinity ideology reported having sex for the first time at an earlier age than those with lower scores. In addition, those who reported higher levels of "toughness" also indicated having more lifetime sexual partners than those with lower levels of the same trait.

Further evidence supports the link between conforming to traditional gender roles and sexual practices. Lucke (1998) found that women who reported multiple partners within the past year also reported more masculine personality traits and more egalitarian attitudes toward the role of women in sexual situations. Shearer, Hosterman, Gillen, and Lefkowitz (2005) examined whether traditional gender-related attitudes toward the family and masculinity ideology were associated with risky sexual behaviors and condom-related beliefs. Two-hundred and twenty college students completed a survey regarding their sexual history, condom usage and self-efficacy, attitudes about condoms, gender-related attitudes and masculinity ideology. Findings reveal that for men, endorsing more anti-femininity norms (i.e., not showing stereotypical

feminine qualities and behaviors) was related to having had unprotected sex in their lifetime. Contrary to expectations and previous work, men who strived to achieve higher status had a lower likelihood of ever having unprotected sex. No significant predictions were found for women with regards to masculinity ideology. For women, holding more traditional marital role attitudes was related to perceiving more barriers to condom use. For both genders, conforming to more traditional marital and childrearing role attitudes resulted in having lower expectancies for enjoying sex while using condoms. In sum, the literature supports the link between traditional gender role attitudes and sexual risk behaviors.

Social norms and gender-specific roles in sexual interactions are likely acquired through social learning processes from parents, peers, and even the media (Epstein & Ward, 2008). Although not extensive, research findings point to a link between television exposure and the formation and maintenance of traditional gender role attitudes in sexual encounters. For instance, Zurbriggen and Morgan (2006) concluded that consuming a heavier diet of reality dating programs was associated with more traditional and adversarial attitudes toward dating and relationships for college students. Thus, watching these programs reflected the students' endorsement of the sexual double standard: the belief that men and women are inherently in opposition with one another, and that men are sex-driven. Moreover, Ward and Friedman (2006) presented evidence from 244 college students that indicated a significant correlation between frequent viewing of primetime television with a high dose of sexual content and stronger support of recreational sex and endorsement of stereotypical gender roles (i.e., women as sexual objects, men as players).

Media that increasingly devalues non-perfect bodies may be an important catalyst in fueling body dissatisfaction (sometimes to disordered levels) by the adoption of traditional

gender roles and this in turn may be related to sexual risk behaviors. Stice (1994) found that media exposure was indirectly related to eating disorders through endorsement of traditional gender roles, internalization of the thin-ideal body stereotype, and body dissatisfaction. Another study set out to examine whether traditional gender role beliefs (i.e., female must be thin in order to be attractive to men) would mediate the relationship between media exposure and body dissatisfaction (Eggermont, Beullens, & Van den Bulck, 2005). Their findings are consistent with Stice's model in that persistent social messages about the importance of being thin lead to the internalization of this belief as the ultimate goal. Thus, the discrepancy between one's own body and the valued thin-ideal is associated with body dissatisfaction and traditional gender role beliefs which may be key ingredients for sexual risk behaviors. Gillen and Lefkowitz (2006) found that poorer body image is associated with conforming to more traditional gendered behavior in sexual situations. For men, positive feelings about the body may boost their confidence in sexual situations, fulfilling the traditional masculine ideal as a sexual risk taker and decision maker (Shearer, Hosterman, Gillen, & Lefkowitz, 2005). Assuming this power role, traditionally held by men, in sexual relationships increases the likelihood of multiple sex partners and decreases the use of condoms. For women, an inverse relationship has been found: the more positive their views are about their bodies the more confident they feel in refraining from risky sexual behavior. Consistent with this Shearer and colleagues, having a more positive body image has been linked to assertiveness and higher self-esteem in females (Wiederman, 2000). Thus, women who are highly satisfied with their bodies feel confident enough to limit their sexual partners (especially casual ones) and to insist on using a condom with a partner countering the traditional submissive role of women in sexual relationships.

In sum, gender role attitudes have been linked to a higher consumption of television programming depicting sexual content and the sexual double standard. In addition, holding more traditional gender role attitudes are related to sexual risk behaviors. Bridging these two areas of research, this study proposes that gender role might be a useful mediator that explains the link between television exposure and sexual behavior.

### **Present Study**

The literature consistently finds strong associations between television exposure and sexual risk behaviors. In general, individuals who spend more time watching television, are more involved in what they see, and perceive it as “real” are more likely to engage in high risk sexual behaviors. Television exposure has also been associated with psychosocial factors such as body image and gender role attitudes, in that the more sexual content experienced on television the more body dissatisfaction and less flexible gender role attitudes. Being dissatisfied with one’s body and holding more traditional gender role attitudes, in turn, have been strongly associated with sexual risk behaviors. One important aspect the literature has failed to identify is the processes or mechanisms by which television exposure is related to sexual risk. Given its association with both television exposure and sexual risk behaviors, body image and gender role attitudes may be two potential mediators that drive this relationship. Studies have also neglected to use a diverse sample in terms of age. Research on television’s influence have traditionally focused on children and adolescents given their formative developmental stage, however, more research should be conducted with young adults to better understand how television programming may affect their sexual attitudes and behaviors. To address this gap in the research and contribute to the literature with young adults, the present study investigated the relationship between television viewing, body image, gender role attitudes, and sexual behaviors among

college students. To my knowledge, no research has examined body image and gender role attitudes as mediators of television influence and sexual behavior. Aside from examining exposure or frequency of television viewing, I considered other aspects of television influence, including viewer's active involvement and perceived realism. Thus, with this study I explored how three television influence variables (exposure, perceived realism, and active viewing) are related to body satisfaction and gender role attitudes respectively, and subsequently to sexual risk behaviors. In this study, sexual risk behavior was measured by the student's reported condom use.

**Specific Aim 1: Examine the relationship between television influences and sexual risk behavior.**

*Hypothesis 1.* There will be a significant positive relationship between television influence (active viewing, perceived realism, exposure) and sexual risk, such that viewers who feel more connected with the material presented on television and who are more involved in the viewing experience, perceive their television viewing as more real, and watched more television on a daily basis will be less likely to use condoms.

**Specific Aim 2: Determine whether body image and gender role attitudes are significantly correlated with sexual risk behavior, respectively.**

*Hypothesis 2.* Body satisfaction will be significantly related to condom use, however this association will be moderated by gender. It is expected that males who are more satisfied with their physical appearance will be more likely to use less condoms, while females who are more satisfied with their bodies will report more condom use.

**Hypothesis 3.** Gender role attitudes will be positively correlated with sexual risk behavior. That is, students holding more traditional gender role attitudes will be more likely to report less condom use.

**Specific Aim 3: Examine the mediating role of body image and gender role attitudes on the relationship between television influences and sexual risk behavior.**

**Hypothesis 4.** The relationship between media influences and condom use will be mediated by body satisfaction and gender role attitudes, respectively.

For body image, I expect that for females as television influence increases, body satisfaction decreases, and condom use is likely to decrease. For males no specific hypothesis is being made regarding the relationship between television influence and body satisfaction, however the opposite association is hypothesized for condom use, in that as body satisfaction increases, condom use is likely to decrease.

For gender role attitudes, I expect that those students that are actively involved in what they see on television, perceive it as more real, and spend more time watching television in general will hold more traditional gender role attitudes and thus engage in less protected sex.

## **Method**

### **Research Design**

The present study was cross-sectional in nature and utilized survey data to examine the relationship between television exposure, body image, gender role attitudes, and sexual risk behavior. This was accomplished through the use of questionnaires that were administered to the participants at one point in time.

## **Participants**

Six hundred undergraduate psychology students from Virginia Commonwealth University (VCU) took part in the study during the fall 2009 and spring 2010 semesters. Undergraduates were recruited for participation in this study from Psychology 101 classes. There is a four-hour research experience requirement for students enrolled in introductory psychology classes. The University provides different ways students can fulfill this requirement, including participating in research studies, attending colloquia (when available), or reading and answering questions about brief research articles provided online. Participating in a one-hour experiment, attending one hour-long colloquium, or completing one research article is equivalent to one hour of research experience. These alternative methods of meeting the research experience requirement ensure that students are not coerced into participating in research projects. According to the Department of Psychology at VCU, in the 2006-07 academic year there were 3,077 students in PSYC 101, and 2,138 (69%) of them participated in research studies, suggesting that students are not coerced into participating in research projects, and their participation is voluntarily.

Out of the 600 participants enrolled in the study, 10 participants withdrew their participation before completing the questionnaires. Students under the age of 18 years are not considered consenting adults, therefore they were not allowed to participate in the study. To restrict the sample to young adults, participants over 25 years were excluded from analyses. Seventy-six participants were excluded from the study because they did not meet the age inclusion criteria of 18-25 years. Furthermore, 181 participants were also excluded from the analyses because they reported not having sexual intercourse in the past three months (33.5%) or chose not to answer the question regarding sexual intercourse in the past 3 months (2.9%). Data



from four outliers were also excluded from analyses. In addition, all responders who completed the survey in less than 30 minutes ( $n = 25$ ) were excluded from analyses, as pilot testing indicated that it was unlikely that anyone could complete the entire survey so quickly having thoughtfully considered their answers to each question. The average time it took participants to complete the online survey was 56 minutes ( $SD = 19.4$ ). No one was excluded based on race, ethnicity, gender, or sexual orientation; however, only data from sexually active students was analyzed for this study.

The final sample was comprised of 304 participants, of which 218 (73.2%) were female, the average age was 19.35 years ( $SD = 1.55$ ), and 64% described their racial/ethnic background as White. Forty-seven percent of the sample reported their religious affiliation as Protestant Christian, 59.3% reported being in their first year at VCU, 94% reported their marital status as single, and 68.7% reported being involved in a romantic relationship. See Table 1 for detailed socio-demographic data for the sample.

Table 1.

*Sample characteristics.*

		%	<i>N</i>
Gender	Male	26.8	80
	Female	73.2	218
Race/Ethnicity	White	64	190
	African American	17.5	52
	Asian	9.1	27
	Hispanic	3.7	11
	Native American	0.3	1
	Other	5.4	16
Year in School	Freshmen	59.3	176
	Sophomore	18.9	56
	Junior	14.1	42
	Senior	6.7	20
	Other	1.0	3
Marital Status	Single, never been married	94	282
	Married	2.3	7
	Living as married	2.3	7
	Divorced	0.3	1
	Other	1.0	3
Relationship Status	Yes	70.2	210
	No	29.8	89
Religious Affiliation	Protestant or Other Christian	47.5	143
	Catholic	20.3	61
	Jewish	0.9	3
	Buddhist	1.3	4
	Hindu	0.7	2
	Muslim	2.0	6
	No religious background	20.3	61
Other	7.0	21	

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Age [Mean (*SD*)]      19.36 (*1.55*)

*Note.* *N* ranged from 297 to 301 due to missing data.

The proportion of men to women reflected the composition of the VCU undergraduate population. Participants were also similarly represented based on age, race, and ethnicity.

Previous studies using the Psychology 101 pool at VCU report that the mean age of students is 19 years, most of them are freshmen (69%), over half of students identify themselves as White (53%) followed by African American (25%), and about 70% are female (Green, Burnette, & Davis, 2008). In another study conducted with 200 female students in the Psychology 101 pool, the researchers found that 74% were sexually active, 25% reported not being sexually active, and 1% declined to answer the question (Shook & Hood, 2009).

### **Procedure**

Undergraduates completed the questionnaires anonymously through the use of an online survey tool called SONA, which can be accessed from any computer with an internet connection. The study was listed with other studies currently being conducted in the Department of Psychology on the SONA system. SONA is a secure website and only students who have registered in VCU psychology courses have access to it. Participants read a consent form that explained the procedures of the study and their rights as a participant. Participants indicated their consent to participate in the study by clicking the “agree” button on the website. After completing the questionnaires, participants were automatically granted one research participation credit to compensate them for their time.

### **Measures**

**Demographics.** Participants were asked to provide demographic information, including age, gender, race/ethnicity, religious affiliation, and relationship status.

**Television influences.** To examine the relationship between television influences and body satisfaction, gender roles, and condom use, three measures of television viewing were administered. These measures include frequency of viewing, general involvement, and perceived realism of television.

**TV exposure.** To determine exposure to television programming, participants were asked "On average, how many hours a *day* do you spend watching television." Calculating the frequency with which participants watch television – that is how many hours they spend watching television daily is a common strategy used throughout the media literature (Rivadeneira, 2006; Roberts, 2000). Furthermore, participants reported on their top three favorite television shows. These shows were then categorized by genre. Genre classifications included: (1) animation, (2) comedy, (3) drama, (4) reality, (5) sports, (6) music, (7) news, (8) other.

**Active viewing.** Ward and Rivadeneira (1999) developed the Active Viewing Measure (AVM), an instrument that taps into how active or passive each participant is as a television viewer. AVM is based on previous work by Levy (1983) and Rubin and Perse (1987) that describes three types of audience motives for watching television: (1) *selectivity in exposure-seeking*, refers to the degree to which viewers intend to enter the communication setting, (2) *involvement during-exposure*, reflecting the extent to which viewers attend to or engage in information processing of the communication presented, and (3) *post-exposure usage*, meaning the degree to which viewers adopt the messages acquired and use them in their social life. The measure is composed of 34 items that are rated on a 6-point scale ranging from *not at all like me* to *very much like me*. Items include: "I often plan my day around the TV shows I like to watch" (selectivity in exposure-seeking), "I often try to guess what will happen next or how an episode will end" (involvement during exposure), and "I frequently talk to others about what I have recently seen on TV shows" (post-exposure usage). Using a sample of college students, the internal reliability coefficient was .91 for the composite measure that includes all three subscales (Ward & Rivadeneira). Items on the scale were summed and averaged to produce an active

viewing total score with higher scores indicating higher involvement. For this study, reliability coefficient alpha for the overall measure was .89.

**Perceived realism.** Participants completed the Perceived Realism on Television Scale, a 28-item scale that asks specific questions about participant's views of the realism of television, its characters, and its story lines (Ward & Rivadeneyra, 1999; Rivadeneyra & Ward, 2005). Participants were asked to rate how strongly they agree with statements such as "TV helps me understand some of the problems other people have" and "People on TV have realistic jobs for their level of education and experience", using a 5-point scale ranging from *strongly disagree* to *strongly agree*. Items on the scale were summed and averaged to generate a total perceived realism score with higher scores indicating higher perceived realism. The internal consistency coefficient for the Perceived Realism Scale reported by the authors is  $\alpha = .88$  (Rivadeneyra, 2006). The reliability coefficient alpha for the Perceived Realism Scale in this study was also .88.

**Body image.** Two subscales from the Eating Disorders Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994) were administered to participants to assess body satisfaction. The EDE-Q is a self-report version of the Eating Disorders Examination interview. Four subscales (restraint, eating concern, weight concern, and shape concern) may be derived from the instrument, together with a global score. Participants in this study were asked to think about how concerned they were about their weight and shape over the past 28 days. Thus, only the weight and shape concerns subscales were used in the present study to measure body satisfaction. The weight concerns subscale is comprised of 5 items, while the shape concerns subscale is comprised of 8 items. Five items are rated on a six-point scale, where 0 = *no days*, 1 = *1–5 days*, 2 = *6–12 days*, 3 = *13–15 days*, 4 = *16–22 days*, 5 = *23–27 days*, and 6 = *every day*. The

remaining items are rated on a six-point Likert scale, where 0 = *not at all*, 2 = *slightly*, 4 = *moderately*, and 6 = *markedly*. Sample questions include: “On how many of the 28 past days have you felt fat?” (shape concern), and “Over the past 28 days, how dissatisfied have you been with your weight? (weight concern)” In common with the other subscales (and the global score), the subscales score is the mean of the items rated. Higher numbers indicate more shape and weight concerns. High internal consistency coefficients have been reported for the EDE-Q, for a Cronbach’s alpha of .89 to .92 (Elder & Grilo, 2007, Fairburn, 2008). For this study, the alpha coefficient for the weight concern subscale was .91, and .84 for the shape concern subscale.

Body size, or body composition, has also been identified as a predictor of body satisfaction. This variable was measured by calculating participants' Body Mass Index (BMI) using their reported weight and height. The following formula was used to calculate the BMI of each participant:  $\text{weight (lb)} / [\text{height (in)}]^2 \times 703$  (CDC, 2009a). Generally, a BMI below 18.5 is considered underweight; normal weight ranges fall between indices of 19 and 24; and a score of 25 or above is considered overweight. Using these guidelines, three categories were created classifying participants according to their BMI (i.e., below, normal, and above).

**Self esteem.** The concept of self esteem was measured with the Rosenberg Self Esteem Scale (RSE; Rosenberg, 1965). Students rated the 10-item measure along a 4-point scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). Items were summed to arrive at a total score, with higher scores reflecting greater self-esteem. Items include "On the whole, I am satisfied with myself" and "I feel do not have much to be proud of". Previous use of this scale with female college students indicate good reliability with an alpha scores of .88 (Tylka & Sabik, 2010). For this study, the alpha coefficient was .89.

**Gender role attitudes.** The Attitudes toward Family Role Scale (ATFRS; Hoffmann & Kloska, 1995) was administered to measure student's gender related attitudes toward marriage and childrearing. The 13-item measure consists of two subscales that assess attitudes toward traditional marital roles (Marital Role Subscale; 6 items) and childrearing roles (Childrearing Roles Subscale; 7 items). Participants rated each item using a four-point Likert scale (1 = *strongly disagree* to 4 = *strongly agree*). Items include "By and large, a husband must have more say-so in a marriage than a wife should" (marital role subscale), and "For a woman, taking care of the children is the main thing, but for a man, his job is" (childrearing roles subscale). Previous work with college students indicate good internal consistency for both subscales; .75 for the marital role subscale, and .91 for the childrearing role subscale (Shearer, Hosterman, Gillen, & Lefkowitz, 2005). For this study, the alpha coefficient for the marital role scale was .89, while the alpha coefficient for the childrearing role scale was .76. Overall, the scale demonstrated good internal consistency ( $\alpha = .90$ ). In order to achieve a total score, items were summed with higher scores reflecting more traditional attitudes toward family role or more gender stereotyping.

**Condom use.** Condom use was assessed using two items: The first item was: "During the past three months, how often did you use condoms when you had sexual intercourse?" Participants rated this question on a five-point Likert scale (1 = *Always (used a condom)* to 5 = *Never (used a condom)*). Higher numbers indicated less condom use. Three participants were not included in analyses because they provided discrepant responses on their sexual behavior. For example, one participant answered "one person" to the question: "During the past three months, with how many people did you have sexual intercourse?" but then answered "not at all (zero times)" to the question: "During the past three months, how many times did you have

sexual intercourse”. Of the three participants to be cut from analyses for this reason, two had already been excluded, leaving one case to be deleted.

The second item used for the analysis was: “The last time you had sexual intercourse, what method(s) did you or your partner use to protect yourself from a sexually transmitted disease, such as HIV?” Participants were allowed to check all that applied from a list of 8 responses. Responses included: “no method was used for protection”, “birth control pills”, “condoms”, “depo-provera (injectable birth control)”, “withdrawal”, “some other method”, or “not sure”. Participants who checked condoms in their responses were classified as having used condoms in their last sexual encounter. Those who checked other responses, not including condoms, were categorized as not having used condoms. Responses were dummy coded and a value of 1 was assigned to students who reported using a condom in their last sexual encounter whereas students reporting no condom use were assigned a value of 0. Therefore, two outcome variables were used for the analysis: (1) a continuous variable assessing frequency of condom use over the past three months, and (2) a dichotomous variable representing condom use at last sexual encounter.

### **Data Analysis**

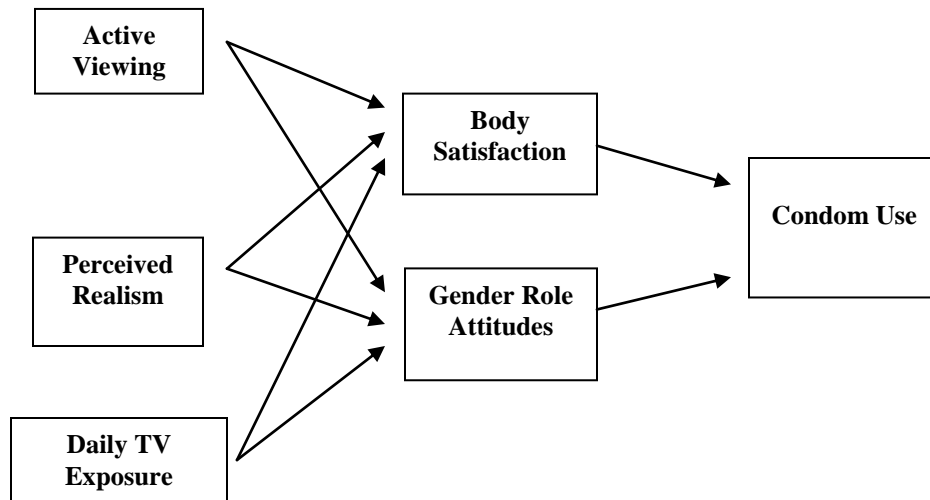
First, the assumptions of normality, outliers, multicollinearity and missing values were examined using PASW v. 18 statistical package. Second, correlations among all study variables, including demographic variables (e.g., gender, race/ethnicity, and relationship status), were calculated. Demographic variables that were significantly related to the variables of interest were controlled for in analyses. Third, mediation was tested using path analysis within the framework of structural equation modeling (SEM) with Mplus v.5 statistical software (Muthén & Muthén, 2007).



As previously stated, analyses to test mediation were conducted using structural equation modeling (SEM) to examine the underlying mechanisms (body satisfaction and gender role attitudes) that are hypothesized to mediate the relationship between the independent variable, television influence, and the dependent variable, condom use. The first mediator, body satisfaction, was defined by two scales (shape concerns and weight concerns), while the second hypothesized mediator, gender role attitudes, was defined by one measure comprised of two subscales (marital and childrearing role scales). Mediation was then evaluated using four guidelines developed by Baron and Kenny (1986). First, a significant relation must exist between the independent variable, television influence, and the dependent variable, condom use, in order to demonstrate that television has an effect on condom use. Second, a significant relation must exist between television influence and each mediating variable (body satisfaction and gender role attitudes). If significance is supported this shows that television has an impact on the mediating variables in the model. Next, when television influence is accounted or controlled for in the analysis, each mediating variable must be significantly related to the dependent variable. If this relation does not exist, the mediator does not carry the effects of television influence to condom use. Finally, after adjusting for each mediator in the model, the relation between television influence and condom use should not be significant.

The model in the present study used path coefficients to examine the extent to which the relation between television influence and condom use is explained by body satisfaction and gender role attitudes. Path coefficients reflect the size of the relation between variables, and a mediator pathway is determined by calculating the product of the path coefficients in the “chain of mediation” (MacKinnon, 2008, p. 30). The size of the mediated effect for each mediator variable reflects how a 1 unit of change in television influence as measured by daily television

exposure, active viewing, and perceived realism affects young adults condom use indirectly through each mediating variable (MacKinnon, 2008). Path diagrams that represent the hypothesized relations are depicted in Figure 1. The SEM model controlled for the effects of gender, ethnicity/race, and relationship status on condom use.



*Figure 1.* Paths between television influence and condom use, with body satisfaction and gender role attitudes as potential mediators of the relationship.

## Results

### Statistical Assumptions

The dataset was reviewed for missing data, outliers, multicollinearity, and normality. Missing values for the variables of interest ranged from 0 to 16%. Nine participants (2.9%) were missing data on hours spent watching television each day, 2 participants (0.6%) had missing data on active viewing of television, and 8 participants (2.6%) had missing data on perceived realism of television. Two participants (0.7%) were missing data on the weight concern subscale of the EDEQ and only one participant (0.3%) had missing data on the shape concern subscale of the EDEQ. For the outcome measures, three participants (1.0%) had missing data on reports of their use of condoms on their last sexual encounter, while 49 participants (16%) were missing data on

frequency of condom use in the past 3 months. Most variables had 3% or less missing values which is considered adequate; however, a higher proportion of data values for condom use over the past three months were missing. Fortunately, Mplus (Múthen & Múthen, 2007) corrects for missing data by using the Full Information Maximum Likelihood (FIML) technique. This procedure uses all cases within a dataset, including missing data. This method reduces potential biases associated with having missing data and ensures that estimates are fairly accurate despite missing data. Furthermore, Cheung (2007) suggests that when less than 50% of the overall data is missing at random, the parameter estimates and their standard errors can be considered to be unbiased.

To check for outliers, z-score transformations were performed for all variables. Three variables had participants whose z-scores were above 3.29 standard deviations from the mean. Four participants (1.2%; z-scores included 3.64, 4.77, 8.55) had standard scores above the cutoff for daily television exposure, three participant's scores (.9%; z-scores included 3.69, 3.88, 4.27) were above the cutoff for gender role attitudes, and for one participant (.3%; z-score = 3.48) the z-score was above the cutoff for perceived realism of television. Tabachnick and Fidell (2007) suggest that cases with z-scores in excess of 3.29 are potential outliers; however they warn that in large samples it is expected to have few standardized scores above the cutoff. Based on these recommendations, a decision was made to exclude the four outlier scores for daily television exposure, especially since these participants reported watching more than 12 hours of television per day, with one participant providing an invalid response of 25 hours a day. Given the few scores above 3.29 on the rest of the measures, no other cases were excluded on the basis of outliers.

Inter-correlations among all variables were performed to check for multicollinearity.

Among the eight variables of interest, only one correlation coefficient was above .90. The weight and shape concern subscale from the EDE-Q were significantly correlated with each other ( $r = .95, p < .001$ ). Given the high correlation between these subscales, analyses were conducted in two ways: first, a latent variable named “body satisfaction” was constructed using both subscales, and second, both subscales were used separately. The rest of the variables were independent of each other with no notable overlap or redundancy found among them.

Lastly, to determine whether the variables were normally distributed, descriptive statistics including skewness and kurtosis were calculated for all continuous variables. All variables of interest except daily television exposure were in the normal range, with skewness and kurtosis scores below or slightly above the absolute value of 1. Daily television viewing was positively skewed as expected. Most participants watched on average 2-3 hours of television a day. This is not surprising considering the sample of mainly freshmen undergraduate students who have busy class schedules and perhaps live in a university dormitory where access to television sets might be limited. No transformations were made.

### **Descriptive Statistics**

The means and standard deviations for all independent and mediator variables analyzed in the present study are presented in Table 2. On average, participants indicated watching approximately two hours of television per day, showed little involvement in their television viewing with the average response being '*more not like me than like me*', and reported disagreeing with statements that portrayed television as real "*more often than not*". In addition, participants appeared to adhere to attitudes that endorse less gender stereotyping, when considering the range of potential scores for the gender role attitudes measure being 13 to 52. In regards to body image, participants in the study seemed generally satisfied with their bodies, and

the average body mass index for the sample was in the normal range. Lastly, on average participants tended to report higher levels of self-esteem.

Table 2.

*Means and standard deviations for all predictor variables.*

Scale	Mean	SD	N
Daily Television Exposure	2.16	1.99	295
Active Viewing	3.30	0.71	302
Perceived Realism	2.62	0.42	296
Attitudes toward Family Role	21.72	6.19	304
Body Mass Index	23.4	4.17	272
Weight Concern	2.29	1.34	302
Shape Concern	2.53	1.45	303
Self-esteem	20.60	5.47	303

*Note.* N ranged from 272 to 304 due to missing data.

Participants also reported on their top three favorite shows. Table 3 presents the five most common shows for the overall sample as well as the overall genres represented in the reported shows. The top five shows were calculated by drawing frequencies on the most common shows reported across all three favorite choices. A total of 260 different television shows were reported. The majority of participants endorsed watching dramas, followed by comedies and reality television. Descriptive statistics were also performed by gender, and results revealed that the top three shows watched by males were: The Office, Family Guy, and House, while for females the top three shows were: Grey's Anatomy, The Office, and Gossip Girl.

Table 3.

*Favorite television shows and genres.*

	%	<i>N</i>
Top five shows <sup>a</sup>		
1. The Office	17	44
2. House	15	40
3. Family Guy	13	35
4. Grey's Anatomy	12	32
5. Gossip Girl	9	24
Genres <sup>b</sup>		
Animation	2.9	24
Comedy	29.1	237
Drama	39	317
Music	0.7	6
News	0.9	7
Reality	20.2	165
Sports	3.2	26
Other	4.0	32

*Note.* <sup>a</sup>Percentages for the top five shows were calculated in reference to the 260 different television shows reported by participants. <sup>b</sup>Percentages for the different genres are based on an *N* of 814 genre classifications that were made according to each television show reported regardless of position (i.e., top, second, third favorite).

Condom use, the primary outcome variable for this study, was measured in two ways: frequency of use over the past three months and whether or not they used condoms during their last sexual encounter. Table 4 presents participants' responses to how often they used a condom over the past three months. Descriptive statistics indicated that a little over half of participants reported *not* using condoms consistently over the past three months (62.4%), while 37.6% reported *always* using a condom when they engaged in sexual intercourse during this time-frame. Moreover, frequency of condom use was assessed for participants' last sexual encounter. Fifty-four percent of participants (*N* = 161) reported using a condom the last time they engaged in sexual intercourse, while 46% (*N* = 140) indicated not using a condom during their last sexual experience.

Table 4.

*Condom use over the past three months.*

	%	N
Always (used a condom)	37.7	96
More than half the time	22.8	58
About half the time	8.2	21
Less than half the time	18.0	46
Never (used a condom)	13.3	34

*Note:* Total N is 255 due to missing data.

In addition to obtaining information on condom use over the past three months, participants also provided information regarding other sexual risk behaviors beside condom use.

Table 5 presents the frequency regarding how many sexual partners participants had during the past three months and how many times they engaged in sexual relations in the past three months.

Table 5.

*Number of partners and frequency of sexual intercourse during the past three months.*

	%	N
Number of partners:		
1 partner	67.2	119
2-3 partners	28.2	50
4-5 partners	2.3	4
6 or more partners	2.3	4
Frequency of sexual intercourse past three months:		
1 time	6.2	19
2 times	7.2	22
3-5 times	15.8	48
6-10 times	17.8	54
11-20 times	19.7	60
More than 20 times	33.2	101

*Note:* N ranged 177 and 304 due to missing data.

Condom usage was also analyzed by gender. Approximately half of male participants reported *always* using a condom over the past three months (51%), compared to 32% of female participants. Forty-nine percent of males and 68% of females reported *not always* using a condom while engaging in sexual activity within the past three months. Regarding their last

sexual encounter, more than half of both males and females reported using a condom (males = 62%; females = 51%).

### **Socio-demographic Influences**

Additional analyses were performed to examine socio-demographic differences in our variables. Independent sample T-tests were conducted for each predictor and outcome variable using semester recruited (fall vs. spring), gender (male vs. female), race/ethnicity (minority vs. non-minority), and romantic relationship status (yes vs. no) as the basis for comparison. Several key finds are worth noting. Table 6 presents the means, standard deviations, and inferential statistics for each significant difference among the predictors and outcome variables of the study.

Concerning seasonal differences, results indicated that there was a significant difference between students who completed the survey in the fall semester compared to those completing it in the spring semester for perceived realism of television. That is, students who completed the survey in the fall semester were more likely to perceive television as resembling reality than students in the spring semester. No significant seasonal differences were found in daily television exposure nor top favorite television shows. In addition, students who took the survey in the fall semester exhibited significantly more condom use over the past three months than students who completed the survey in the spring. This finding suggests that college students are more likely to engage in risky sexual behavior by using less condoms in the spring semester, while students in the fall semester used condoms more often. Students in the spring semester were also more likely to have more sexual encounters in general,  $t(302) = -2.49, p < .05, (M = 5.60, SD = 1.45 \text{ vs. } M = 5.16, SD = 1.62)$ , but endorsed a lower number of sexual partners over the past three months,  $t(176) = 8.19, p < .001, (M = 2.31, SD = 0.85 \text{ vs. } M = 3.75, SD = 1.11)$ , than students in the fall semester.



Gender differences in this sample were frequent. For example, an independent t-test revealed a significant difference in gender role attitudes in that male college students endorsed more traditional attitudes about gender roles than female college students. Table 6 presents the means and standard deviations for all significant results by gender. Differences among genders were also found in regards to body image. Female students endorsed significantly more concerns about their shape and weight than male students. Additionally, females were more likely to endorse lower levels of self-esteem when compared to males. Females were also more likely to be more active in their television viewing than their male counterparts. Lastly, a marginal significant effect was found for condom use in the past three months. Females were more likely to engage in less condom use than males.

Table 6.

*Socio-demographic comparisons.*

<b>Semester</b>	<u>Fall</u>		<u>Spring</u>		<i>t</i> (df)	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Perceived Realism	2.69	0.44	2.54	0.39	-3.16 (300)	.002
Condom Use (past 3 months)	2.09	1.20	2.75	1.60	-3.59 (253)	.000
<b>Gender</b>	<u>Male</u>		<u>Female</u>		<i>t</i> (df)	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Gender Role Attitudes	25.24	7.04	20.40	5.34	6.35 (296)	.000
Weight Concern	1.50	1.07	2.58	1.31	-6.56 (294)	.000
Shape Concern	1.61	1.18	2.86	1.39	-7.14 (295)	.000
Self-esteem	22.08	5.12	20.14	5.55	2.71 (295)	.007
Active Viewing	3.08	0.71	3.37	0.69	-3.09 (294)	.002
Condom Use (past 3 months)	2.19	1.51	2.57	1.45	-1.88 (248)	.062
<b>Race/Ethnicity</b>	<u>Minority</u>		<u>Non-minority</u>		<i>t</i> (df)	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Gender Role Attitudes	22.58	5.90	21.22	6.23	1.85 (295)	.066
Weight Concern	2.02	1.29	2.41	1.35	-2.48 (293)	.014
Shape Concern	2.18	1.36	2.69	1.47	-2.97 (293)	.003
Self-esteem	22.16	5.67	19.78	5.14	3.70 (294)	.000
Perceived Realism of TV	2.71	0.43	2.57	0.42	2.81 (288)	.005
Daily TV Exposure	2.76	2.38	1.80	1.64	4.02 (287)	.000
<b>Romantic Relationship</b>	<u>Yes</u>		<u>No</u>		<i>t</i> (df)	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Gender Role Attitudes	20.99	5.70	22.98	6.88	-2.59 (297)	.010
Perceived Realism of TV	2.57	0.41	2.73	0.43	-2.99 (289)	.003
Condom Use (past 3 months)	2.60	1.55	2.15	1.24	2.24 (249)	.026

*Note:* The variation in degrees of freedoms is due to missing data.

Comparisons were also performed to see whether minority versus non-minority students differed in the variables of interest (refer to Table 6). Results indicated a marginally significant difference in gender role attitudes, that is, students who are part of the minority group tend to endorse more traditional gender role attitudes than their non-minority counterparts (i.e., White students). Regarding body image, minority students were less likely to report concerns about their weight and shape than non-minority students. In addition, non-minority students tended to exhibit lower levels of self-esteem compared to minority students. Lastly, minority students reported watching more television each day, and also perceived these portrayals as more real compared to White students. Taken together, these findings indicate that non-minority students hold more traditional values, are less concerned with their body image, and tend to engage in more television viewing than their non-minority counterparts.

College students in this sample who reported being in a relationship were significantly less traditional about gender roles were less likely to consider television as resembling reality, and used less condoms during the past three months than students who were not in a current romantic relationship. Table 6 represents the means and standard deviations for these variables. Students who were in a relationship reported being with their partners for an average of 21.6 months ( $SD = 18.37$ ). As expected, students who reported being in a relationship were more likely to have a lower number of sexual partners over the past three months,  $t(174) = -5.95, p < .001, (M = 2.24, SD = 0.63$  vs.  $M = 3.14, SD = 1.60)$ , but reported a higher number of sexual encounters,  $t(297) = 6.99, p < .001, (M = 5.78, SD = 1.35$  vs.  $M = 4.55, SD = 1.60)$  when compared to students who were not in relationships. Interestingly, there were no differences in the number of students who report being in a relationship in the fall versus the spring semesters.

## Correlations among Predictor Variables

Pearson correlations were conducted between all predictor variables and are presented in Table 7. Significant correlations were found among all three television influence variables. For instance, results indicated that as daily exposure to television increased, participants' perceived television as more real and were more likely to be involved in their viewing. Active viewing and perceived realism of television were also significantly correlated, suggesting that participants who report being actively involved in the programming they watched were more likely to also perceive this material as resembling reality.

The shape concerns subscale, the weight concerns subscale, and participants' body mass index were utilized in this study to examine body satisfaction. Significant correlations were found amongst all three measures. Participants who have a higher BMI also reported more concerns with their shape and weight. In this sample, 13 participants (5%) were categorized as being underweight or below the normal BMI cutoff, 158 (70%) were classified within the normal range, and 60 (25%) were overweight or above the normal cutoff. Shape concerns was also significantly negatively correlated with gender role attitudes, while a marginally significant association was found between weight concerns and gender role attitudes. That is, participants who endorsed more traditional gender role attitudes were more likely to also endorse more concerns about their shape and weight. Furthermore, shape concerns was significantly associated with active viewing of television, which suggests that as participants become more involved in their viewing, their concerns on their body shape increase. Lastly, significant negative correlations were found between shape and weight concerns and self-esteem. As expected, participants who endorse more concerns about their body shape and weight were also more likely to report lower levels of self-esteem.

Active viewing of television was significantly associated with self-esteem in this college student sample. For instance, students who reported being more involved in the act of watching television shows, reported less self-esteem. Being a more active participant in television viewing as well as assimilating the portrayals presented on television as real was also significantly correlated with gender role attitudes. As expected, participants who endorse more realism of television also endorsed more gender stereotyping, however, contrary to expectations, holding more traditional attitudes about gender roles was related to less television involvement.

Table 7.

*Correlation matrix of all predictor variables.*

Scales	1	2	3	4	5	6	7	8
1. Daily Television Exposure	--							
2. Active Viewing	0.32**	--						
3. Perceived Realism	0.13*	0.26**	--					
4. Weight Concern	-0.76	0.12*	0.17	--				
5. Shape Concern	-0.29	0.12*	-0.03	0.95**	--			
6. Body Mass Index	0.88	0.04	-0.01	0.37**	0.30**	--		
7. Self-esteem	0.10	-0.13*	0.01	-0.41**	-0.45**	-0.01	--	
8. Gender Role Attitudes	0.08	-0.12*	0.12*	-0.10†	-0.15**	-0.03	0.07	--

*Note.* *N* ranged from 266 to 304 due to missing data.

\* $p < .05$ . \*\* $p < .01$ . † $p < .10$ .

Table 8.

*Correlation matrix of all predictor variables by gender.*

Scales	1	2	3	4	5	6	7	8
<u>Males</u>								
1. Daily Television Exposure	--							
2. Active Viewing	0.35**	--						
3. Perceived Realism	0.40**	0.33**	--					
4. Weight Concern	0.14	0.06	0.14	--				
5. Shape Concern	0.20	0.06	0.10	0.93**	--			
6. Body Mass Index	0.26*	-0.04	-0.04	0.54**	0.49**	--		
7. Self-esteem	0.06	-0.11	0.20	-0.47*	-0.46**	-0.14	--	
8. Gender Role Attitudes	0.01	-0.07	0.13	0.09	0.05	-0.20†	-0.19	--
<u>Females</u>								
1. Daily Television Exposure	--							
2. Active Viewing	0.30**	--						
3. Perceived Realism	0.06	0.23**	--					
4. Weight Concern	-0.16*	0.05	-0.03	--				
5. Shape Concern	0.20	0.06	-0.08	0.95**	--			
6. Body Mass Index	0.05	0.02	-0.01	0.33**	0.25**	--		
7. Self-esteem	0.13†	-0.11	0.08	-0.36**	-0.43**	0.03	--	
8. Gender Role Attitudes	0.16*	-0.04	0.14*	0.01	-0.05	0.07	0.11	--

*Note.* For males, the *N* ranged from 71 to 79 due to missing data. For females, the *N* ranged from 189 to 218 due to missing values.

\* $p < .05$ . \*\* $p < .01$ . † $p < .10$ .

## Gender as a Moderator

Correlations among predictors were performed by gender and are presented in Table 8. Differences in correlations between males and females in the sample were noted for several relationships. For instance, significant correlations were found between gender role attitudes and perceived realism of television,  $r(214) = .14, p < .05$ , as well as gender role attitudes and daily television exposure,  $r(215) = .16, p < .05$ , for female students but not for male students. These associations imply that female students holding more traditional gender roles are more likely to watch more television, and perceive its content as more real. First, a stepwise regression was performed to examine whether gender moderated the relationship between gender role attitudes and perceived realism of television (see Table 9). Although moderation not was found, the first model was marginally significant in predicting perceived realism,  $F(2,287) = 2.54, p = .08$ . A main effect was found for gender role attitudes, in that gender role attitudes significantly predicted perceived realism of television.

Table 9.

*Stepwise regression analysis examining moderation of gender in the relationship between gender role attitudes and perceived realism of television.*

	$\Delta R^2$	$\beta$	$t(286)$
Step 1	.02 <sup>†</sup>		
Gender <sup>a</sup>		-.04	-.66
Gender Role Attitudes <sup>b</sup>		.14*	2.25
Step 2	.00		
Gender x Gender Role Attitudes		-.03	-.36

Note: <sup>a</sup>Gender was coded Male = 1, Female = 0. <sup>b</sup>Predictor variable was mean centered.

\* $p < .05$ . \*\* $p < .01$ . <sup>†</sup> $p < .10$ .

A second stepwise regression was conducted to investigate whether gender moderated the relationship between gender role attitudes and daily television exposure. No significant main effects were found. In addition, an interaction term between gender and gender role attitudes was computed to predict daily television exposure, however, it did not reach significance.



In the present study, daily exposure to television was significantly related to weight concerns for females,  $r(214) = -.16, p < .05$ , but not for males. This negative relationship is unexpected and suggests that female college students who watch more television each day are likely to report less concerns about their weight. Moderation by gender was analyzed using stepwise regression. Table 10 presents the results for the regression.

Table 10.

*Stepwise regression analysis examining a moderation effect of gender in the relationship between daily television exposure and weight concerns.*

	$\Delta R^2$	$F$	$\beta$	$t(284)$
Step 1	.13**	22.19		
Gender <sup>a</sup>			-.36**	-6.51
Daily TV Exposure <sup>b</sup>			-.10†	-1.72
Step 2	.01**	16.33		
Gender x Daily TV Exposure			.12*	2.03

*Note:* <sup>a</sup>Gender was coded Male = 1, Female = 0. <sup>b</sup>Predictor variable was mean centered. \* $p < .05$ . \*\* $p < .01$ . † $p < .10$ .

A main effect was found for gender in that being female significantly predicts concerns about weight compared to males. In addition, a marginally significant main effect was found for daily television exposure in predicting weight concerns. Furthermore, results indicated that indeed the interaction between television viewing and gender is significant in predicting weight concerns (see Figure 2). Decomposing the interaction, findings revealed that daily television exposure matters for females when it comes to weight concerns,  $\beta = -.15, t(285) = -2.46, p < .05$ , but is not a significant predictor of weight concerns for males,  $\beta = .13, t(285) = 1.05, p > .05$ . That is, for females watching more television each day is linked to reductions in weight concerns. Yet, overall females reported higher weight concerns than males for both low and high levels of daily television exposure.

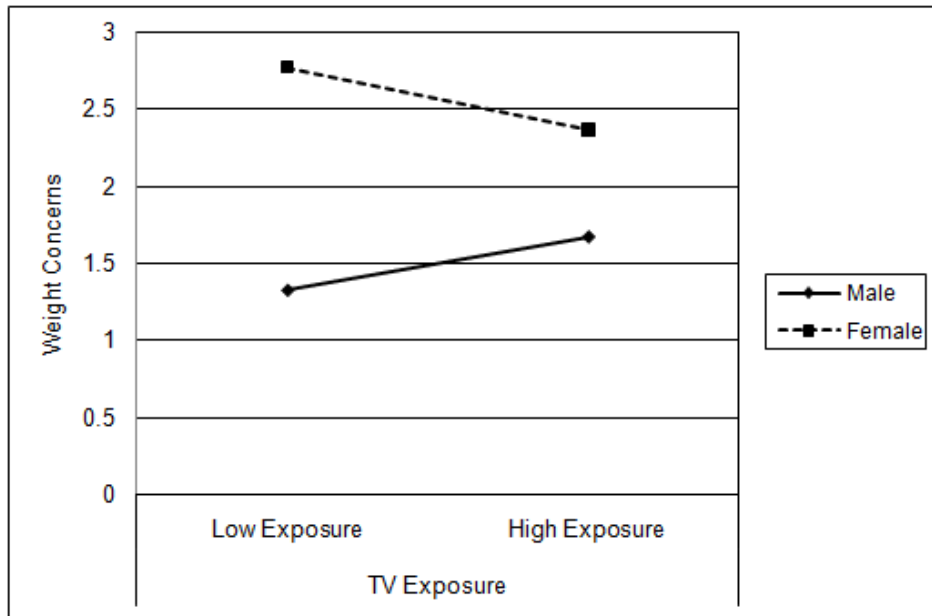


Figure 2. Interaction effect between daily television exposure and gender predicting weight concerns.

Furthermore, BMI was significantly correlated with daily exposure to television,  $r(72) = .26, p < .05$ , for males but not for females, suggesting that male students who tend to be heavier were more likely to spend more time watching television each day. A stepwise regression with gender and BMI entered in the first step and the interaction between these two variables entered on the second step was performed to examine whether gender moderated the relationship between BMI and daily exposure to television, however, this interaction did not reach significance.

Lastly, daily television viewing was significantly associated with perceived realism of television for males,  $r(72) = .40, p < .01$ , but not females. Moderating analyses for television viewing and perceived realism by gender were performed using a stepwise regression (see Table 11).

Table 11.

*Stepwise regression analysis examining a moderation effect of gender in the relationship between daily television exposure and perceived realism of television.*

	$\Delta R^2$	$F$	$\beta$	$t(278)$
Step 1	.02†	2.57		
Gender <sup>a</sup>			-.01	-.02
Daily TV Exposure <sup>b</sup>			.13*	2.26
Step 2	.03**	4.14		
Gender x Daily TV Exposure			.18*	2.68

Note: <sup>a</sup>Gender was coded Male = 1, Female = 0. <sup>b</sup>Predictor variable was mean centered.

\* $p < .05$ . \*\* $p < .01$ . † $p < .10$ .

A main effect was found for daily television exposure, in that television viewing is a significant predictor of perceived realism of television. Results also confirmed a significant interaction between daily television exposure and gender in predicting perceived realism (see Figure 3).

Findings suggest that television viewing is a significant predictor of perceived realism for males,  $\beta = .45$ ,  $t(279) = 3.41$ ,  $p < .01$ , but not females,  $\beta = .06$ ,  $t(279) = 0.87$ ,  $p > .05$ . That is, at high levels of television exposure, perceived realism is significantly higher for males,  $\beta = .18$ ,  $t(279) = 2.01$ ,  $p < .05$ , than females. At low levels of television exposure, males are marginally lower in perceived realism,  $\beta = -.17$ ,  $t(279) = 1.96$ ,  $p = .05$ , than females.

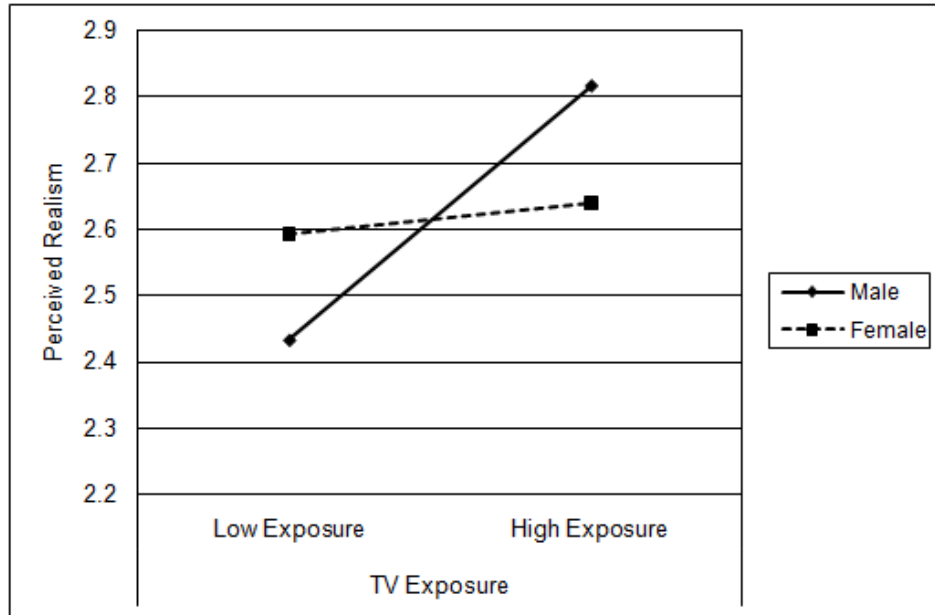


Figure 3. Interaction between daily television exposure by gender predicting perceived realism of television.

### Analyses of Specific Aims

The first aim of this study was to examine the relationship between television viewing influences and condom use. Hypothesis 1 indicated that there would be a significant negative relationship between television influence (active viewing, perceived realism, daily television exposure) and sexual risk such that viewers who are more involved in the viewing experience, perceive their television viewing as more real, and watched more television on a daily basis would be less likely to use condoms. For ease of interpretation, condom use in the past three months was recoded for the following analyses so that higher numbers indicate more condom use. Correlation analyses for the overall sample (see Table 12) indicated that condom use in the past three months was significantly associated with perceived realism of television,  $r(251) = .14$ ,  $p < .05$ . Contrary to expectations this relationship was positively correlated; that is, participants

who perceive more realism in television were more likely to use more condoms over the past three months.

Table 12.

*Correlations between television influence and condom use.*

	1	2	3	4	5
<u>Overall Sample</u>					
1. Condom Use in Past 3 Months	--				
2. Condom Use at Last Sex Act	.77**	--			
3. Perceived Realism	.14*	.03	--		
4. Active Viewing	.03	-.09	.26**	--	
5. Daily Television Exposure	.05	-.02	.13*	.32**	--
<u>Males</u>					
1. Condom Use in Past 3 Months	--				
2. Condom Use at Last Sex Act	.72**	--			
3. Perceived Realism	.04	-.05	--		
4. Active Viewing	.26*	.01	.33**	--	
5. Daily Television Exposure	.14	.07	.39**	.35**	--
<u>Females</u>					
1. Condom Use in Past 3 Months	--				
2. Condom Use at Last Sex Act	.78**	--			
3. Perceived Realism	.18*	.06	--		
4. Active Viewing	.01	-.09	.23**	--	
5. Daily Television Exposure	.04	-.04	.06	.30**	-

*Note.* *N* ranged from 246 to 253 for the overall sample due to missing data. *N* ranged from 65 to 76 for the male sample, and from 177 to 215 for the female sample due to missing cases.

\**p* < .05. \*\**p* < .01.

Correlation analyses by gender showed that the association between perceived realism and condom use in the past three months was only significant for female students,  $r(214) = .18$ ,  $p < .05$ . A stepwise regression was performed to examine whether gender moderated this relationship (see Table 13).

Table 13.

*Stepwise regression analysis examining a moderation effect of gender in the relationship between condom use and perceived realism of television.*

	$\Delta R^2$	<i>F</i>	$\beta$	<i>t</i> (242)
Step 1	.03*	3.87		
Gender <sup>a</sup>			.11†	1.73
Perceived Realism of TV <sup>b</sup>			.14*	2.14
Step 2	.00*	2.89		
Gender x Perceived Realism of TV			-.07	-.96

Note: <sup>a</sup>Gender was coded Male = 1, Female = 0. <sup>b</sup>Predictor variable was mean centered.

\* $p < .05$ . \*\* $p < .01$ . † $p < .10$ .

Moderation analyses by gender yielded no significant interaction between gender and perceived realism; however, several main effects were found such that being female marginally predicted condom use, and perceived realism significantly predicted condom use in the past three months.

Furthermore, a significant association was found between active viewing and frequency of condom use over the past three months for males,  $r(68) = .26, p < .05$ . These results suggest that males who are more active participants in their television viewing were more likely to use condoms. To examine whether gender moderates the relationship between active viewing and condom use in the past three months, a stepwise regression analysis was conducted (see Figure 4). Results are presented in Table 14.

Table 14.

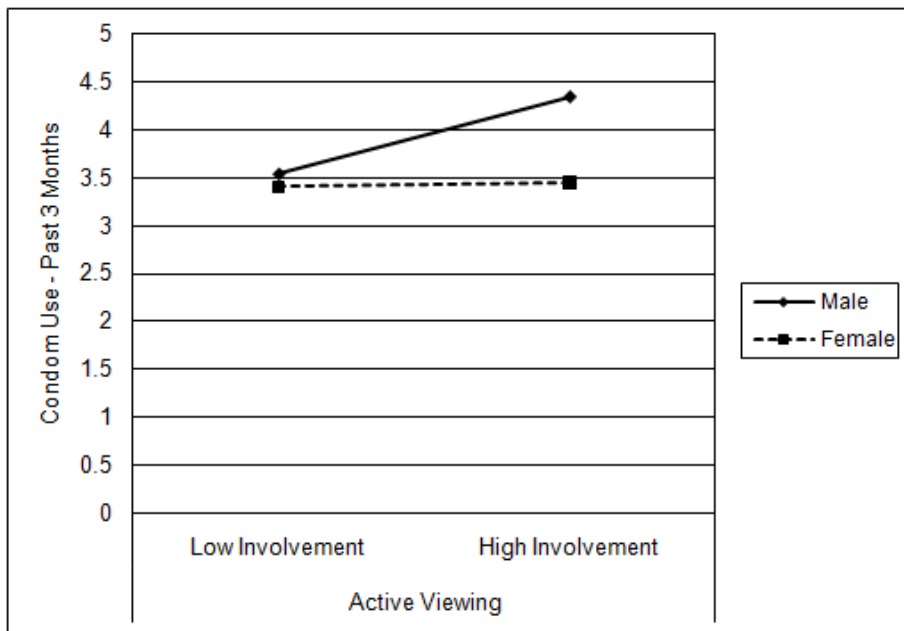
*Stepwise regression analysis examining a moderation effect of gender in the relationship between condom use and active viewing.*

	$\Delta R^2$	<i>F</i>	$\beta$	<i>t</i> (243)
Step 1	.02†	2.46		
Gender <sup>a</sup>			.13*	2.05
Active Viewing <sup>b</sup>			.08	1.26
Step 2	.01*	2.71		
Gender x Active Viewing			.14†	1.78

Note: <sup>a</sup>Gender was coded Male = 1, Female = 0. <sup>b</sup>Predictor variable was mean centered.

\* $p < .05$ . \*\* $p < .01$ . † $p < .10$ .

A main effect for gender was found, such that being male is a significant predictor of condom use,  $\beta = .13$ ,  $t(245) = 2.05$ ,  $p < .05$ . A marginal interaction effect between active viewing and gender in predicting condom use was found. The effect does not appear to matter for female students, however more active viewing of television significantly predicts more condom use in males,  $\beta = .27$ ,  $t(244) = 2.18$ ,  $p < .05$ . In addition, no gender differences were found at low levels of active involvement, however at higher levels of active viewing males were likely to report more condom use,  $\beta = -.28$ ,  $t(244) = -2.67$ ,  $p < .001$ .



*Figure 4.* Interaction effect between active viewing of television and gender predicting condom use over the past three months. For this analysis, higher numbers indicate more condom use.

The second aim of the study examined whether body image and gender role attitudes were significantly correlated with condom use, respectively. Specifically, hypothesis 2 suggested that body satisfaction would be significantly related to sexual risk, however this association would be moderated by gender. It was expected that males who were more satisfied with their physical appearance would be more likely to engage in sexual risk behavior, while women who were less satisfied with their bodies would report more sexual risk by engaging in

less condom use. Correlation analyses were conducted by males and females separately. No significant correlations were found between weight and shape concerns and condom use for either gender. In addition, self esteem was not related to condom use for males or females.

Hypothesis 3 predicted that gender role attitudes would be positively correlated with sexual risk. Specifically, it was hypothesized that students holding more traditional gender role attitudes would report less condom use. Results revealed no association between condom use over the past three months or during their last sexual encounter with gender role attitudes, however, significant associations were found when analyses were split by gender (see Table 15). For instance, a negative significant correlation was found between using condoms in the last sexual act and gender role attitudes for males,  $r(78) = -.22, p < .05$ . This finding suggests that males who are more likely to endorse traditional attitudes toward marriage and childrearing (i.e., more gender stereotyping) were more likely to *not* use condoms in their last sexual encounter. For females, a marginal significant effect was found,  $r(180) = -.13, p = .07$ , between gender role attitudes and condom use over the past three months, suggesting that female students who reported more traditional gender role attitudes were more likely to use condoms inconsistently over the past three months.



Table 15.

*Correlations among gender role attitudes and condom use.*

	1	2	3
<u>Overall Sample</u>			
1. Condom Use in Past 3 Months	--		
2. Condom Use at Last Sex Act	.77**	--	
3. Gender Role Attitudes	-.04	-.06	--
<u>Males</u>			
1. Condom Use in Past 3 Months	--		
2. Condom Use at Last Sex Act	.72**	--	
3. Gender Role Attitudes	-.03	-.22*	--
<u>Females</u>			
1. Condom Use in Past 3 Months	--		
2. Condom Use at Last Sex Act	.78**	--	
3. Gender Role Attitudes	-.13†	.06	--

*Note.* *N* ranged from 246 to 253 for the overall sample due to missing data. *N* ranged from 65 to 78 for the male sample, and from 177 to 215 for the female sample due to missing cases.

\**p* < .05. \*\**p* < .01. †*p* < .10.

Lastly, condom use over the past three months was also significantly correlated with condom use during the last sexual encounter,  $r = .77, p < .001$ , which suggests that those participants that tend to use condoms over the past three months are also more likely to use condoms in their last sexual encounter (refer to Table 7).

### **Test of Mediation**

The final aim of this study was to examine the mediating role of body image and gender role attitudes on the relationship between television influences and sexual risk behavior.

According to Baron and Kenny (1986) several assumptions must be met in order to test mediation. Hypothesis 4 predicted that the relationship between media influences and condom use will be mediated by body satisfaction and gender role attitudes, respectively. For body image, it was hypothesized that as television influence increases, body satisfaction decreases, and as a result condom use also decreases. For gender role attitudes, it was expected that those students that are actively involved in what they see on television, perceive it as more real, and

spend more time watching television in general would hold more traditional gender role attitudes and thus engage in less protected sex. Given the non-significant correlations found in this college sample between the independent variables, the mediator variables, and the dependent variable, running a mediational analysis using structural equation modeling is likely to further the null findings and should not be tested. However, for educational purposes of this thesis project, several SEM models were attempted. Each controlled for gender, race/ethnicity, and relationship status.

In order to determine the statistical validity of each proposed model, three fit indices were examined: the Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR) or Weighted Root Mean Square Residual (WRMR) in the case of categorical outcomes (Hu & Bentler, 1999; Bryan, Schmiede, & Broaddus, 2007). General guidelines for each of these indices have been established by the aforementioned authors to determine a good model fit of the data. Values that are indicative of adequate model fit should be close to .08 or lower for SRMR, close to .95 or higher for CFI, and close to .05 or lower for RMSEA. Values outside of these cut-offs are considered unacceptable and represent a poor fit of the model to the data. In addition, for categorical outcomes, it is recommended that both probit and logistic estimation is used (Bryan, Schmiede, & Broaddus). Mplus includes the proper estimators for categorical outcomes by using WRMSR estimators. Generally, a value for the WRMSR lower than 1 represents a good fit.

The first model included all three television influence measures as predictors, weight and shape concerns, self-esteem and gender roles as mediators, and frequency of condom use over the past three months as the outcome variable. Contrary to expectations, the model provided an

unacceptable fit to the data (CFI= .20; RMSEA = .60; SRMR = .12). Figure 5 presents the standardized path coefficients for the first model. The overall fit of the model was poor making interpretation of the significant paths difficult. However, it may be useful to discuss the direction of the effects. For instance, daily exposure of television and perceived realism were positively correlated with reporting more stereotypical gender roles. Consistent with the literature, this direction implies that as exposure to television and perceived realism increase, students' attitudes about gender roles are likely to be more traditional. Interestingly, the opposite pattern was observed with active viewing of television, which was negatively correlated with gender role attitudes. This negative association suggests that as students are more involved and engaged in the programs they watch, the less traditional they are in terms of their attitudes about gender roles. In addition, body image variables were found to be correlated with condom use in the past three months. For example, the more concerns students had about their weight, the more risk behavior exhibited by using less condoms. The direction of the relationship between shape concerns and condom use was unexpected; as concerns about body shape increased, condom use also increased. Given the divide in the literature on the influence of gender in these associations, it would be important to perform this path analysis split by gender and investigate the patterns of these associations more closely between males and females.

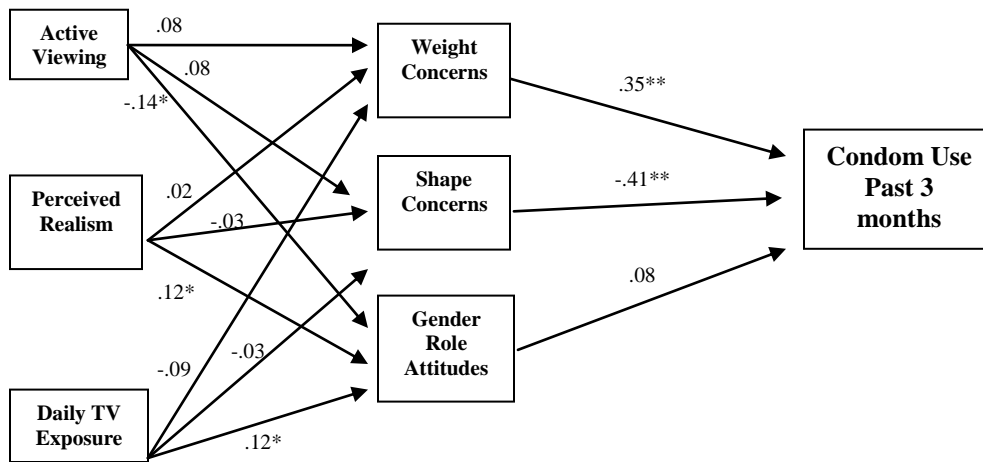


Figure 5. Path model representing the relation between television influence and condom use over the past three months, as mediated by body satisfaction (weight and shape concerns) and gender role attitudes. Values are standardized path coefficients.

\* $p < .05$ , \*\* $p < .01$

The second model included the same variables as the first model, however, condom use at last sexual encounter was used as the outcome variable. Again, this model resulted in an inadequate fit for the data (CFI= .56, RMSEA = .18, WRMSR = 1.31). Path coefficients are presented in Figure 6, however, given these findings interpreting path coefficients is not recommended. The direction of these paths, however, can be discussed. In regards to the model including condom usage in their last sexual intimacy, we see similar trends in television exposure and gender role attitudes. That is, television exposure is positively correlated with gender role attitudes, while active viewing remains negatively correlated. In this case, perceived realism was not correlated with gender role attitudes. Focusing on the relationship between the mediators and the outcome variable, the model shows that only gender role attitudes was negatively correlated with having used a condom in their last sexual intercourse. According to expectations, students endorsing more traditional views about gender roles were less likely to use a condom in their last sexual encounter.

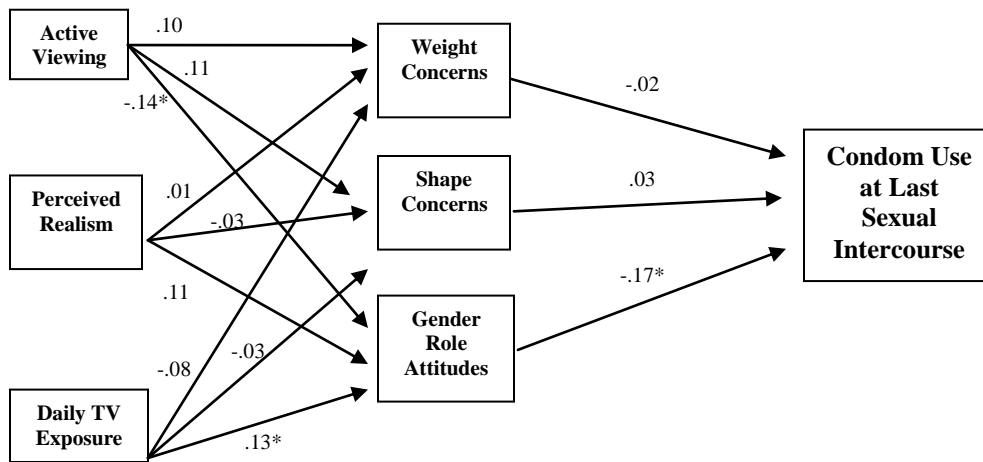


Figure 6. Path model representing the relation between television influence and condom use at their last sexual encounter, as mediated by body satisfaction (weight and shape concerns) and gender role attitudes. Values are standardized path coefficients.

\* $p < .05$ , \*\* $p < .01$

The aforementioned models were also run for females only ( $N = 218$ ) given the unequal gender distribution in the sample. Therefore, based on the limited number of males in the sample ( $N = 80$ ) using a male sample only was not pursued. None of the models with the female-only sample demonstrated adequate fit to the data, therefore this data will not be interpreted. Thus, given these null results for mediation, it is not possible to ascertain that body image and gender role attitudes mediate the relationship between television influence and condom use at this time, even when controlling for gender, race, or relationship status.

## Discussion

Previous literature has established a link between television viewing and behavior in several distinct areas including violence, teen pregnancy, alcohol use, and condom use (Chandra, Martino, Collins, Elliott, Berry, Kanouse, et al., 2008; Collins, Ellickson, McCaffrey & Hambarsoomians, 2007; Escobar-Chavez, Tortolero, Markham, Low, Eitel & Thickstun, 2005). The purpose of this study was to examine the relation between television influences and sexual

risk behavior, in particular condom use, and to investigate whether two mechanisms, body image and gender role attitudes, mediated the relationship. Overall, results suggest some evidence in support of the relation between television influence and condom use, while associations between the mediators and outcome measures were less prevalent.

### **Relation of Television Influence and Condom Use**

First, it was hypothesized that a positive association would be found between television influence (i.e., television exposure, active viewing, and perceived realism) and condom use. In this study, a significant relationship was found between perceived realism of television and condom use over the past three months, however the direction of the relationship was unexpected. Results showed a negative relationship between perceived realism of television and condom use, such that as students' perceptions of the reality of television increased, sexual risk decreased (i.e., condom use increased). This relationship is inconsistent with previous findings which suggest that the more real television seems to be, from the viewers point of view, the more likely they are to believe in its messages and adopt them as their own (Rivadeneyra & Lebo, 2008). This reality tends to evoke recreational attitudes toward sexual relationships, such that unprotected sexual encounters are consequence or risk free. Yet, the present findings suggest that as perceptions of reality increase, safer sex also increase. One possibility for this surprising result may be that even though some college students perceive what they see on television as real, they may be confronted with healthy sexual messages from other sources that encourage them to follow safer sexual practices regardless of their perceptions of television. For instance, there is evidence suggesting that mass media communication interventions via radio or televised public announcements, entertainment productions with this goal in mind as well as targeted messages delivered over the Internet can help promote responsible sexual behaviors in young

adults by bringing awareness of the importance of protected sexual relationships (Delgado & Austin, 2007).

Another possibility for this result may be that the portrayals of television depicted in current programming include, to a greater rate than previously found in research, safer sex negotiations and actual condom use presentations so that the reality of television may indeed promote, rather than deter, the use of condoms. Content analytical studies of television reveal that this possibility may be less likely especially when you consider that only 6 to 11 percent of television scenes with sexual content display messages about safe sex practices (Kunkel, Eyal, Donnerstein, Farrar, Biely, & Rideout, 2007; Kunkel, Eyal, Finnerty, Biely & Donnerstein, 2005). It is also possible that understanding the types of shows students are watching may affect whether they perceive television to be real or not. Data revealed that students in this sample are mainly watching television dramas (38.4%) and comedies (26%), while reality television (20.2%) is also prevalent in their viewing habits. It may be that college students are viewing shows that present the negative consequences of sexual relations in a very explicit and captivating way that may lead to increase condom usage. In accordance with this hypothesis, a study examining the effects of viewing a clip from the popular show *Grey's Anatomy* which portrayed correct information about perinatal HIV transmission found that participant's awareness of information about this topic increased from 15 to 61%, and retention of this information was observable six weeks after in 45% of participants (still three times higher than before the episode aired) (Rideout, 2008). This finding reveals that television has the power to change misconceptions and viewers can benefit from the messages presented.

Differences from previous studies that have found associations between perceived realism and sexual risk may be accounted for by differences in the outcome variables utilized

(Taylor, 2005; Ward & Rivadeneyra, 1999). For instance, both Taylor, and Ward and Rivadeneyra found associations between increased realism of television and endorsing more recreational or permissive attitudes about sexual behavior. Thus, to my knowledge no one has found significant relationships between perceived realism and actual sexual behavior such as condom use. Regardless of the unexpected results, the present finding indicates that the viewers perception of how real and applicable television programming is to their daily lives is important when examining sexual risk behaviors.

In the present study, only perceived realism of television was related to condom use. Neither daily television exposure nor active viewing of television was associated with condom use. These null findings may have resulted from the relatively low number of hours participants in this sample spent watching television. On average, participants spent approximately 2.2 hours a day watching television and were relatively inactive in what they were watching (e.g., mean of 3.28 on a scale of 6 for the Active Viewing Measure) . Presently, college students have ample opportunities to engage with many different media sources other than television to gain information and be entertained (Budden, Anthony, Budden, & Jones, 2007; Wright, 2009). Media such as the Internet, video/computer games, and films may take higher precedence in the life of a college student than television. These outlets may also be more important for those students living in a dormitory, who perhaps are more likely to have a computer in their rooms than a television set. Given that the survey asked how many hours were spent watching television, and did not specify watching television shows via other mediums, it is also possible that the amount of time spent viewing television programs was underestimated. In addition, the way the question was phrased (i.e., "how many hours a day do you spend watching television?") does not capture the reality that college students may be watching shows on their computers.



Taken together, the lack of involvement in television viewing in the sample might have contributed to these non-significant results. Given that the present study focused exclusively on television viewing, other media sources that may be more relevant to examine in college students.

Results appear to indicate that males and females may be interpreting television in different ways. For instance, results suggest that gender moderated the relationship between television exposure and perceived realism, in that females who endorsed more television viewing each day also perceived its content as more real compared to males. Moreover, there was a trend for females in this sample to typically use less condoms compared to males. Taken together, these findings provide partial support for the hypothesized predictions, in that higher television viewing and more endorsement of realism of television was related to less condom use for females. Yet, for the overall sample perceiving television as real was associated with more condom use in general. These mixed findings call for future research that examines the influence realistic perceptions of television have on sexual behavior. It is also interesting to note that gender also moderated the relationship between active viewing and condom use. Findings revealed that male students high in active viewing of television are more likely to also report higher frequency of condom use compared to their females counterparts. Thus, it appears that condom use in males may be particularly driven by their perceptions of television and how involved they are in what they watch.

### **Relation of Body Image and Gender Role Attitudes with Condom Use**

The second hypothesis of the present study examined the relationship of body satisfaction and condom use. It was expected that males who were more satisfied with their bodies would be more likely to engage in *unprotected* sexual intercourse, while females with higher body

satisfaction would be more likely to engage in *protected* sexual intercourse. Results did not support the hypothesized relationships. For the present sample, it appears that neither weight nor shape concerns as measured by the Eating Disorders Examination Questionnaire are related to condom use for either males or females. These findings are surprising and somewhat puzzling, yet, several factors could have affected the results. The EDE-Q asks participants to answer each statement based on how concerned they were about their body shape and weight over the past 28 days, while the outcome variable, condom use, was assessed over the past three months. This difference in temporal sequencing may have introduced measurement error. It was originally hypothesized that concerns about body shape and weight over the past 28 days could serve as a proxy for students' beliefs and attitudes toward their bodies over the past three months, yet it appears that this is not the case. For instance, body satisfaction may fluctuate over time and therefore may not represent a static trait; in turn, in this study frequency of condom use targeted a longer timeframe, or in the case of last time use, an unspecified timeframe since we do not know when the act took place. This pattern in differing timeframes reduces the ability to draw conclusions about how these two events (i.e., condom use and attitude toward the body) are related. It may also be that shape and weight concerns are not the strongest components of body image and therefore do not play a role in participants' decisions to use or not use condoms with their sexual partners. For example, a study by Littleton, Bretkopf, and Berenson (2005) with adult women examined body image by asking questions related to appearance investment (body surveillance) and appearance-related affect (body shame). Furthermore, Gillen, Leftkowitz, and Shearer (2006) utilized the Contour Drawing Rating Scale to assess college students' body dissatisfaction. This measure asks participants to select a figure that best approximates what they think they look like and then select another figure that represents what they would like to

like. Given the limited scope of the body satisfaction measure used in this study, our results may have been compromised.

The concept of self-esteem has been intricately linked with body satisfaction and was also examined in the present study. Specifically, findings from the literature show an association between higher body dissatisfaction and poorer self-esteem (Mellor, Fuller-Tyszkiewicz, McCabe, & Ricciardelli, 2010; Tiggeman, 2005b). Thus, in order to capture the crosslink between self-esteem and body satisfaction that has been established in the literature, this study examined whether self-esteem correlated with the two main condom use outcomes. In accordance with the null association between body satisfaction and sexual risk behaviors, results indicated that self-esteem was not related to condom use over the past three months or on the last sexual encounter. Self-esteem was measured as a state, rather than trait, variable which is highly influenced by present feelings and attitudes. Therefore, student's report of self-esteem might be specific to the present moment and not related to past behavior. Moreover, the relationship between self-esteem and body dissatisfaction in this sample was significantly correlated in the expected direction. That is, participants who are more dissatisfied with their body and have more concerns about their shape and weight are more likely to exhibit lower levels of self-esteem (see Table 7). This association provides support to the crosslink between body satisfaction and self-esteem.

The present study also explored the relationship between gender role attitudes and condom use. It was expected that college students who held more traditional gender role attitudes would report higher sexual risk behaviors or less condom usage. Findings provide partial support for this hypothesis. A marginal significant effect was found between gender role attitudes and condom use over the past three months for females. This correlation was in the

expected direction, and suggests that female students whose gender role attitudes tend to be more traditional are also more likely to report inconsistent condom use. In addition, holding more gender stereotypic attitudes was linked to less condom use for males at their last sexual encounter. Previous literature suggests that embracing more traditional views of the roles men and women should have in society may interfere with the process of sexual negotiation and communication about the use of protection (Lucke, 1998; Shearer, Hostermann, Gillen, & Lefkowitz, 2005). The idea that women should be passive and ascribe to what men say can hinder sexual health communication. In turn, an attitude in accordance with giving men total power over sexual decisions may indicate less freedom to discuss condom use and thus may lead to more risky sexual practices. Furthermore, new evidence suggests that there is still much to learn about the relationship between gender role attitudes and sexual risk, specifically. For instance, a recent study conducted with 520 sexually active women, ages 18-19 years, found that both egalitarian and traditional gender role attitudes were associated with more risky sexual behaviors, as measured by the relationship status of the most recent sexual partner (casual vs. committed) and the number of sexual partners within the past year (Leech, 2010). In this study, a 10% increase in risk behaviors was found among women with extreme gender role attitudes (either egalitarian or traditional) than those who held moderate views on gender roles. Thus, there is still some debate about the direction of the relationship between gender role attitudes and sexual risk behaviors, and more research is needed looking at these associations before attitudes toward gender roles can be considered a mediator.

Gender role attitudes were also significantly correlated with two television influence measures. Students who hold more traditional attitudes toward gender roles are also likely to perceive television as more real but tend to be less involved in what they are watching. The link

between perceived realism of television and gender role attitudes has been explored previously and suggests that those who perceive television to be real tend to also hold a traditional attitude toward gender roles that stipulate very distinct functions for men and women (Ward & Rivadeneyra, 1999). In accordance with previous research, college students in this sample who tend to hold these traditional attitudes also perceive these portrayals as reality. In turn, the portrayal of television scenes that represent these stereotypes in a realistic way may nourish their traditional attitudes even further. The negative correlation between active viewing of television and gender role attitudes was unexpected. The results of the present study suggest that college students with less traditional gender role attitudes tend to be more involved in the programming they are watching. The possibility that television these days resembles more egalitarian gender roles is important to consider. Given that the gender role attitude measure assesses attitudes toward marriage and childrearing in particular, it may be that what is being presented in television defies the expected pattern and less traditional individuals are more attracted to this type of programming and are therefore more involved in what they are watching. Television shows like ABC's "Modern Family" challenge traditional gender roles and present a new reality that may appeal to younger audiences for the bold statements they make regarding relationships. Another way of thinking about this relationship is that college students who reported more traditional values and attitudes toward gender roles are less active in their television viewing. As a whole, college students may be less likely to utilize television as their go-to source of information and entertainment, making their involvement minimal and their attitudes unlikely to change.

## **Mediation**

The primary aim of this study was to examine whether body satisfaction and gender role attitudes mediated the relation between television influences and sexual risk behaviors. Several models were proposed and tested using path analysis within the structural equation modeling framework. The first model included condom use over the past three months in its continuous form as the main outcome. The second model was tested using a dichotomous outcome variable: condom use at last sexual encounter (yes or no). Contrary to expectations, neither model provided a good and acceptable fit of the data. Several explanations may help clarify these non-significant results. The first possibility is that body image and gender role attitudes are not significant mediators of television influence and condom use as hypothesized in this study. Perhaps, including other outcome variables related to sexual risk (other than frequency of condom use), such as sex outside a committed relationship, condom use self-efficacy, or ability to negotiate condom use, may have provided a better representation of risk.

A second possibility is that the evidence linking the mediator variables to both the predictor and outcome variables in this study are still being crafted and although the literature suggest a relationship, variability in findings still exist. This variability may lie in the different ways of measuring sexual risk behaviors. To date, there is no 'gold standard' way of measuring sexual risk behavior. Studies have used a range of measures including frequency of condom use, age at first sexual encounter, multiple sexual partners, number of lifetime partners, and sexual intercourse outside a committed or intimate relationship (Beadnell, Morrison, Wilsdon, et al., 2005). Thus, across studies there is no consistent way of capturing sexual risk. This may contribute to the lack of association found between mediators and outcomes in the present study.

Another possibility for the null findings for the mediation analysis may lie in the population used for our sample. The present study examined the attitudes and behaviors of emerging adults in college, while a large proportion of the research done in this area, particularly research that focuses on television viewing, has been carried out with younger samples, mainly adolescents who are still in high school. It may be that college students use other media sources that carry more weight when it comes to influencing their attitudes and beliefs about their appearance, gender roles, and sexual behaviors. For instance, the use of social media by college students is on the rise (Budden, Anthony, Budden, & Jones, 2007). Research studies that look at the frequency of use of Internet sites such as Youtube, MySpace, Twitter, and Facebook may find that the interactive piece that this type of media bring to its users is more likely to resonate with interests of current college students, and can therefore be more likely to be associated with attitudes and behaviors. Moreover, young adults may have had more experiences or sought opportunities (for entertainment or educational purposes) that lead them to be less involved with television and in turn are less likely to perceive its contents as real.

Lastly, according to MacKinnon (2008) mediation implies a specific temporal relation between the independent variables, mediators, and outcome variables. For instance, it is proposed that the predictor variable will occur before the mediators, and the mediators will occur before the outcome variable. In this study, this temporal relationship was lacking. The outcome variable, condom use, was measured over the past three months or using an unspecified timeframe related to their last sexual encounter, while the predictors and mediators were subject to either present attitudes or the past 28 days. It is possible that this lack of temporal sequencing may have biased and underpowered the results.

Although the mediation models performed for this study cannot be interpreted in their entirety given their poor fit, it is possible to discuss the direction of the significant effects found within the models. The first model examined the relationship between television influence, body image, gender role attitudes, and condom use in the past three months. Significant paths were found among greater daily exposure to television and perceived realism and higher endorsement of traditional gender role attitudes. Previous literature supports the association between higher television exposure and more traditional views about gender roles and dating relationships (Ward & Friedman, 2006; Ward & Rivadeneyra, 1999; Zurbriggen & Morgan, 2006). Evidence for the relation between perceived realism and more traditional gender role attitudes is less prevalent, however, Rivadeneyra and Ward (2005) have found support for this relationship among Latino adolescents. Future research should consider expanding the literature on this media concept and its relation to gender roles. Contrary to expectations and previous findings (Ward & Rivadeneyra), active involvement was negatively related to gender role attitudes. That is, the more engaged viewers are in their shows, the less likely they are to endorse traditional gender roles. It may be that current television programming is presenting more egalitarian views of gender roles in relationships; viewers are drawn to this presentation and in turn adopt those attitudes. Given these contradictory findings, more evidence should be gathered to unpack the relationship between viewer involvement and gender role attitudes. Similarly, in the second model with condom use at last time intercourse as the outcome, the same relationships were found for daily television exposure and active viewing and gender role attitudes.

Paths among the body image variables and condom use in the past three months were also significant. Endorsing greater concerns about weight was correlated with using fewer condoms, however, the opposite pattern was found for shape concerns; higher shape concerns



was correlated with more condom use. Similarly, these findings could be discussed from the reverse angle, such that the less concerns expressed about weight, the more condom use; while the less concerns expressed about shape, the less condom use exhibited. Previous literature suggest that positive views of appearance are related to more sexual risk behaviors in males, while holding a positive regard of the body for females has been related to less risk (i.e., more condom use) (Gillen, Lefkowitz, & Shearer, 2006). Thus, it may be that there is a gender difference in these relations that are driving the opposite trends. Future research should address the relation between body image and condom use taking into account the risk and protective factors that may be driven by gender.

Lastly, in the second model with condom use at last sexual intercourse as the outcome measure, a significant path was found between gender role attitudes and condom use. This relationship suggests that students who endorse more traditional attitudes toward gender roles were more likely to *not* use condoms in their last sexual encounter. This finding is consistent with previous literature that suggest that individuals who endorse more traditional views of what male and women's roles should be, also tend to engage in more risky sexual behavior and endorse risky sexual attitudes (Shearer, Hosterman, Gillen, & Lefkowitz, 2005). Given that the aforementioned relationships were found within the context of path analytic models they should be interpreted with caution, and further research is needed to validate them and understand their implications.

### **Additional Findings**

Aside from the specific aims of this study, a number of comparative analyses were performed to investigate potential socio-demographic differences within the variables in the study. Of note are seasonal differences in condom use. Results showed that students who

participated in the study in the fall semester were more likely to use more condoms, than students who participated in the spring semester. Given that over half of the sample was in their first year of college, it may be that these students are more careful in their first semester in college and take precautions to safeguard their health, while students in the spring semester are more likely to already have a steady social group and may adopt self-positivity beliefs.

Significant gender differences were found regarding weight and shape concerns as well as self-esteem. Female students in the sample were more likely to endorse more concerns about how their body shape and weight, as well as be more likely to report lower levels of self-esteem. In addition, a marginally significant effect was found for condom use in that females were more likely to use less condoms than males. These findings may be linked to research suggesting that women are less likely to engage in safe-sex negotiation practices, especially considering lower levels of self-esteem and higher concerns with their bodies (Littleton, Breikropf, & Berenson, 2005). A lower self-concept in female students may inhibit their efficacy to protect themselves in sexual encounters.

In order to capture any race/ethnic differences within our sample, analyses were conducted between minority and non-minority students. Findings revealed that minority students were more likely to hold more traditional views of gender roles, are less concerned about their weight and shape, and also endorse watching more television than their non-minority counterparts. Higher familism, stronger ethnic identity, and possibly acculturation variables may account for some of these differences, and should be considered in future studies. For instance, it may be that non-minority students have been raised in traditional families where roles are strictly delineated and followed. Minority students who also have a strong ethnic identity may be more likely to accept their bodies for what they are, especially if their culture does not

recognize the mainstream "thin-ideal". Lastly, it is not clear why minority students are watching more television than their White peers, however, it may be that minority students watch more television to learn about mainstream values and societal norms.

Interesting differences were also found among students who reported being in a relationship and students who reported being single. Although no data was collected on whether the relationships were casual or exclusive, on average students reported having been with their partners for a little less than two years. In addition, those students in a relationship were more likely to use less condoms over the past three months than students reported not currently being in a relationship. These group of students may consider their relationships an exclusive union, and trust that no adverse consequences will transpire from their sexual relationship, hence the lower frequency of condom use. In addition, students in relationships tended to have lower number of sexual partners but higher numbers of sexual encounters. It is possible that students who engage in "casual" sex outside a relationship are more likely to protect themselves sexually given the lack of trust between partners, while those in a relationship trust their partners will be monogamous and do not worry about the potential negative consequences of sex. Further research should examine students' attitudes toward their relationship and how it relates to their ability to negotiate condom use with their partners, for example.

### **Limitations of the Present Study and Future Directions**

Several limitations of the present study should be acknowledged. First, the current study design was cross-sectional in nature. A cross-sectional design does not offer a comprehensive understanding about the relation between television influences and sexual risk behaviors and therefore cannot imply causation. I am unable to say with certainty whether television viewing affects body satisfaction, for instance, or whether one's satisfaction with our physical appearance

determines your television viewing involvement and consideration of its content. Given that our findings are correlational, I can only determine relationships between variables and examine the strength and direction of these associations without commenting on their causal implications.

The second limitation of the present study relates to the sample size. For this study, we sampled close to 600 college students but due to the exclusion criteria regarding age and sexual activity within the past three months, our sample size was cut in half. In addition, our sample was heavily skewed in that the majority of participants were female. Thus, analyses of gender differences should be interpreted with caution, given the low number of males in the sample. Furthermore, it has been established that the effectiveness of path analyses using SEM is highly influenced by sample size (Bryan, Schmiede, & Broaddus, 2007). Thus, the present study was greatly underpowered. Future research should consider limiting recruitment to only sexually active participants in order to enhance the study's statistical power, as well as oversample male participants.

Another important limitation to note in the present study involves its methodology. Participants completed a series of self-report questionnaires through an online server tool sponsored by the University. This online tool has several drawbacks that may have affected participants' responses. For instance, it does not allow for participants to skip a question if the statement does not apply to them. If that is the case, participants must go through every possible question and answer "decline to answer" for each statement that does not apply to them. This process is inefficient and time-consuming. The system-generated response option for each item also confounds the results because it is hard to distinguish whether the participant decided not to answer the question willingly or whether the question did not apply to them for another reason. Furthermore, participants were not monitored while taking the online questionnaire. They were

free to log on from their personal computers or computers located at the University, and complete the questionnaires at their convenience. This lack of monitoring from a research staff may have contributed to random responding throughout the assessment or may have increased distractions and interruptions during the completion of the questionnaires. Self-report measures are also known to be prone to bias and distortion on the part of the research participant (Kazdin, 2003). Participants may respond in a socially desirable way in order to minimize their risky behaviors or socially-unacceptable attitudes. This desire to want to show their best light may have contributed to the lack of findings. Given the frequency of missing data and the number of participants that had to be excluded due to rapid responding of the survey, changing administration methodology may be wise.

Regarding the actual measurements, there are several key limitations worth noting. First, as previously mentioned in the discussion section, sexual risk behavior was only measured by gauging frequency of condom use over two periods of time: last sexual encounter and over the past three months. Broadening the focus from condom use to other sexual risk factors may have increased power. For instance, studies should consider tapping into different domains of risk which are not limited to sexual behavior, including: sexual negotiating self-efficacy, communication with sexual partners about risk, intention to use condoms, or partner's expectations of engaging in safe sex.

Second, the present study focused solely on television viewing. It may be that for my population of interest (i.e., college students), other media outlets such as the Internet, are more likely to be utilized, and should be studied. Results of the present study suggest that television viewing is not a common occurrence among college students and we failed to ask about other media usage. Recent literature in media research has stated that venues such as social

networking sites and other online websites, computer and/or video games, music videos, and even communication media including cell phones and other hand-held devices are increasingly common and frequently used among young adults (Strasburger, Jordan, & Donnerstein, 2010). These media sources may facilitate sexual socialization (Wright, 2009), and are gradually being examined in the literature in children and adolescents. However, given the lack of monitoring and sexual freedom associated with the college years it is important to study these mechanisms in young adults.

Furthermore, recent literature on television influence includes a thorough analysis of television programming for sexual content (Kunkel, Eyal, Donnerstein, Farr, Biely, & Rideout, 2007; Zhang, Miller & Harrison, 2008; Wright, 2009). The results and implications of the present study are therefore limited in its ability to differentiate between general television viewing and the viewing of sexual content on television. Although participants' reported on their favorite television shows and the most common genres watched were coded, a more detailed analyses of sexual content by scene would have increased power and enhance the clinical significance of the results. Future studies should consider experimental approaches where participants are shown video clips of television programming depicting sexual content to examine whether watching these scenes have an effect on the attitudes and behaviors of the participant. Longitudinal designs would help elucidate the direction of the relationships already documented in the literature.

Third, two measurement flaws could have skewed the findings. Accidentally, several items from an established gender role attitude measure were omitted from the online survey tool. Therefore, for the present study one measure of gender role attitudes was analyzed, rather than using the two supplemental measures that look specifically at femininity and masculinity norms.

Furthermore, the response anchors in several items in the body dissatisfaction measure (EDE-Q) were inadvertently altered from the original version, making the total score of the measure slightly lower than the norms. This oversight may have also affected the variability in responses, decreasing the power to detect an effect. Overall, using multiple measures to examine the constructs of interests would have minimized these errors.

### **Conclusions and Implications**

Previous research has suggested that television exposure, body image, and gender role attitudes may be related to sexual risk behaviors, and specifically condom use (Ward & Rivadeneyra, 1999; Littleton, Breitkopf & Berenson, 2005; Lefkowitz & Gillen, 2006). The main objective of the current study was to examine whether body image and gender role attitudes would mediate the relationship between three television influence measures (daily television exposure, active viewing, and perceived realism) and condom use. Contrary to expectations, results from the present study do not provide support for this hypothesis.

Although support was not found for the mediation model, findings indicate that television variables such as perceived realism and active viewing may play a role in condom use among college students. In addition, understanding college students' attitudes about gender roles may also inform their likelihood of using condoms in sexual relationships. In an environment where media usage is high and sexual behavior is prevalent, it is important to consider the factors that may be influencing college students' attitudes toward condoms and their motivation to use them. These factors will be essential in developing interventions that target their beliefs and help promote behavior change as a way for minimizing the spread of sexually transmitted diseases in this population.

The lack of significant findings may be attributable to several factors. For instance, the emergence of new technologies may demote television as the go-to source for information and social learning within college student populations. In addition, over recent years we have seen a shift in the types of programming viewers are exposed to, with an increase in "reality" television that presents outrageous portrayals that are far from reality. This shift may have also changed the messages presented on television to be more egalitarian in nature and accepting of previously considered taboos and standards of behavior. Furthermore, studies have shown that sexual content on television is on the rise, and some have establish significant links between viewing sexual content on television and negative consequences in youth, such as early sexual initiation, pregnancy, and negative attitudes toward condom use (Collins, Elliott, Berry, Kanouse, & Hunter, 2003; Collins, Elliot, Berry, et al., 2004). Taken together these studies demonstrate the impact television can have on its viewer's sexual behaviors and attitudes. It may seem obvious, then, to consider reducing the exposure of sexual material to youth as well as decreasing the amount of sexual content presented on television as a potential strategy to prevent these negative consequences. Yet, there are significant barriers (e.g., requiring national level policy changes; setting restrictions on privacy and autonomy; lobbying against the lucrative nature of the entertainment business) to this proposal given the large market for sexual material. An alternate suggestion is to increase the number of television scenes that portray educational messages about sexual behavior, with the hope that viewers would increase their knowledge about sexual risk and learn how protect themselves and stay healthy. This resolution coupled with interventions that integrate media literacy and seek to develop healthy media consumers will be important for the success and effectiveness of HIV-prevention programs with youth.



Research with adolescents suggests that involving parents and encouraging communication about the risk and benefits of sexual behavior may buffer the negative consequences of watching sexual content on television (Kozberg, Ruhe, & Ferro, 2008). Sex-related communication between parents and college aged children is found to be less prevalent than communication with peers or friends (DiIorio, Kelley, & Hockenberry-Eaton, 1999; Lefkowitz & Espinosa-Hernandez, 2007). Even though communication seems to be more common with friends, Lefkowitz and Espinosa-Hernandez found a marginal effect indicating that students who talked with their mothers about condoms were more likely to trust condoms as a prevention tool, while students who talked to their friends about condoms were less likely to trust condoms. This finding suggests that communication with mothers can still have an impact in college students' attitudes about sexual behavior especially if the discussions are didactic in nature. Interventions should encourage parent involvement in sexual discussions and address the quality and accuracy of information received from their peers. Furthering this line of thinking, research should also examine the role of self-efficacy in sexual negotiation exchanges as well as the role of power in relationships to inform HIV risk-reducing programs.

In conclusion, the present findings do not provide conclusive evidence to support or deter the impact of television, body image, and gender role attitudes on sexual risk behaviors. However, future studies should continue to investigate the nature of these relations using other methodologies, including qualitative research, which will facilitate the understanding of the media as a sexual educator in college students.

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## Vita

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