

Let's Talk About Sex:  
The Health Belief Model and Effects of Prime Time Television Sexual Portrayals

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ABSTRACT

This study used the Health Belief Model to examine the effects of viewing valenced levels of consequences of sexual decision found in prime time television programs. When exposed to portrayals of negative consequences, participants had higher levels of perceived severity than those in the positive condition. After viewing positive portrayals, participants perceived an increased amount of benefits of behavior modification when compared to those who were exposed to the negative portrayals. In addition, multiple correlations were found between several individual-level variables that were tested for in the study and the HBM constructs. Theoretical implications and practical implications are discussed.

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## Chapter One: Significance of Study

The consequences associated with sexual behavior are a major public health concern in the United States (Eyal & Kunkel, 2008). Of all industrialized nations, the United States has the highest rate of sexually transmitted diseases (Glazer, 2004). Individuals with the highest rates of STDs in the U.S. are young adults and adolescents between 15 and 24 years of age (Fox, 2004) with young adults accounting for almost half of the 9 million new cases of STDs in 2000 (Weinstock, Berman & Cates, 2004). This notable finding is due mostly likely to the fact that fewer than half of young adults who are sexually active report using contraception regularly or even at all (Hoff, Greene & Davis, 2003). In addition, a 2006 study revealed that more than half of college students have engaged in casual sex. This type of sexual behavior is generally impulsive, takes place outside of established romantic relationships, and often involves drugs and/or alcohol (Grello, Welsh & Harper, 2006). Risky sexual decisions of this nature usually involve almost no familiarity with the sexual history of the partner (Hoff, Greene & Davis, 2003). Findings of this kind provide much evidence that sexual behavior is a key area of concern in the United States, especially when young adults are considered.

The negative effects of increased sexual activity are clear and, as such, the causes need to be analyzed if the problem is to be alleviated. It is apparent that the investigation of aspects that influence the sexual socialization of young adults is necessary. Mass media, especially television, is one of the key factors of this sexual socialization (Hutson, Wartella & Donnerstein, 1998). Mass media have long been criticized for their possible influence on trends of “early and precocious sexual activity” (Hutson, Wartella & Donnerstein, 1998). Even though viewing of television decreases after the adolescent stage, television is still the most popular medium for purposes of entertainment and relaxation of young adults (Gunter & McAleer, 1997). Research

has shown that a substantial amount of sexual content can be found on television (Greenberg & Hofschire, 2000). Multiple studies have uncovered important findings regarding the effects associated with television viewing of sexual decisions and the subsequent consequences for the characters involved. A 2006 study showed evidence that viewing safe sex portrayals in television dramas had an effect on female college students' attitudes of condom use. The students were placed in one of three different conditions: sexual intercourse present with a depiction of condoms; sexual intercourse present with no mention or depiction of condoms or safe sex; and a control group with no sexual content present. A significant interaction was found showing that women who saw the television program featuring condoms had more positive attitudes about condom use than women in the other two conditions (Farrar, 2006). Researchers concluded that how the sexual behavior and resulting outcomes are portrayed can have positive or negative effects on the viewing audience.

Nearly 15 years since Kunkel et al. (1995) urged scholars to continue this course of study, it is even more clear that if the goal is to better understand the effects of media then the context of the portrayal needs to be taken into consideration. The consequences of sexual behavior portrayed on television can have different effects for audience members, including positive, negative, (Eyal & Kunkel, 2008) or a mixture of both positive and negative effects. Eyal and Kunkel (2008) found that exposure to television programs that portray negative consequences of sexual decision results in the viewing audience having more negative attitudes toward premarital intercourse and more negative moral judgments of the characters engaged in this behavior. Positive consequences of sexual behavior or decisions found in television dramas include such things as "increased social status" and "personal satisfaction." Negative consequences of sexual behavior or decisions include "social stigma, relationship damage, [and even] STD contraction"

(Eyal & Kunkel, 2008, p. 163). Previous content analyses have shown that portrayals of consequences resulting from sexual decisions in television dramas are frequently omitted (Greenberg & Woods, 1999) and when these portrayals are present the consequences are often positive in nature (Cope-Farrar & Kunkel, 2002). Thus, rarely do audience members see negative consequences portrayed when television characters make difficult sexual behavior choices. However, the goal of this thesis is to study the effects associated with different prime time television program portrayals of consequences (social, personal, and sexual) based on sexual decisions.

## Chapter Two: Literature Review

### *The Health Belief Model*

When it comes to the study of health behavior, the Health Belief Model (HBM) is often used because of its adaptability in numerous health contexts and situations. One of the first theories to explain health behaviors, the HBM was developed more than 50 years ago and remains one of the most widely applied theoretical frameworks (Rimer & Glanz, 2005). Today, the HBM is often applied as a “conceptual framework” for the interventions associated with health behaviors as well as “to explain changes and maintenance of health behaviors” (Tedesco & Ivory, 2007, p. 584). This framework is supported by a large body of research and literature confirming effective means for predicting the implementation of preventive health behaviors (Mattson, 1999).

The HBM was crafted by social psychologists from the U.S. Public Health Service who hoped to understand the reasons why very few individuals were taking part in different health programs that allowed for prevention and detection of specific illnesses (Deshpande et al., 2009, 148). The screening for tuberculosis by chest X-ray is just one example of the poorly utilized health programs that caused this initial inquiry. The Public Health Service implemented this program by sending mobile X-ray units to neighborhoods across the nation and then offering free chest X-rays. Even though this procedure was offered at no charge and was available in multiple convenient locations, the undertaking had a very minimal amount of success. Based on these results like these, the social psychologist within the U.S. Public Health Service wanted to know why more people were not taking advantage of this free service. These social psychologists went about finding the answer to this question by investigating what was discouraging as well as encouraging people to participate in a free health service (Rimer & Glanz, 2005).

The HBM proposes, “that when an individual perceives a threat from a disease,” which is measured by susceptibility to and severity of the disease, and “perceived benefits from preventive action exceed barriers then the individual is likely to take preventive action” (Deshpande et al., 2009, 148). In other words, these social psychologists conjectured that when it came to health behaviors, an individual’s willingness to act is directly influenced by their beliefs about how susceptible they are to the disease and their perceptions of the possible benefits of the preventive action (Rimer & Glanz, 2005).

The HBM is an expectancy-value model, which means attitudes are developed and adjusted based on individual evaluations about belief and values. As such, this theory was used in a variety of public health settings (Deshpande et al., 2009) and in numerous studies related to “receiving immunizations, using preventative dental and health services, disease screenings, and diagnostics tests; assessing risk behaviors; and complying with medical advice” (Chew, Palmer, Slonska & Subbiah, 2002, p. 181) as well as participation in physical activity and dietary behaviors (Chew, Palmer & Kim, 1998). Due to the HBM’s overarching foundation and flexibility, it continues to be used in many studies examining health behaviors.

#### *The HBM Constructs*

Originally conceived with four health belief measures (Steers et al., 1996) and outlined in many different ways over the years (Mattson, 1999), the HBM is now built upon six main constructs that play important and influential roles in individual decisions concerning prevention, detection, and maintenance of multiple health behaviors (Rimer & Glanz, 2005). For the aims of this study, the original HBM framework outlined by Janz and Becker (1984) and then Becker (1990) will be used with the full six constructs (Mattson, 1999). Together, the six constructs of the HBM are able to provide a useful theoretical framework to help better understand both short-

term as well as long-term health behavior changes (Rimer & Glanz, 2005). Furthermore, even though the HBM constructs “do not always predict healthy behaviors, studies generally show much support for its utilization as a framework for health behavior interventions and in explaining compliance with health behaviors” (Tedesco & Ivory, 2007, p. 585).

The first construct is *perceived susceptibility*, which concerns the possibility of getting the disease or being harmed by the condition (Chew, Palmer, Slonska & Subbiah, 2002). The second construct is known as *perceived severity* (Rimer & Glanz, 2005) or *perceived seriousness*, which concerns how extreme the consequences of the illness or health condition may be (Chew, Palmer & Kim, 1998). In some studies applying the HBM, perceived susceptibility and perceived severity are grouped together in a single tenet known simply as perceived risk appraisal (Mattson, 1999). One of the main reasons for this possible grouping is to show that individual assessment associated with the risk of a specific illness concerns both susceptibility and severity. However, most research publications treat severity and susceptibility as distinct constructs. Regardless of the fact that these constructs are occasionally combined into a single tenet, there is one key element to remember. The HBM predicts that when an individual’s perceived risk appraisal (perceived susceptibility and severity) concerning an illness or health condition increases, the likelihood that fulfillment of the recommended prevention actions increases as well. Consistently research has shown that the positive correlations between compliance of the prevention action and both perceived susceptibility and severity exist (Mattson, 1999).

The third construct is associated with the *perceived benefits* of following the recommended health behavior (Chew, Palmer & Kim, 1998). The perceived benefits construct is directly connected to severity and susceptibility in that perception of these benefits might lower

perceived susceptibility as well as perceived severity (Rimer & Glanz, 2005). Perceived benefits can be defined as “the individual’s beliefs regarding the effectiveness of strategies designed to decrease vulnerability or reduce the threat of illness” (Brown, DiClemente & Reynolds, 1991, p. 51). Perceived benefits are often specific in nature, but sometimes they are as simple as feeling healthier or even living longer (Chew, Palmer, Slonska & Subbiah, 2002).

In contrast to perceived benefits, the fourth construct is *perceived barriers* or possible cost, time, or inconvenience associated with taking action or other implementation (Chew, Palmer, Slonska & Subbiah, 2002). Perceived barriers can be defined as “the assessment of potential negative consequences that may result from taking particular health actions” (Brown, DiClemente & Reynolds, 1991, p. 51). Barriers can be physical, psychological, emotional, or even financial. For example, with the use of a condom (the preventive action) to avoid HIV/AIDS (the illness), the barriers could include inability to apply the condom (physical barrier), the religious/moral beliefs forbidding the use of birth control (psychological barrier), the embarrassment associated with discussing the use of condoms (emotional barrier), or even the inability to afford condoms (financial barrier) (Mattson, 1999). Perceived barriers can be a mix of these four different types or one type, depending on individual perceptions.

The fifth construct is known as *cues to action* and is based on exposure to factors that might prompt action toward a recommended health behavior (Rimer & Glanz, 2005). Cues to action can be defined as “specific stimuli necessary to trigger appropriate health behavior” (Mattson, 1999, p. 243). These cues to action might “constitute a physician’s advice, print or electronic advertisement, or television program that elicits readiness to apply preventative health behaviors” (Chew, Palmer, Slonska & Subbiah, 2002, p. 181). Other cues to action include mass

media campaigns, counsel from a friend or peer, a newspaper or magazine article, or even the illness of a family member or friend (Tedesco & Ivory, 2007).

In fact, cues to action can be classified into one of two categories, internal and external, with both serving to produce awareness of a possible health threat. Internal cues focus on interpersonal aspects and include perceptions, social cognition, and physical cues such as symptoms of the illness. External cues are more public, such as messages found in mass media and through interpersonal interaction. External cues are often positive in nature and have goals to change individual and community health behaviors (Mattson, 1999). Somewhat surprisingly, cues to action are often considered a cursory component of the HBM. However, some researchers believe that “a central focus on cues to action is important because individual beliefs and perceptions about health and illness are socially constructed and contingent upon social interaction” (Mattson, 1999, p. 243).

The sixth and final construct is sometimes referred to as a “motivational factor” (Chew, Palmer, Slonska & Subbiah, 2002, p. 181), but is also commonly known as *self-efficacy*. Self-efficacy, conceptualized by Albert Bandura and a critical aspect of the HBM (Mattson, 1999), relates to an individual’s confidence in their ability to execute the recommended health behavior effectively (Rimer & Glanz, 2005). Many researchers assert that the sixth construct, self-efficacy, is predictive of preventive health behaviors. If the individual is confident in their ability to incorporate the health behavior, then they are more likely to do so (Mattson, 1999). However, each of the six constructs mentioned here is an essential element of the HBM.

### *Specific Conditions*

Different constructs or combinations of the constructs have been shown to lead to health behavior change depending on the disease or illness, the individual’s specific situation, and/or

the type of health behavior promoted (Chew, Palmer, Slonska & Subbiah, 2002). Janz and Becker (1984) as well as Zimmerman and Vernberg (1994) found the strongest predictor of health behavior change to be perceived barriers and to a lesser extent perceived susceptibility. The truth is that while all six constructs play important predictive roles in health behavior, there are two specific conditions that increase the likelihood that a health behavior change will take place. The HBM is often used with a goal of obtaining an understanding of risk associated with health behaviors and, as such, these two specific conditions are directly connected to the six main constructs (Chew, Palmer, Slonska & Subbiah, 2002).

The first of these conditions concerns how the perceived benefits of the action are balanced against the perceived barriers (Chew, Palmer, Slonska & Subbiah, 2002). The likelihood of adopting the preventive behavior increases when the benefits outweigh the barriers. In contrast, when the barriers outweigh the benefits the possibility for preventive behavior adoption decreases. An example of this condition involves the recommendation to participate in different safe-sex measures. The individual receiving the recommendation must see the benefits of following the proposed steps and those benefits must outweigh the barriers of executing the recommendation. A clear way that behavior change can take place is by making sure to recognize the barriers as well as the benefits. The next step involves the task of increasing perception of the benefits and then lowering the perception of possible barriers (Mattson, 1999). If this is accomplished, then the first condition is very likely to be achieved, thus increasing the chance that health behavior change will take place.

The second condition concerns perceptions of the susceptibility and severity of the health behavior and cues to act. Perceived susceptibility may be higher, lower, or equal to perceived severity, but it is possible that either construct may be sufficient to cue action. What is important

is whether perceptions regarding susceptibility, severity, or both are high enough to prompt action toward the health behavior in question (Chew, Palmer, Slonska & Subbiah, 2002). By combining the first and second conditions, the HBM posits that preventive health behaviors have more chance of happening when perceived barriers are low and perceived severity, perceived susceptibility, and perceived benefits are high (Steers et al., 1996).

Regarding the two conditions researchers have identified, the first condition is directly related to efficacy and the second is connected to readiness to act. According to the HBM, when efficacy and readiness to act function together, preventive health behaviors have strong results (Chew, Palmer & Kim, 1998). In fact, overall, the six main constructs of the HBM are necessary when outlining changes in health behaviors:

In other words, the HBM predicts that people will take action to prevent, control, or test for negative health conditions if they perceive themselves as susceptible to the condition, believe the condition is serious, believe that the said course of action is available and beneficial in reducing the susceptibility or severity of the condition, and believe that the perceived benefits to taking action outweigh the barriers to taking action (Tedesco & Ivory, 2007, p. 584).

As noted earlier, one of the major strengths of the HBM is that it is easily applied to multiple situations and for this reason it is still commonly used and widely recognized more than 50 years since its development.

### *Individual-Level Variables*

In addition to the six main constructs, there are several individual-level variables related to the HBM. Two of the individual-level variables that are important to the HBM are health motivation and salience. Together these two variables are able to supply a measure of the

individual's sense of responsibility for as well as participation in their own health (Chew, Palmer, Slonska & Subbiah, 2002).

According to Chew et al. (2002, p. 182), "Health motivation refers to a general predisposition toward health such that if good health is valued, health motivation becomes an important modifier in the HBM." Because health motivation is seen by many to be its chief focus, the HBM has proven to be effective for "addressing problem behaviors that evoke health concerns" such as "high-risk sexual behavior and the possibility of contracting HIV" (Rimer & Glanz, 2005, p. 13). Health motivation is considered to be a key element in the organization of health beliefs and intentions. If gauged correctly, it is able to assess the degree of involvement in various health issues and concerns. In fact, some research on the HBM has even included health motivation as a supplementary construct of the theoretical framework. As such, it is beneficial to study the extent to which it mediates readiness to act as well as self-efficacy of different recommended health behaviors (Chew, Palmer, Slonska & Subbiah, 2002).

The second individual-level variable, salience, concerns the level of importance an individual feels toward the health behavior, a component that researchers conclude is an essential element of the HBM (Chew, Palmer & Kim, 1998). When considering how an individual feels regarding the various HBM constructs, namely the first four (perceived susceptibility, severity, benefits, and barriers), often those thoughts are very much determined by the information sources where they originated. Considering circumstances such as these, salience of health-related topics often "reflects the psychological distance perceived by an individual between good health and him/herself" (Chew, Palmer, Slonska & Subbiah, 2002, p. 182).

Specific key factors that moderate the effects of the HBM are demographic characteristics (Deshpande, 2009) and other socioeconomic aspects of individuals (Chew,

Palmer, Slonska & Subbiah, 2002). These variables include such things as age, gender, ethnicity, educational background, and income, which are mediating variables of disease prevention and control (Chew, Palmer & Kim, 1998). The reasoning behind the inclusion of some of these variables, such as ethnicity, is that “unsafe health behaviors tend to be more common in some ethnic groups” (Steers et al., 1996). Tedesco and Ivory (2007), adapting original classifications by Janz and Becker (1984), categorized these variables into three distinct groups: demographic, sociopsychological (e.g., personality, social class, peer pressure), and structural (e.g., knowledge about disease, prior contact with the disease).

Prior research reveals that health behavior decisions may be viewed as a sequence of specific steps. At these different steps of the process, multiple interactions have the power to influence the ultimate health behaviors or decisions. These interactions can be conducted with a number of individuals or events (Chew, Palmer, Slonska & Subbiah, 2002). One type of influencing interaction possible is the presentation of health-related topics within the prime time television programs. Interesting to note is that one of the reasons why individual-level variables, such as those discussed in this section, are included in research involving the HBM is because mass media content alone has not been completely effective in influencing individuals to change unsafe sexual health behaviors (Mattson, 1999). Knowledge of this fact is one of the key reasons why individual-level variables are so important to consider when applying the theoretical framework of the HBM.

### *Previous HBM Studies*

Over the years, numerous studies have used the HBM to explain the changes and maintenance of health behaviors. While there are hundreds, if not thousands, of research articles applying the HBM, this thesis cites articles that helped inform the design and construction of the

experiment. It would be impossible to include all HBM articles here, so only a limited number of particularly relevant articles are presented here. Additionally, the HBM articles relating specifically to television effects and/or behaviors dealing with sexual health were particularly important to include.

Steers et al. (1996) conducted a study involving a 103-item questionnaire with undergraduate students ( $N = 424$ ) at six different schools to see if the frequency of a variety of safe-sex behaviors could be predicted by the HBM. Findings indicated that perceived susceptibility, self-efficacy, and a measure of social support predicted many safe-sex behaviors. The researchers also found that even though the HBM predicted more safe-sex behaviors for Euro-American students than African American, Asian American, and Hispanic American students, there were only a few differences.

Applying the HBM to the impact of a television program, Chew, Palmer, and Kim (1998) studied the motivation for individuals to take part in healthy dietary choices. A longitudinal study was used to examine the effects of an hour-long program (*Eat Smart*) that was based on a government report about diet and health. Using components of the HBM, the researchers measured predicted salience, motivation, and healthy eating habits. According to the study findings, nutrition behaviors were influenced by susceptibility and efficacy while being mediated by salience and health motivation. Regardless of multiple demographic factors, *Eat Smart* was able to increase viewer confidence in their health and nutrition knowledge by boosting salience for the issue at hand.

Using transcripts of HIV test counseling sessions, Mattson (1999) analyzed the persuasive messages given by counselors with the goal of leading clients to have stronger health beliefs and safer-sex behaviors. According to the posttest survey results, perceived susceptibility

and perceived severity of HIV/AIDS, as well as the self-efficacy, benefits, and barriers of safer-sex recommendations provided by the counselors, allowed for adoption of safer-sex behaviors. These findings showed that certain persuasive health messages and other communication strategies have an impact on short-term adoption of the health recommendations presented.

Examining the influence of a television program series, Chew, Palmer, Slonska, and Subbiah (2002) used data from a posttest field study with viewers and non-viewers of the series to analyze elements of the HBM. Using *A Family Year*, a series of five different half-hour episodes promoting health, the researchers found stronger support for self-efficacy, perceived severity, perceived susceptibility, and salience of healthy behaviors such as exercising and changing eating habits among viewers of the program as compared to non-viewers. This study was able to show that a television series that promotes healthy behaviors can improve health beliefs and add to health knowledge that eventually lead to healthy behaviors.

Selecting the Kaiser Family Foundation/MTV *Fight for Your Rights: Protect Yourself* sexual health campaign, Tedesco and Ivory (2007) analyzed the effects of health message primes on the attitudes, knowledge, and behaviors of study participants based on the content of the website. Incorporating media priming, third-person effects, and the HBM, results showed a significant effect on perceived severity and perceived susceptibility of the websites portrayals of HIV/AIDS as well as an impact on attitudes toward the website and intentions to return. Participants that were exposed to relevant HIV/AIDS primes were significantly “more likely to report they would act responsibly to prevent HIV/AIDS” (p. 588).

Since poor eating habits are a major health issue, Deshpande, Basil, and Basil (2009) chose to examine the issue of food selection by applying the HBM to predict a probability of healthy eating choices among college students. A total of 194 undergraduate students took part

in a 20-minute survey to test for perceived severity, perceived susceptibility, cues to action, and other measures, such as importance of eating a healthy diet. The results of the study strongly supported all aspects of the HBM that were tested as well as provided understanding of student health behavior, thus allowing for suggestions for social change campaigns.

### **Chapter Three: Hypothesis and Research Questions**

Based on the literature review, several research hypotheses and research questions related to the HBM constructs are presented for this thesis. To measure the hypotheses, only the experimental conditions were included thus excluding the control group.

H1: Exposure to valenced (negative, positive, mixed) prime time television portrayals of sexual behavior consequences will result in significantly different evaluations of perceived susceptibility regarding sexual consequences.

H2: Exposure to valenced (negative, positive, mixed) prime time television portrayals of sexual behavior consequences will result in significantly different evaluations of perceived severity or seriousness of sexual consequences.

H3: Exposure to valenced (negative, positive, mixed) prime time television portrayals of sexual behavior consequences will result in significantly different evaluations of perceived benefits of safe sex measures.

H4: Exposure to valenced (negative, positive, mixed) prime time television portrayals of sexual behavior consequences will result in significantly different evaluations of perceived barriers of safe sex measures.

H5: Exposure to valenced (negative, positive, mixed) prime time television portrayals of sexual behavior consequences will result in significantly different evaluations of self-efficacy regarding sexual health behaviors.

RQ1: Is there a relationship between participants' health motivation and the HBM constructs following exposure to valenced (negative, positive, mixed) portrayals of sexual behavior

consequences?

RQ2: Is there a relationship between participants' sexual permissiveness and the HBM constructs following exposure to valenced (negative, positive, mixed) portrayals of sexual behavior consequences?

RQ3: Is there a relationship between participants' sexual practice and the HBM constructs following exposure to valenced (negative, positive, mixed) portrayals of sexual behavior consequences?

RQ4: Is there a relationship between participants' religiosity and the HBM constructs following exposure to valenced (negative, positive, mixed) portrayals of sexual behavior consequences?

RQ5: Is there a relationship between participants' moral opposition to birth control and the HBM constructs following exposure to valenced (negative, positive, mixed) portrayals of sexual behavior consequences?

RQ6: Is there a relationship between participants' media consumption and the HBM constructs following exposure to valenced (negative, positive, mixed) portrayals of sexual behavior consequences?

RQ7: Is there a relationship between participants' liking of the program and the HBM constructs following exposure to valenced (negative, positive, mixed) portrayals of sexual behavior consequences?

RQ8: Is there a relationship between participants' perceived reality of the program and the HBM constructs following exposure to valenced (negative, positive, mixed) portrayals of sexual behavior consequences?

RQ9: Is there a relationship between participants' familiarity with the program and the HBM constructs following exposure to valenced (negative, positive, mixed) portrayals of sexual

behavior consequences?

RQ10: Is there a relationship between participants' connection to the program and the HBM constructs following exposure to valenced (negative, positive, mixed) portrayals of sexual behavior consequences?

## Chapter Four: Method

The hypotheses and research questions were tested in a between-subjects experiment. The goal of this study was to better understand the effects of viewing prime time television programs that contain valenced (positive, negative) levels of consequences (social, personal, and sexual) as a result of sexual decision. The treatment conditions included television programs with (A) mostly negative consequences as a result of sexual decision, (B) mostly positive consequences as a result of sexual decision, (C) a mix of both positive and negative sexual consequences, and (D) the control group with no depictions of sex or sexual consequences.

### *IRB Approval*

To receive approval from the Institutional Review Board of Virginia Tech, a research protocol was filled out and submitted. Approval for both the manipulation check and the experiment was achieved under the same protocol by classifying them as Study 1 (manipulation check) and Study 2 (thesis experiment). Expedited approval was received from the IRB on February 23, 2010 for the study, “Prime Time Television Programs and Viewer Attitudes.” The IRB Approval Code was 10-032 and the expiration date for the study is February 22, 2011.

### *Manipulation Check*

In order to ensure the prime time television portrayals used as stimuli reflected the treatment condition goals for this experiment, a manipulation check was incorporated. The purpose of this manipulation check was to ensure the participants were seeing similar valences of consequences (i.e., positive, negative, and a mix of both) that the researcher intended based on the different episode portrayals. The goal of the manipulation check was to ensure that the stimulus material selected for the experiment contained the intended consequences for each treatment condition.

Eight different episodes were selected for a stimulus manipulation check. Only the episodes with consequences of sexual decision were tested in the manipulation check (thus excluding the control group episode). Each episode contained multiple storylines, about two or three, with one focusing on sexual decision consequences. In all cases, no commercials were present to ensure that they did not contaminate or prime the participants in any way.

For treatment condition A, three episodes with mostly negative consequences were tested. The stimuli were selected from *Friday Night Lights* and *The O.C.* The episode of *Friday Night Lights* was titled “The Giving Tree.” “The Giving Tree” depicted a sexual consequence storyline involving Julie and Matt. Julie’s parents learn that Matt and Julie are now sexually active. Most of their storyline concerns the negative effects of that realization. Two episodes of *The O.C.*, “The Heartbreak” and “The Ties That Bind” were also tested. “The Heartbreak” depicted a sexual consequence storyline involving Summer and Seth. The two characters have recently started a relationship and decided to have sex early on. The negative consequences involve how badly the experience is for both and how they cannot seem to make it better. “The Ties That Bind” depicts a sexual consequence storyline involving Theresa and Ryan. Theresa has just learned that she is pregnant and news of that fact begins to have negative effects for them and for their family and friends.

For treatment condition B, three episodes with mostly positive consequences were tested. The stimuli were selected was “It Ain’t Easy Being J.D. McCoy” from *Friday Night Lights*, “Heaven and Hell” from *Supernatural*, and “Mortal” from *Smallville*. “It Ain’t Easy Being J.D. McCoy” depicted a sexual consequence storyline for Julie and Matt. As their relationship progresses, Julie and Matt have sex for the first time and the act is portrayed as positive for their romantic relationship. “Heaven and Hell” depicted a sexual consequence storyline for Anna and

Dean. Despite the difficult situation that brings them together, Anna and Dean connect very quickly and that connection leads to a fulfilling sexual encounter that is portrayed very positively in the episode. “Mortal” depicts a sexual consequence storyline for Lana and Clark. The newly formed relationship involving Lana and Clark, who have secretly cared for each other for a long time, leads to the couple having sex for the first time and is also portrayed positively.

For condition C, three stimuli with a mix of both positive and negative consequences were tested. The episodes selected included “Ballad” from *Glee*, and both an edited version and a full version of “No Sure Thing” from *Everwood*. An edited version and a full version of the “No Sure Thing” were tested to see if an edited episode with a single storyline, rather than multiple storylines, influenced respondents’ assessments of sexual behavior consequences shown. The reason for this assessment was that each individual is only required to participate for one hour. Both versions of “No Sure Thing” depicted a sexual consequence storyline for Madison and Ephram. As their relationship progresses, Madison and Ephram discuss the consequences of sex. Madison tells Ephram about her first time and how it was not a positive experience. Madison and Ephram experience a mix of positive and negative sexual consequences during the episode. They eventually do end up having sex in episode despite the issues they face in their storyline. “Ballad” depicts a sexual consequence storyline for Quinn and Finn. As more people learn of Quinn’s pregnancy, both characters deal with consequences both positive and negative in nature.

A sample of seventy women was recruited to evaluate the various episodes. A range of five to nine women evaluated the various episodes. Ages of the participants ranged from 18 to 22 with an ethnic breakdown of 86 percent white with the other 14 percent being a mix of other ethnicities. All of the participants for the manipulation check (and the experiment) were female.

Participants were recruited using a research pool of undergraduate students taking classes within the Department of Communication at Virginia Tech. The participants were from the department's general education classes and represent a distribution of students across majors and class years. Each student who participates in one of the department's research projects involving human participants receives course credit in return for an hour of participation in a study.

The participants viewed one of the eight selected episodes and then filled out a brief questionnaire. Items on the questionnaire (see Appendix A) included questions concerned liking, realism, and familiarity with the episode and program, identification and connection of the individuals to the episode and the characters involved in the consequences of sexual decision, and the valence of consequences of sexual decision that they believed were portrayed in the episodes (positive, negative, or a mix of both). The one episode (per condition) that possessed the highest rating was used in the experiment. Based on their manipulation results, showing that all participants evaluated the manipulation correctly, the episodes that contained the clearest valence of consequences included: "The Ties That Bind" from *The O.C.* for condition A ( $n = 7$ ), "Mortal" from *Smallville* for condition B ( $n = 9$ ), and "Ballad" from *Glee* for condition C ( $n = 8$ ). Full results are present in Table 1.

#### *Study Design in SONA*

The experiment was organized on the SONA Systems website in two sections. Part 1 was set up as a standard study, where participants signed up for a research session in Shanks 043. If the participants were able to find a time that fit their availability, they were directed to then proceed to Part 2 of the study. Part 2 was set up as an online survey study and served as a pretest questionnaire. After completion of the online survey, the participants were reminded to attend

the research session they had signed up for previous in Part 1. The only way to receive full participation for the study was to complete both Part 1 and Part 2.

### *Recruitment*

Recruitment of this experiment took place via the SONA Systems website, using a research pool of undergrad students taking classes within the Department of Communication at Virginia Tech. Those who were signed up received an announcement via e-mail. The announcement included the experiment description including purpose, clarification on the two parts of the study, research credit, participation sessions, participant rights, and contact.

### *Sample*

Participants in the between-subjects experiment ( $N = 157$ ) were assigned to one of the three treatment conditions or to the control group. Participants ranged from 18- to 22-years-old and 87 percent were white. For several reasons, women were the only participants allowed for this experiment. The reasoning behind this decision is based on prior research concerning women and health. First, women are more concerned with health issues than men, a fact based on the higher number of health services used by women as opposed to men (Verbrugge, 1989). Second, it is believed that women are more vulnerable to different diseases (Alexander, 1989). In fact, adolescent girls view their health less positively than do males their same age, which allows for a direct connection to this research proposal (Alexander, 1989).

### *Pretest Questionnaire*

Before exposure to the stimulus material, participants took a pretest questionnaire online. The pretest contained questions about various individual-level variables of the participants. Those measures included: health motivation, several sexual attitude measures, religiosity, moral opposition to birth control, media consumption, and demographic questions. Each participant

was asked to create a confidential participant identification code to link the data from the pretest to the posttest questionnaire. The identification code included the first two letters of the participant's last name as well as the last four digits of their student ID number. Participants were required to fill out the pretest questionnaire before arriving at Shanks 043 to take part in the research session.

### *Posttest Questionnaire*

After exposure to the stimulus material, participants took a posttest questionnaire on four OpSCAN forms. The posttest contained questions about the HBM constructs, liking of the program, perceived reality of the portrayal, familiarity with the program, and connection to the program/characters. Participants recorded the confidential participant identification code they had created in the pretest questionnaire at the top of each of the OpSCAN pages.

### *Stimuli*

The independent variables for this study included television episodes featuring mostly negative consequences, mostly positive consequences, a mix of both positive and negative consequences, and no consequences (control group). The participants in this experiment viewed one of four episodes, which were edited slightly for time purposes and thus ranged from about 23 to 28 minutes in length. Including the online pretest, participation took a little less than an hour. Participants spent about 45 minutes in the experiment session. Each episode, besides the one in the control group, featured varying types of sexual decision. After the editing process took place, the episodes' main storyline (focusing on sexual decision and its consequences) remained intact. Participants were exposed to one episode only to avoid contamination effects possible with multiple exposures. In addition, stimuli were shown at different times (morning and afternoon) to avoid any time period bias creating variety and no uniquely different experiences.

Based on the manipulation, the episodes that contained the clearest valence of consequences included: “The Ties That Bind” from *The O.C.* for condition A, “Mortal” from *Smallville* for condition B, and “Ballad” from *Glee* for condition C. The pilot episode of *Friday Night Lights* was selected for the control group since it is targeted at the same viewer demographic as the other programs used in this study. The episode used in the control did not contain portrayals of sexual decision or instances of sexual consequences.

Condition A used “The Ties That Bind” because it contained mostly negative consequences as a result of sexual decision. In the episode, Theresa is pregnant with what could possibly be Ryan’s baby. Ryan is currently in a relationship with Marissa, thus the pregnancy causes a strain on their happiness. Theresa debates whether she should have the baby or have an abortion, eventually deciding to keep the baby. She decides that she wants to head back to Chino, California, so that she can be close to her mother during this time and Ryan decides that he cannot let her raise this baby on her own. He moves out of the Cohen’s home in Orange County and heads back to Chino. This decision to leave causes pain and heartache for everyone involved, especially Marissa and the Cohen’s (Seth, Sandy, and Kirsten). The audience is able to see how the choice to have sex can lead to difficult decisions that will have lasting effects.

Condition B used “Mortal” because it contained mostly positive consequences as a result of sexual decision. In the episode, Clark and Lana are seen kissing passionately multiple times and the viewer can see that the romantic relationship is going well. Before Clark and Lana make the decision to have sex, they discuss the implications of that decision and learn that both have never had sex before even though they believed the other had in a previous relationship. Both Clark and Lana realize that they have been waiting for the right person and both can tell that they finally found each other at the right time. Later on in the episode, they have sex for the first

time. The decision to have sex is portrayed as romantic and intimate. The audience is able to see how the choice to have sex appears to have strengthened an already successful relationship.

Condition D used “Ballad” because it contained a mix of both positive and negative sexual consequences. In the episode, Quinn is pregnant with Puck’s baby, but Finn believes that the baby is his. Both Quinn and Finn are having major issues resulting from Quinn’s pregnancy. One major concern is that more and more people are learning that Quinn is actually pregnant even though she has been trying to keep it a secret. Quinn’s parents learn of the pregnancy and, being extremely disappointed, Quinn’s father kicks her out of the house. Finn’s mother immediately welcomes Quinn to stay with them for as long as she wants. Throughout the episode, Quinn and Finn’s friends in the Glee Club have been showing their support, culminating in the Glee Club singing “Lean on Me” to Quinn and Finn to show them that they can always count on their friends in times of need. The audience is able to see that sometimes not all the people in your support system will be as supportive as some of the others.

#### *Data Collection Sessions*

Data collection took place over a three-week span of time. Collection began on March 22, 2010 and concluded on April 9, 2010. Numerous research sessions took place due to the fact that filling them proved to be difficult. There was a total of 35 sessions to collect the minimum number of participants needed. Attendance totals ranged from two to 12 participants per session.

#### *Procedures*

Participants for this experiment were not randomly assigned, but the group exposure sessions were in fact randomized. Participants completed the pretest questionnaire online (see Appendix B) before attending the experiment session. After arriving at the experiment session, participants listened to a brief introduction by the researcher regarding the session procedures.

Then, participants read and signed the Virginia Tech IRB-approved participant consent form (see Appendix C). Participants were exposed to the selected episode assigned for the experimental session and condition. The sessions took place with as many as 12 participants at one time with the episode being viewed on a large flat-screen television placed at the front of the room. Each of the sessions followed identical procedures with the only difference being the content of the episodes (based on the treatment conditions). The researcher remained in the room with the participants during the entire experiment. When the episode ended, the posttest questionnaire was distributed and then completed by each participant while the researcher monitored participation. The data on the posttest questionnaire (see Appendix D) was collected using four Opscan forms per participant. Upon completion of the questionnaire, the participants were free to leave and were given a debriefing sheet (see Appendix E) as they exited the room.

### *Measurement*

*HBM constructs* were tested with select items from scales used previously by Eisen and Zellman (1984) and Champion and Scott (1997). These aspects included *perceived susceptibility*, *perceived severity or seriousness*, *perceived barriers*, *perceived benefits*, and *self-efficacy*. Neither of these prior scales tested for the sixth construct of the HBM: *cues to action*. Eisen and Zellman (1984) reported reliabilities that ranged from .56 to .82 (the individually reported alphas included perceived susceptibility at .70, perceived severity at .68, perceived benefits at .82, and perceived barriers ranging from .56 to .75) and that items possessed sufficient face validity as well. Champion and Scott (1997) reported that reliability estimates for their scales ranged from .65 to .90 (the individually reported alphas included perceived susceptibility at .84, perceived benefits at .69, perceived barriers at .85, confidence/ self-efficacy at .90) and that validity estimates were similar to other scales of this nature.

No other significant results regarding overall validity for the scales were reported for either study. Both scales used a five-point Likert scale with responses ranging from strongly agree to strongly disagree. The HBM measure used by Champion and Scott (1997) concerned breast cancer, so the focus on the measures was changed for this study to the consequences of sexual behavior. Additionally, some items from the prior scales were deleted due to their inappropriate focus while other items were added to ensure the measures captured the sexual consequences explored in this study. Word choices were updated (i.e. venereal disease to sexually transmitted disease and teenagers to young adults) for the item measures used by Eisen and Zellman (1984). Items from both measures were combined and reliability was tested.

The *perceived susceptibility scale* demonstrated a reliability of .80 for the three-item measure. The items for the perceived susceptibility scale included: 1) getting pregnant is currently a physical possibility for me; 2) I worry a lot about getting pregnant; and 3) based on my current sexual behaviors, I am susceptible to getting pregnant.

*Perceived severity* was measured using multiple items, but the reliability for the scale did not approach acceptable levels (Cronbach's  $\alpha$  ranged from .29 to .58 when various items were combined). As a result of the poor scale reliability, perceived severity was measured using a single item. The single measure for perceived severity was: pregnancy at this time in my life would result in serious negative consequences for me.

The *perceived benefits scale* demonstrated a reliability of .74 for the six-item measure. The items for the scale included: 1) if a man uses birth control, his partner knows he really cares about her; 2) the use of contraception improves a relationship; 3) if a women uses birth control, her partner will know she really cares about herself; 4) I have a lot to gain by using

contraceptives; 5) using birth control will help me to avoid getting pregnant; and 6) using contraceptives each time I have sex may help me avoid getting a sexually transmitted disease.

The *perceived barriers scale* demonstrated a reliability of .75 for the eight-item measure. The items for the perceived barriers scale included: 1) the use of contraceptives makes sexual intercourse seem dirty; 2) I have no religious or moral objection to contraception; 3) the whole idea of birth control is embarrassing to me; 4) I am afraid that I would not be able to use contraceptives correctly; 5) being tested for a sexually transmitted disease would be embarrassing; 6) being tested for a sexually transmitted disease would take too much time; 7) I do not feel I can take a home pregnancy test correctly; and 8) I would be uncomfortable having a pregnancy screening at a health clinic (e.g., Schiffert, which is the student health clinic on the Virginia Tech campus).

The *self-efficacy scale* demonstrated a reliability of .71 for the three-item measure. The items included: 1) I am confident I know how to use contraceptives; 2) I can perform a home pregnancy test correctly; and 3) I would know how to determine if I was pregnant.

In addition to the scales measuring the HBM constructs, multiple variables have been shown to be important considerations when it comes to media effects research. There are also several variables that are particularly important in the context of sexual socialization in particular (Eyal & Kunkel, 2008). Some of variables that needed to be measured for in this experiment included health motivation, sexual attitude, religiosity (religious beliefs), moral opposition to birth control, TV viewing (time spent), sexual behavior, religious behavior, TV viewing (frequency), and pregnancy prevention knowledge. These multiple variable measures were all found in the online pretest survey. The posttest questionnaire included items regarding the HBM constructs, liking of the episode and characters, reality of the television portrayal, familiarity

with the program, identification with the episode and characters, and consequences of sexual decision. Some of the items were reversed for the following measures (as well as for the HBM constructs). For identification of the reversed items, see the Appendices. It is also important to note that since most of the scales were drawn from previous research that any overlap of content asked for is due to that fact.

*Health motivation*, a measure used by scholars such as Moorman and Matulich (1993), is a Likert scale that measures individual levels of concern about health hazards and any actions taken to prevent them. Reliability for the health motivation scale ranged from .78 to .82 in the previous studies (Moorman & Matulich, 1993). For the purposes of this study, the items in the original scale were adjusted to relate to sexual health instead of general health and used a five-point Likert measure. The sexual health motivation measure used in this study demonstrated a reliability of .72 for the three-item, 5-point Likert scale. The health motivation scale included the following items: 1) I am concerned about sexual health hazards and try to take action to prevent them; 2) I try to protect myself against sexual health hazards I hear about; and 3) I don't take any action against sexual health hazards I hear about until I know I have a problem.

*Sexual attitude* is a series of scales able to reveal such aspects as levels of permissiveness and sexual practices. The five-point, Likert scale reported reliability of .70 in prior research (Hendrick & Hendrick, 1987). A few questions on the original scale were eliminated based on their lack of relevance for this specific study. The sexual permissiveness measure used in this study demonstrated a reliability of .83 for the seven-item, 5-point Likert scale. The items in the sexual permissiveness scale included the following: 1) casual sex is acceptable; 2) I would like to have sex with many partners; 3) one-night stands are sometimes very enjoyable; 4) it is okay to have ongoing sexual relationships with more than one person at a time; 5) extensive premarital

sexual experience is fine; 6) It is okay for sex to be just good physical release; and 7) sex without love is meaningless.

The sexual practice measure used in this study demonstrated a reliability of .71 for the four-item, 5-point Likert scale. The items in the sexual practice scale included: 1) birth control is part of responsible sexuality; 2) a woman should share responsibility for birth control; 3) a man should share responsibility for birth control; and 4) sex education is important for young people.

*Religiosity*, or religious beliefs, tests for different levels of beliefs and feelings associated with religious topics. In the article where the scale originated, reliability and validity were not discussed (Krause, 1993). The religiosity measure used in this study demonstrated a reliability of .93 for the four-item scale. The items in the 5-point Likert scale included the following: 1) I consider myself an active member of my church or religious organization; 2) I consider myself a religious person; 3) my religion's deity (e.g. God, Allah, etc.) is important in my life; and 4) I find comfort and strength from religion.

The *moral opposition to birth control* scale consisted of two questions designed by the researcher to understand whether the participants had a moral objection to the use of two different types of birth control. The 5-point Likert scale demonstrated a reliability of .89. The moral opposition to birth control scale included the following items: 1) I have no moral objections to using contraceptives like condoms; and 2) I have no moral objections to using contraceptives like birth control pills.

*TV viewing (time spent)* is a scale used to help understand the extent to which individuals watch television, focusing on the hours spent in the process. The responses to these items are simply the number of hours. Reliability, as reported based on a sample of U.S. college students, was reported at .80 for the TV viewing scale (Sirgy et al., 1998). The only adjustment to this

measure involved a way to properly gauge the hours spent watching television during the week and on the weekend. The prior questions asked about the amount of television viewed the day before, but for this study a specific distinction was made for the type of day. These questions were adjusted to become a media consumption measure.

*Liking* was tested with a 10-item, seven-point semantic differential scale which helped to evaluate the degree to which the participants found the episodes to be *appealing, exciting, good, likable*, etc. In order to ensure scale validity the bi-polar adjective pairs revealed some favorable qualities on the right side of the scale and some on the left side of the scale. The items were recoded in the data analysis to ensure all favorable traits were measured equally. The scale used in this study demonstrated a reliability of .89 for the 10-item measure.

*Reality of television portrayal* was measured using a five-point Likert-type scale to assess the extent to which individuals think that television shows are an accurate depiction of real life. In prior research, the reality of television portrayals' reliability was reported at .78 (Shrum, Wyer & O'Guinn, 1998). The only adjustment to this particular scale was to focus the questions on the episode that the participants viewed in the study. The reality scale demonstrated a reliability of .88 for the five-item measure. The reality scale included the following items: 1) besides any fantasy elements, the television show I just viewed shows life as it really is; 2) television programs similar to the one you just viewed present things as they really are in life; 3) if I see something on a television show like this I can be sure it really is that way; 4) television shows like this one let me see how other people live; and 5) television shows like this one let me see what happens in other places as if I'm really there.

*Familiarity with the television program* concerns previous exposure to the television show viewed, which may have an influence on attention given during the session (Eyal &

Kunkel, 2008). A six-item measure with questions concerning the level of familiarity with the episode just viewed was used to better understand the context of the viewing experience. The familiarity scale used in this study demonstrated a reliability of .86. The 5-point Likert scale included the following items: 1) I am familiar with the television program that I just viewed; 2) I watch this television program often; 3) I enjoy watching this television program; 4) I am familiar with the episode that I just viewed; 5) I liked the episode that I just viewed; and 6) this television program is typical of ones that I watch regularly.

*Connection elements* such as brand, product, and attractiveness were also included to test the comparability of the episodes to the others (Birkeland et al., 2003). Questions asked such things as whether the participants found the lead characters attractive and if the participants were interested in what they viewed. The connection measure used in this study demonstrated a reliability of .72 for the six-item, 5-point Likert scale. The connection scale included the following items: 1) in the episode, the lead characters involved in sexual decision were attractive; 2) I can relate to the lead characters and the sexual decision they faced; 3) I was interested in the episode I viewed; 4) I am interested in viewing future episodes of the show I saw; 5) I would like to watch future episodes of this program to learn more about the lead characters involved in sexual decision; and 6) I regularly watch the program from which the episode was selected.

*Consequences of sexual decision* were measured in both the manipulation check and the experiment to gauge the valence of consequences found within the episodes. Results of this measure helped in the selection of the episodes that were used in the experiment.

In the experiment, a final manipulation check was included at the end of the posttest, which asked the participants to identify the television program they had just viewed. The purpose of this manipulation check was to test for attention given to the stimulus material.

## Chapter Five: Results

### *Hypothesis 1 (H1)*

H1 predicted that exposure to valenced portrayals of sexual behavior consequences would result in significantly different evaluations of perceived susceptibility regarding sexual consequences. In order to test H1, two statistical tests were performed. An ANOVA test was performed to compare perceptions of susceptibility for participants in either the positive, negative, or mixed portrayals of sexual behavior consequences in the prime time television storylines. Perceived susceptibility, which was measured via three items, served as the dependent variable. Mean scores for perceived susceptibility, as well as the other constructs of the HBM, are presented in Table 2. Following exposure to the experimental stimuli, the positive portrayals group had the lowest perceived susceptibility to pregnancy ( $M = 3.53$ ,  $SD = 1.15$ ), followed by the mixed portrayals group ( $M = 3.67$ ,  $SD = .94$ ) and the negative group ( $M = 3.72$ ,  $SD = .95$ ). The control group mean was 3.81 ( $SD = 1.01$ ). Thus, the results appear to indicate that the more positive the consequences portrayed for the young women in the stimulus, the lower the perceived susceptibility of the participants. Although these results produced differences among the three groups, these differences were not statistically significant,  $F(3, 157) = .487$ ,  $p = .700$ . ANOVA results reveal no significant difference between the three groups on their mean score for perceived susceptibility.

To compare only the positive and the negative groups, an independent sample t-test between the negative ( $M = 3.72$ ) and the positive conditions ( $M = 3.53$ ) was performed. Results between these groups did not produce a statistically significant result,  $t(76) = .807$ ;  $p \leq .422$ . Thus, H1 was not supported.

### *Hypothesis 2 (H2)*

H2 predicted that exposure to portrayals of sexual behavior consequences would result in significant differences in evaluations of perceived severity or seriousness of sexual consequences. To test H2, two statistical tests were performed. An ANOVA test was performed to compare positive, negative, and mixed portrayals groups on the dependent variable of perceived severity. Perceived severity was measured via a three-item measure. Following exposure to the experimental stimuli, the negative portrayals group had the highest perceived susceptibility to pregnancy ( $M = 1.83, SD = 1.07$ ), followed by the mixed portrayals group ( $M = 1.60, SD = 1.05$ ) and the positive group ( $M = 1.38, SD = .86$ ). The control group mean score was closest to the mixed portrayals group ( $M = 1.61, SD = .90$ ). The results appear to indicate that the more negative the consequences portrayed, the higher the perceived severity of the health issue among participants. Although these results produced differences among the three groups, these differences were not statistically significant,  $F(3, 157) = 1.32, p = .254$ . ANOVA results revealed no significant difference between the groups on their mean score for perceived severity.

In order to compare the positive and the negative groups, an independent sample t-test between the negative ( $M = 1.83$ ) and the positive conditions ( $M = 1.38$ ) was performed. T-test results between these two groups revealed a statistically significant difference in perceptions of the severity of pregnancy,  $t(76) = 2.036; p \leq .045$ . Based on the t-test analysis, H2 was partially supported.

### *Hypothesis 3 (H3)*

H3 predicted that exposure to portrayals of sexual behavior consequences would result in significant differences in the perceived benefits of safe sex measures. An ANOVA test was

performed to compare the positive, negative, and mixed portrayals groups. Perceived benefits, which were measured via six items, served as the dependent variable. Following exposure, the positive portrayals group had the highest perceived benefits of safe sex measures ( $M = 3.80$ ,  $SD = .58$ ), followed by the control group ( $M = 3.74$ ;  $SD = .48$ ), the mixed portrayals group ( $M = 3.67$ ,  $SD = .65$ ), and the negative group ( $M = 3.49$ ,  $SD = .78$ ). The results appear to indicate that the more positive the consequences portrayed, the higher the perceived benefits for the participants. Results suggested that differences were produced among the three groups, but these differences were not statistically significant,  $F(3, 157) = 1.78$ ,  $p = .154$ . The ANOVA test did not reveal significant differences between the groups on their mean score for perceived benefits.

To compare only the positive and the negative groups, an independent sample t-test between the positive ( $M = 3.80$ ) and the negative conditions ( $M = 3.49$ ) was performed. T-test result between these two groups showed a statistically significant result,  $t(76) = -2.005$ ;  $p \leq .048$ . Based on the t-test analysis, H3 was partially supported.

#### *Hypothesis 4 (H4)*

H4 predicted that exposure to portrayals of sexual behavior consequences would result in significantly different evaluations of perceived barriers of safe sex behaviors. An ANOVA test was performed to compare the three experimental groups. Perceived barriers, which were measured via eight items, served as the dependent variable. Following exposure, the negative portrayals group had the highest perceived barriers for safe sex behaviors ( $M = 4.00$ ,  $SD = .56$ ), followed by the control group ( $M = 3.97$ ,  $SD = .67$ ), the mixed portrayals group ( $M = 3.94$ ,  $SD = .44$ ), and the positive group ( $M = 3.78$ ,  $SD = .65$ ). The results appeared to indicate that the more negative the consequences portrayed, the higher the perceived barriers for the participants.

Results suggested that differences were produced among the three groups, but they were not statistically significant,  $F(3, 157) = 1.04, p = .375$ .

To compare only the positive and the negative groups, an independent sample t-test between the positive ( $M = 3.78$ ) and the negative conditions ( $M = 3.99$ ) was performed. T-test results between these two groups did not show a statistically significant result,  $t(76) = 1.581; p \leq .118$ . The results for H4 failed to support the research hypothesis.

#### *Hypothesis 5 (H5)*

H5 predicted that exposure to portrayals of sexual behavior consequences would result in significantly different evaluations of participants' self-efficacy regarding sexual health behaviors. An ANOVA test was performed to compare positive, negative, and mixed portrayals groups. Self-efficacy, which was measured via three items, served as the dependent variable. Following exposure, the mixed portrayals group had the highest self-efficacy regarding sexual health measures ( $M = 3.96, SD = .72$ ), followed by the control group ( $M = 3.89, SD = .78$ ), the positive group ( $M = 3.87, SD = .76$ ), and the negative group ( $M = 3.83, SD = .83$ ). The results appear to indicate that participants exposed to the portrayal of mixed consequences, both favorable and unfavorable for the main character, indicated the highest perceived level of self-efficacy related to sexual health behaviors. Results suggested that differences might have been produced among the three groups, but these differences were not statistically significant,  $F(3, 157) = .209, p = .890$ .

To compare the positive and the negative groups, an independent sample t-test between the positive ( $M = 3.87$ ) and the negative conditions ( $M = 3.82$ ) was performed. T-test results between these two groups were not significant,  $t(76) = -.246; p \leq .807$ . Based on analysis of the data, H5 was not supported.

### *Research Questions*

The research questions inquired about the existence of a relationship between the HBM constructs and a wide range of behavioral, attitudinal, and media consumption level variables measured in the study. To test for these relationships, the ten behavioral, attitudinal, and media consumption variables were correlated with the five HBM constructs explored in this study, which created 50 possible pair wise correlations. Since correlation tests measure relationships, the goal of the research questions was to assess the relationship between participants' behavioral, attitudinal, and media consumption variables and their association with 1) perceived susceptibility and 2) perceived severity of pregnancy, 3) the benefits and 4) barriers to behavior modification, and 5) the self-efficacy to perform desired behaviors. The ten variables correlated with the HBM constructs are as follows: health motivation, sexual permissiveness, sexual practice, religiosity, moral opposition to birth control, media consumption, liking, reality, familiarity, and connection.

#### *Research Question 1 (RQ1)*

For the first of these analyses, Pearson product-moment correlations were used to assess relationship between health motivation and each of the five HBM constructs (see Table 3). As discussed in the method section, health motivation was measured using a three-item scale with the following items: 1) I am concerned about sexual health hazards and try to take action to prevent them; 2) I try to protect myself against sexual health hazards I hear about; and 3) I don't take any action against sexual health hazards I hear about until I know I have a problem. As Table 3 shows, only two significant correlations were found between health motivation and the HBM constructs. In particular, the significant correlations were found for health motivation and perceived barriers and health motivation and self-efficacy under certain experimental conditions.

For perceived barriers, a significant correlation was found in regards to health motivation and perceived barriers when all three experimental conditions were evaluated, ( $r = .162, p \leq .05$ ). A correlation resulted between health motivation and self-efficacy in the mixed condition (both positive and negative consequences), which indicates a substantial relationship ( $r = .414, p \leq .01$ ) between these two constructs. No significant correlations existed between health motivation and the HBM constructs for the purely positive or purely negative conditions.

### *Research Question 2 (RQ2)*

The second research question asked whether there was a relationship between sexual permissiveness (part of the sexual attitude scale) and the HBM constructs. Sexual permissiveness was measured using a seven-item scale with the following items: 1) casual sex is acceptable; 2) I would like to have sex with many partners; 3) one-night stands are sometimes very enjoyable; 4) it is okay to have ongoing sexual relationships with more than one person at a time; 5) extensive premarital sexual experience is fine; 6) It is okay for sex to be just good physical release; and 7) sex without love is meaningless. Pearson product-moment correlations were used to assess the possible relationships, which were calculated independently for each exposure condition and collectively for all conditions (see Table 4). As Table 4 shows, there were multiple significant correlations found between sexual permissiveness and four of the HBM constructs. The most significant of these correlations was with perceived susceptibility. Significant correlations were present in all three of the individual conditions as well as the combined measure. Significant correlations in the low to moderate range were found in the positive condition ( $r = .471, p \leq .01$ ), the mixed condition ( $r = .390, p \leq .01$ ), the negative condition ( $r = .372, p \leq .05$ ), and the three groups combined ( $r = .362, p \leq .01$ ). When the groups were combined to measure the cumulative relationship for all exposure conditions, there

were three other significant correlations. The significant correlations for sexual permissiveness resulted when tested for relationship with perceived benefits, ( $r = -.211, p \leq .01$ ); perceived barriers, ( $r = -.169, p \leq .05$ ); and self-efficacy, ( $r = -.191, p \leq .05$ ). Another correlation resulted between sexual permissiveness and self-efficacy in the negative condition ( $r = -.338, p \leq .05$ ). Since the correlations were negative, they indicate an inverse relationship. Thus, as sexual permissiveness increases, self-efficacy and perceived benefits of performing pro-social, healthy sexual behaviors decreases. The inverse correlation between sexual permissiveness and self-efficacy in the negative condition appears to indicate that the negative effects on self-efficacy. No other significant correlations resulted for this research question.

### *Research Question 3 (RQ3)*

The next research question inquired about any possible relationships between sexual practice, which is another sexual attitude measure, and the HBM constructs. Sexual practice was measured using a four-item scale with the following items: 1) birth control is part of responsible sexuality; 2) a woman should share responsibility for birth control; 3) a man should share responsibility for birth control; and 4) sex education is important for young people. Pearson product-moment correlations found multiple significant relationships between sexual practice and the HBM constructs, mostly in the negative condition and in all conditions combined (see Table 5). For the negative condition, three significant correlations were found in regards to perceived benefits ( $r = -.432, p \leq .01$ ), perceived barriers ( $r = -.426, p \leq .01$ ), and perceived severity ( $r = -.315, p \leq .05$ ). When all conditions are combined, correlations existed between sexual practice and four of the five HBM constructs. These included perceived susceptibility ( $r = .187, p \leq .05$ ), self-efficacy ( $r = -.211, p \leq .01$ ), perceived benefits ( $r = -.221, p \leq .01$ ), and perceived barriers ( $r = -.294, p \leq .01$ ). A significant correlation existed in the mixed condition

between sexual practice and perceived susceptibility ( $r = .313, p \leq .05$ ). Finally, a significant correlation was found in the positive condition between sexual practice and self-efficacy, ( $r = -.388, p \leq .05$ ). None of the other correlations were significant.

#### *Research Question 4 (RQ4)*

Research question four explored relationships between religiosity and the HBM constructs. Religiosity was measured using a four-item scale with the following items: 1) I consider myself an active member of my church or religious organization; 2) I consider myself a religious person; 3) my religion's deity (e.g. God, Allah, etc.) is important in my life; and 4) I find comfort and strength from religion. Pearson product-moment correlations revealed only a few significant correlations and all were found when all conditions were combined (see Table 6). As Table 6 shows, two significant correlations resulted between religiosity and perceived barriers ( $r = -.162, p \leq .05$ ) and religiosity and perceived benefits ( $r = -.203, p \leq .05$ ). No significant correlations existed between religiosity and the five HBM constructs in the negative, the positive, or the mixed conditions.

#### *Research Question 5 (RQ5)*

The fifth research question asked whether a relationship existed between moral opposition to birth control and the HBM constructs. Moral opposition to birth control was measured using a two-item scale with the following items: 1) I have no moral objections to using contraceptives like condoms; and 2) I have no moral objections to using contraceptives like birth control pills. Pearson product-moment correlations resulted in only two relationships, both occurring in the positive condition (see Table 7). As Table 7 shows, significant correlations were found between moral opposition to birth control and both self-efficacy ( $r = -.345, p \leq .05$ ) and moral opposition to birth control and perceived barriers ( $r = -.366, p \leq .05$ ). No other

significant correlations existed between moral opposition to birth control and the HBM constructs in the positive condition and no significant correlations in the negative condition, the mixed condition, or when all conditions are combined.

#### *Research Question 6 (RQ6)*

Possible relationships between media consumption and the HBM constructs were the focus of the sixth research question. Pearson product-moment correlations found only one significant relationship between media consumption and one of the five HBM constructs (see Table 8). As Table 8 shows, only one low, yet significant correlation was shown to exist between media consumption and perceived benefits within the negative condition, ( $r = .343, p \leq .05$ ). No other significant correlations existed between media consumption and the HBM constructs in the negative condition and none in the positive condition, the mixed condition, or when the conditions were combined.

#### *Research Question 7 (RQ7)*

The seventh research question asked whether a relationship existed between liking of the television program used as the stimulus and the HBM constructs. Liking was measured with a 10-item, seven-point semantic differential scale with items such as *appealing*, *exciting*, *good*, and *likable*. Pearson product-moment correlations found two significant correlations between liking and perceived benefits (see Table 9). As Table 9 shows, a correlation was found between liking of the program and perceived benefits in the negative condition, which resulted in a substantial relationship, ( $r = .411, p \leq .01$ ). A significant correlation resulted between liking of the program and perceived benefits in the combined measure ( $r = .187, p \leq .05$ ). No other significant correlations existed between liking of the program and any of the other HBM constructs in the

negative condition or when conditions were combined. No relationships existed in either the positive condition or the mixed condition.

#### *Research Question 8 (RQ8)*

The next research question asked whether a relationship existed between perceived reality of the program and the HBM constructs. Perceived reality was measured using a five-item scale with the following items: 1) besides any fantasy elements, the television show I just viewed shows life as it really is; 2) television programs similar to the one you just viewed present things as they really are in life; 3) if I see something on a television show like this I can be sure it really is that way; 4) television shows like this one let me see how other people live; and 5) television shows like this one let me see what happens in other places as if I'm really there. Pearson product-moment correlations found no significant correlations (see Table 10). As Table 10 shows, there were no significant correlations for perceived reality and the HBM constructs in any of the three conditions or when all conditions are combined.

#### *Research Question 9 (RQ9)*

The ninth research question asked whether a relationship existed between familiarity with the program and the HBM constructs. Familiarity was measured using a six-item scale with the following items: 1) I am familiar with the television program that I just viewed; 2) I watch this television program often; 3) I enjoy watching this television program; 4) I am familiar with the episode that I just viewed; 5) I liked the episode that I just viewed; and 6) this television program is typical of ones that I watch regularly. Pearson product-moment correlations found one significant correlation (see Table 11). As Table 11 shows, a significant correlation between familiarity and perceived severity existed in the negative condition ( $r = -.312, p \leq .05$ ). No other significant correlations existed between familiarity with the program and any of the other HBM

constructs in the negative condition. No significant relationships existed at all in the positive or the mixed conditions or when the conditions were combined.

#### *Research Question 10 (RQ10)*

The tenth, and final, research question asked whether a relationship existed between connection to the program and the HBM constructs. Connection was measured using a six-item scale with the following items: 1) in the episode, the lead characters involved in sexual decision were attractive; 2) I can relate to the lead characters and the sexual decision they faced; 3) I was interested in the episode I viewed; 4) I am interested in viewing future episodes of the show I saw; 5) I would like to watch future episodes of this program to learn more about the lead characters involved in sexual decision; and 6) I regularly watch the program from which the episode was selected. Pearson product-moment correlations found only two significant relationships (see Table 12). As Table 12 shows, a significant correlation was found between connection to the program and perceived benefits in the combined group ( $r = .218, p \leq .01$ ). A significant correlation resulted between connection to the program and perceived severity in the negative condition, ( $r = -.359, p \leq .05$ ). No other significant correlations existed between connection to the program in the negative condition or the combined group. No relationships existed at all in the positive or the mixed conditions.

#### *Control Group Correlations*

Pearson product-moment correlations were run on the control group condition as well and only found five significant relationships in all 50 of the tests (see Table 13). As Table 13 shows, two significant correlations were found between sexual permissiveness and perceived barriers ( $r = -.347, p \leq .05$ ) and sexual permissiveness and self-efficacy ( $r = -.392, p \leq .05$ ). Another two significant correlations were found between connection to the program and perceived severity ( $r$

=  $-.366, p \leq .05$ ) and perceived benefits ( $r = -.366, p \leq .05$ ). The final significant correlation was found between media consumption and perceived barrier ( $r = -.386, p \leq .05$ ). No significant correlations existed in the control group with the HBM construct of perceived severity or the following behavioral and attitudinal variables: health motivation, sexual practice, religiosity, moral opposition to birth control, liking, reality, and familiarity. Similar tables were constructed for each of the other conditions including: negative (Table 14), positive (Table 15), mixed (Table 16), and the overall combined group (Table 17).

## Chapter Six: Discussion

### *Summary of Results*

Several explanations exist for why the hypotheses of this experiment were either supported or not supported by the data collected. The fact that exposure to positive or negative portrayals of sexual consequences, namely pregnancy, did not produce a significant difference in regards to susceptibility is not completely surprising. The sample showed high levels of health motivation in regards to their sexual health prior to exposure. For a sample of college women, it is not unrealistic to imagine that the participants would have (or at least feel that they would have) a good level of control over the chances of becoming pregnant. When asked what a pregnancy would mean for them at this time in their lives, some of the participants discussed the rare chance of it happening. One participant even said that it would, “ruin my life. But I know for sure that wouldn't happen.” Of course, the result might be devastating to her and other participants, but many seemed to have a good sense that they had the situation under control. In addition, others noted that it would “be very inconvenient and irresponsible” or that it would “be an accident.” Susceptibility to pregnancy may seem so far out of the scope of possibility for many of them, as one participant noted that, “I don't want babies till I'm almost 30.”

A significant difference was found, however, between those in the negative condition and those in the positive condition in regards to perceived severity. Those participants in the negative condition found the consequences of sex to be more severe than those in the positive condition. In the negative condition, the participants watched as an unplanned pregnancy tore apart a family and affected many of the people who knew them. Even though the participants may not have felt susceptible to the consequences of sex as found in the analysis of the first hypotheses, the severity of consequences was perceived as higher since mostly negative

portrayals were shown. A clear explanation for this result would dictate that the content of the episode was the defining factor; the main difference that would lead to this outcome. When the participants were asked what a pregnancy right now in their life would do, many noted that it would “destroy my life.” One participant wrote that, “To me, at this point in my life, pregnancy would literally ruin everything as I now know it and impact everything that I had hope to accomplish in the future.” Other participants replied that it would “change my life dramatically,” or that it would “make me drop out of college and never get a decent career,” that it would “keep me from living the life I desire” or that it would be “terrible” and “mess up my whole future.” Despite the fact that the participants might not feel they are susceptible to pregnancy, they could easily see the severity of the situation even with just a small prompting from the television program showing them the negative outcomes that could happen if a person were to get pregnant so young.

The HBM states that for a health behavior change to have the possibility of taking place, one of two conditions must exist. The first condition concerns whether the individual perceives a threat and assumes that threat is measured by susceptibility to and severity of the consequences (Deshpande et al., 2009, 148). It is difficult to say that a health behavior change would be likely to take place based solely on the findings that have been discussed thus far in this section. While there was no significant difference in susceptibility mean scores across conditions for susceptibility, there was a significant difference between the positive and negative conditions when severity was measured. The fact that the mean scores for severity are very low, indicating low levels of severity attached to pregnancy, reveals that participants may have viewed pregnancy as not such a severe consequence when compared to other health concerns such as terminal or other life-threatening diseases.

Another significant difference was found between the positive and the negative conditions in regards to the perceived benefits of healthy behavior choices such as safe sexual measures. The perceived benefits of safe sexual behaviors were significantly higher in the positive condition. In contrast, there was no significant difference between the positive and the negative conditions concerning the perceived barriers. An interesting assessment can be made when trying to define why the benefits had more of an impact than the barriers. One possible reason is that the age-group of the participants in this study, often called the “Entitlement Generation” (Irvine, 2005) or “Generation Me” (Twenge, 2006), are what Dr. Mel Levine, a professor at the University of North Carolina Medical School, articulates as “kids who had too much success early in life and who’ve become accustomed to instant gratification” (Irvine, 2005). “Generation Me” constantly wants to know the answer to the question: What is in it for me? Immediate satisfaction, or gratification, is one explanation as to why the benefits had so much more of an impact in the positive condition. In the positive condition, the participants saw only benefits of the decision to have sex for the characters who decided to do so. Thus, the benefits were more prominent in this condition and exposure appears to have spotlighted the benefits clearly in the positive condition.

The constructs of perceived benefits and perceived barriers are the key components for the second condition that prompts health behavior change. When perceived benefits of healthy decision-making exceed the perceived barriers, then the individual is quite likely to make the change (Deshpande et al., 2009, 148). According to the mean score differences, the benefits did not always outweigh the barriers in all of the tested conditions. However, as noted earlier, there was a significant difference between the perceived benefits in the positive and the negative

conditions. That difference may play a part in an eventual health behavior change, but might not be enough to prompt it on its own.

The final hypothesis asked whether there would be a difference in regards to the self-efficacy of the participants following exposure to valenced levels of sexual consequences. Data showed that there was no significant difference, but possible reasoning behind that finding is interesting to consider. As noted earlier, self-efficacy is a critical component of the HBM (Mattson, 1999). Self-efficacy addresses an individual's confidence in their ability to execute the recommended health behavior effectively (Rimer & Glanz, 2005). The participants of this study were college-educated, young women who may have a strong hold on their sexual health and thus may feel confident about the actions that they take to protect themselves from getting pregnant. Even though there was not a significant difference between conditions on this measure, it does not mean that a health behavior change would not take place. Self-efficacy is predictive of preventive health behaviors, because individuals who are confident in their ability to incorporate the health behavior are more likely to do so (Mattson, 1999). Exposure to television content with positive consequences of sex may not have prompted higher self-efficacy, but the confidence of the participants reveals high self-efficacy prior to exposure.

Previous research has shown that high self-efficacy is common among the age group of the participants in this study. Dr. Jean Twenge noted that the "Entitlement Generation" has grown up in environments that foster high self-esteem, and that they have been socialized with high self-efficacy. When conducting a multiple-generation study, Twenge found that members of "Generation Me" were 86% more likely to registered higher self-esteem than their age cohorts from the 1960s (Anderson, 2008). The self-efficacy measure of this study concerned the confidence the participants had in performing different safe sex measures, but open-ended

responses showed that self-efficacy was high in regards to another aspect of sexual health as well: how to handle a pregnancy and even what to do once the baby came. One participant noted that pregnancy “would be a speed bump that I would figure out how to work with.” Others added that it would “be hard, but manageable” or that it would “be unexpected, life-changing, but I would take the responsibility and have the child and raise him or her and love her or him unconditionally.” Some of the participants felt very confident in their abilities to handle what many would call a very stressful situation: pregnancy during your college years. As one participant wrote, pregnancy would “be a major obstacle in my life, but I would take it on.”

However, these responses might have been very different if that had been asked of a sample that contained young women of a similar age group with less education attainment or a more diverse mix of minority populations. For example, white, college-educated women like the ones comprising the large majority of the sample used in this experiment, have higher levels of self-efficacy than minority or lower-educated women. Even though recent findings suggest that most unsafe sex behaviors are distributed almost evenly among all ethnic groups, some national data has shown higher incidences of some sexual consequences such as HIV and AIDS in African American and Hispanic American populations. In fact, most of the studies indicating that there is a higher prevalence of unsafe sexual practices as well as lower social support among ethnic groups did not include college students in their samples (Steers et al., 1996). When looking at data from 2004, higher birth rates were found in every other ethnic group when compared with non-Hispanic whites. These higher birth rates were found among multiple ethnic groups including Hispanics, Asians and Pacific Islanders, African Americans, and Native Americans, which all had higher birth rates than non-Hispanic whites. The data reveals highest birth rates were among Hispanics who also have lower educational attainment than non-Hispanic

whites (Health – Pregnancy and Birth, 2010). It would be interesting to see a comparison of the self-efficacy measures between the sample of this study and another sample containing more females from different ethnic groups and with varying levels of education attainment.

It is also important to discuss the results of correlations found between the HBM constructs and the behavioral, attitudinal, and consumption level variables asked about in the research questions. The HBM is very much focused on the individual and the levels assigned to the HBM constructs are often done so on an individual basis, and as such this theory has much to do with individual perceptions and beliefs. The following discussion addresses the significant relationships that were found in the three treatment conditions (thus excluding the overall, combined measure). When the three conditions were combined, significant results were often present, but the most plausible reason for this is that the larger  $N$  would have produced more results than the smaller  $N$  in each of the individual conditions. Additionally, research questions four and eight, which concerned religiosity and reality, did not produce any significant correlations and thus will be excluded from this discussion.

The first research question asked about possible correlations between health motivation of the individual and the five HBM constructs. The most interesting of the correlations found a relationship between health motivation and self-efficacy in the mixed condition. Those with high health motivation showed higher self-efficacy when viewing a mix of positive and negative consequences. It is possible that those participants found the consequences portrayed in the episode to be more realistic when compared to the purely negative and purely positive conditions. More realistic portrayals of sexual behavior consequences may have caused more processing in that participants might need to account for the favorable and unfavorable consequences in the episode.

The second and third research questions concerned two scales within the sexual attitude measure: sexual permissiveness and sexual practice. In regards to sexual permissiveness, there were significant correlations between that measure and perceived susceptibility in all three of the treatment conditions. This relationship shows that the higher the sexual permissiveness of the individual, the more susceptible that they feel toward the sexual consequences such as pregnancy, no matter what type of content they watched. While this result is not surprising, it is still worthy of note. In regards to sexual practice, the most interesting correlations were found in the negative condition between that measure and three of the HBM constructs: perceived severity, perceived benefits, and perceived barriers. What can be gathered from these relationships is that after viewing a television program with negative consequences of sex, the participants with high levels of sexual practice were strongly affected by the content.

Correlations with moral opposition to birth control were tested in research question five. The only significant correlations were found in the positive condition and concerned perceived barriers and self-efficacy. The participants in the positive condition had high levels of moral opposition and perceived the barriers to behavior modification as lower than the participants in the other conditions. However, these participants also appeared to have lower self-efficacy. The correlations here are confusing to try to explain since it seems logically that if an individual sees barriers to behavior change as small then they should feel more confidence in their ability to perform that change. It seems that viewing portrayals of positive consequences of sexual decision lowered efficacy for individuals with a high sense of moral opposition to birth control.

Research questions six and seven inquired about possible correlations between media consumption and liking of the program with the HBM constructs. Findings showed that there was a correlation between both variables and the HBM construct of perceived barriers in the

negative conditions. These results show that the more media that is consumed by the individual and the more that they enjoy the program they are watching, higher levels of benefits of behavior modification are perceived when viewing content that portrays negative consequences. Thus, the negative condition appeared to focus participants' attention on benefits of safe sexual behaviors.

The last two research questions tested for correlations between familiarity with the program and connection to the program/characters and the constructs of the HBM. Correlations were found between those variables and the construct of perceived severity in the negative condition. The more the individual was familiar with the program and the more connection they felt, the less they found the consequences to be severe. It would seem that connection and familiarity are not strong influencers of severity of sexual consequences when negative portrayals are shown. These final research questions, as well as a few of the others, showed that more correlations were found in the negative condition (the positive and the mixed condition were about the same). Findings appear to reveal that negative portrayals created more extreme reactions when the HBM constructs were assessed.

When discussing the results found in any research study, it is important to take a step back and look at the bigger picture. The HBM is focused on the constructs that would lead an individual to make a health behavior change. Knowledge of this fact begs the question: did the content of the television programs found in the study influence the participants to have different responses? Not all of the hypotheses were supported by the data collected, but some were partially supported particularly when the positive and negative exposure conditions were compared. That fact leads us to the "bigger picture" question: was exposure to a single episode portraying consequences of sexual behavior enough to promote behavior change in the participants? What has already been discussed in this section and in the literature review is that

preventive health behaviors have more chance of taking place when perceived barriers are low and perceived severity, perceived susceptibility, and perceived benefits are high (Steers et al., 1996). Even though the findings of this study did not show all these specific behavior change results, the truth is that the behavior change discussed in the HBM is a series of steps. It can be argued that television programs containing valenced levels of sexual consequences are a step in the HBM process. Research shows that multiple interactions between the HBM constructs have the power to influence health behaviors or decisions and these interactions can be conducted with a number of individuals or events (Chew, Palmer, Slonska & Subbiah, 2002). One of those events alluded to by Chew et al. (2002) are prime time television programs that portray sex and its consequences.

One of the first steps leading to a change in behavior concerning health-related issues is a “greater awareness” of the issues (Chew et al., 2002, p. 190). In this study, as well as in real-world situations, television programs that contain portrayals or discussions of health-related topics serve as the one of the constructs of the HBM: *cues to action*. Cues to action were defined earlier as “specific stimuli necessary to trigger appropriate health behavior” (Mattson, 1999, p. 243). For the participants of this study, other cues to action, besides prime time television programs, could include, but are not limited to: a conversation with a friend who has recently gotten pregnant unexpectedly, an online news article detailing the high levels of sexually transmitted diseases among college students, and a discussion with a parent or physician about the need and steps to take in regards to safe sex. Prime time television content can serve as part of the sequence of steps that leads to safe sex behavior change. The reality is that the full impact of viewing prime time television programs containing portrayals of sex and its consequences cannot be properly assessed in a single exposure experiment like the one used here. The role that

cultivation plays in the behavior change process needs to be studied in order to better understand what the real differences are when viewing valenced levels of consequences. Since there were nine different episodes tested for possible inclusion in this experiment, it demonstrates that storylines related to pregnancy and sexual behavior consequences are very common in prime time television dramas involving teen and college-aged female characters.

### *Theoretical Implications*

Results of this study suggest some clear implications for the HBM. The HBM continues to be adaptable in many different health contexts and situations. Despite its adaptability as a theoretical framework, the use of the HBM within research studies could benefit from clearer definitions of the HBM constructs and better measurement tools. Over the years, and even today, the scales and procedures used to measure the HBM constructs continue to lack comparability. Concepts such as “perceived susceptibility, efficacy, cues to action, health motivation, and salience,” among others, are often defined differently, thus calling for a need to focus on similar definitions and measurements (Chew et al., 2002, p. 192). In regards to comparability and consistency, the first area to consider is how the constructs and principles of the HBM are defined. The construct of self-efficacy is often called a motivational factor, which produces slightly different definitions. Salience is often considered an important element, but not always included in the framework. Often the constructs of perceived susceptibility and perceived severity are combined into a single element known as perceived risk appraisal, thus leading to different understandings of the individual elements and the combined construct. Having specific and clearly defined elements of the overall framework would benefit the use of the HBM as a theory.

The second area to consider is the need for better measurement tools. Applying the adaptable theoretical framework is difficult without the proper resources to do so. When designing this study, it was difficult to find proven measures of the HBM constructs. As reported in the method section, the reliabilities for the various constructs reached acceptable levels of reliability, but they were not particularly strong. In fact, often the measures had marginally acceptable reliability or were focused on just one type of health issue. The reliabilities reported in this experiment mirror the reliabilities found in other HBM studies. Not only do clear, proven measures of the HBM constructs need to be created, but those measures need to be able to be applied to different health topics and concerns. The field of study would benefit from the construction of a generic measure for each of the HBM constructs. Once those measures have been proven and the reliabilities have been shown to be strong, the next step could involve the application of the generic construct measures to different health issues. This process would take much time and collaboration among scholars and researchers, but once the task was completed there would be clear measurement tools for each of the HBM constructs that could be used in many different health contexts.

Another implication of this study involved the goal of using the HBM as it is intended: focusing on the individual. The HBM is very much a “person-centered” model (Steers et al., 1996). In fact, it has often been labeled an expectancy-value model, meaning that attitudes are developed and adjusted based on individual evaluations about belief and values (Deshpande et al., 2009). Lacking in research on the HBM are ways to look at correlations with the constructs and other variables that would play a part in health behavior change. This study attempted to understand what some of those correlations might be as well as how to use them properly in an experimental research design. For example, health motivation is supposed to be a key element of

the HBM, but it did not play a substantial role in this study. Previous research has shown that health motivation is seen by many to be a chief focus of the HBM (Rimer & Glanz, 2005, p. 13). The sample has most likely been exposed to sex education and much guidance regarding this subject matter. This assessment could account for why there was not a vast difference in sexual health motivation. More work on how to test for different relationships and the identification of key elements that correlate the process would benefit the field of study immensely.

The final area to discuss in regards to theoretical implications concerns the use and combination of additional theories and principles. Quite a few different theories would work well when combined with the HBM, the most obvious ones in regards to this study are social cognitive theory (Bandura, 2001) and cultivation theory (Gerbner & Gross, 1976). As noted earlier, a single episode is just not enough to properly measure the effect that television content might have on the health beliefs of the viewer. Social cognitive theory could help explain attitudes toward sexual behavior consequences and motivations to act responsibly. However, it is most likely that effects are cultivated over time by viewing varied portrayals of sex and valenced levels of consequences associated with sex (or other health behaviors, such as drug use, for example). Testing for levels of exposure to different kinds of content or employing some type of longitudinal study to better understand the cultivation effects on health beliefs with the use of the HBM might produce some interesting findings.

### *Practical Implications*

The research study was able to provide some practical implications as well. In regards to health campaigns, Tedesco and Ivory (2007) noted that campaign designers should consider all of the HBM constructs when they go about “designing and implementing campaign messages.” The reason being is that people “may disregard health messages if they fail to enhance feelings

of susceptibility/severity, and fail to provide evidence that perceived benefits outweigh perceived barriers to thus foster self-efficacy” (Tedesco & Ivory, 2007, p. 588). This assessment is true if you want to be successful in endeavors to improve the health behavior of a target audience. To expand on that concept even more, health campaign designers and other health practitioners need to consider the HBM constructs that will have the most effect on the specific group that they hope to reach. Including all of the HBM constructs in a campaign structure is essential, but highlighting the specific ones that will have the most impact is just as important.

Applying the findings of this study to health campaigns, there are clear areas to highlight if the target audience is college students. The first recommendation is to be explicit about benefits of the health behavior. As noted earlier, “Generation Me” is interested in what is in it for them. Show them how taking part in a specific health behavior, or even stopping an unhealthy one, would be a benefit for them now and in the future. The emphasis should be on immediate benefits for that target audience, but future benefits could also have an impact on them as well. The second recommendation is to remember that these college students often possess high levels of self-efficacy and using that to the advantage of the campaign can be beneficial. In television ads or other campaign materials, show examples of people their age (that they can relate to) performing the recommended action(s) and they will most likely be able to picture themselves doing it. The age group identified has strong confidence in their ability to accomplish numerous tasks.

What about practical implications for prime time television programs like the ones used for stimuli in this study? An obvious goal of those types of programs is to entertain and in the process make money based on advertisements present and other related ventures. However, entertainment is not the only result that television provides as it has long been used (directly and

often indirectly) to educate and inform the audience watching at home. Creators, producers, and writers of scripted prime time programs constantly need to remain aware of the fact that the viewers of their shows receive much in the way of information despite the context of entertainment. Important facts and information can be disseminated via these types of programs and there is a responsibility to the audience to be as honest and realistic in the type of portrayals shown, whether they are positive, negative, or a mix of both. This might include emphasizing the benefits of healthy decision-making and showing young, intelligent characters performing the actions that will lead to a healthier lifestyle. In that way, entertainment television programs can play a part in the series of steps outlined in the HBM that lead to health behavior change.

The final practical implication to mention concerns the actual content levels of sexual portrayals in prime time television programs and the need for awareness of what is actually found in most programs. As noted earlier, previous content analyses have shown that portrayals of consequences resulting from sexual decisions in television dramas are frequently omitted (Greenberg & Woods, 1999) and when these portrayals are present the consequences are often positive in nature (Cope-Farrar & Kunkel, 2002). The assessment can then be made that rarely do audience members see negative consequences portrayed when television characters make sexual behavior choices. As mentioned earlier, the search for experimental stimuli revealed many examples of negative consequences for sexual behavior, particularly in shows targeting younger audiences. Finding content that portrays solely positive consequences of sex to fill that specific treatment condition was very difficult. Completely positive portrayals exist in prime time television, but they are more rare than purely negative depictions. Some programs seem to show sexual portrayals in a positive light, but most times if the viewer waits a week for the next episode they will see that sex is often complicated and does not always lead to only positive

results. For example, in a recent, much-debated episode of *Gossip Girl*, that aired November 9, 2009, a sexual threesome was portrayed involving one young man and two young women. Ads for the upcoming episode angered parents and activist groups who tried to convince CW affiliates not to air it (“*Gossip Girl*’ threesome”, 2010). Despite activist attempts to stop the airing, the episode aired as did subsequent episodes that showed the three characters dealing with the ramifications of their sexual decision; ones that can most definitely be defined as negative. The search for stimulus materials did not involve a content analysis, but it does suggest that awareness of the sexual portrayals on programs targeted at younger audiences is needed. Although consequences might be positive at first, the entire storyline needs to be coded over multiple episodes so that the comprehensive results of sexual decision can be properly classified.

### *Limitations*

There are a few limitations specific to this study that need to be mentioned. The first involves episode selection for the different treatment conditions. Early in the design stages of this study, the goal was to make the experience as natural as possible for the participants and so the plan was to show the episodes in their entirety. As such, during the search for appropriate stimulus material, there were many times when effective portrayals of sex and its consequences were eliminated because they were contaminated by other storylines contained in the episode. Based on time constraints for the study (the individual participants were to receive research participation credit for one hour only), the episodes had to be edited to fit within the time frame available. Episode selection had already taken place via the manipulation check and it was too late to start the process over. In the end, that meant that some strong stimulus material was cut, especially some effective examples of positive consequences. Better stimulus selection might have produced stronger or more statistically significant results.

The second limitation also involves a timing issue. Since full episodes were shown in the manipulation check, there was not enough time to pretest the scales used in the experiment. Pretested and then revised scales, especially in regards to the HBM constructs, could have allowed for stronger reliability in that items could have been tested in advance. Also in regards to scales, a different measure of the consequences of sex portrayed in the episodes may have produced stronger results. Three items were used to test the varying levels of consequences in each episode (negative, positive, and a mix of both), which seemed to cause some confusion for the participants as several questions resulted from these questions when participants were completing the posttest.

Some other limitations in regards to this study, and similar ones of its kind, need to be mentioned briefly. The study was conducted at one location with a fairly uniform demographic group. Conducting similar studies at other college campuses would increase the generalizability and representativeness of the college women explored in the sample (Deshpande et al., 2009). However, the sample used in the study is somewhat reflective of many young, white, female college students across the United States, but might not be generalizable to larger ethnic-group populations. One reason may be that minority audiences might not relate as closely to white characters. The context of testing for responses in an experiment setting may not reach the intended results as the participants watched the content in a somewhat larger group setting than is typical for most viewing experiences. As such, the participants may not have been completely comfortable responding to some of the personal questions. Pen and paper measures aimed to assess very personal qualities may result in less than reliable responses if participants perceive that others could view their responses. Also important to note are the limitations based on the use of anonymous self-reported data (Chew et al., 2002). Even though this method of collecting

information on sensitive topics such as sexual practice is common, the validity can be called into question at least on a small level (Steers et al., 1996).

The two final limitations to mention are somewhat specific to this study. First, the sample was much smaller than originally intended this decrease the power of the findings. Each condition only contained one episode and as few as 36 participants. The initial plan was to show two different episodes per condition with at least 60 in each condition and about 30 participants viewing each episode. Filling the study proved to be a difficult task as there were several competing studies (theses and others). Additionally, this experimental opportunity was offered fairly early in the semester when students may not be looking for extra credit research opportunities as regularly. With a larger sample of students and two episodes being shown in each condition, more significant results might have been found.

The last limitation to mention concerns the study of health beliefs. When trying to analyze health beliefs, one limitation to note is that those beliefs are in flux and continuously evolving. Previous research has shown that beliefs about health have a very dynamic nature and can be modified on a consistent basis via different interactions with specific events and individuals (Chew et al., 2002). Many factors need to be considered when studying health beliefs and, even though it is very difficult to do, that was one of intentions of the study.

#### *Future Research*

There are multiple avenues to take if one considers this study a springboard for future research. Revising this study to alleviate some of the limitations mentioned above is an obvious area to start, but the focus of this section will stick to other avenues. The first avenue to mention could be to study other health-related topics that are of more concern, or higher severity, to young women. Studying topics that young, college-educated women might find more severe

than pregnancy, such as HIV/AIDS, skin cancer, or breast cancer may produce more pronounced results. As mentioned earlier, including young women of different ethnic groups should also enlighten the research. Along similar lines, switching up the age groups tested or including a range of different age groups might increase understanding of the use of the HBM. Younger age groups such as high school girls or more mature women would allow for interesting comparisons. Even testing at ages similar to those in this study (around 18 to 24) with different education attainment, family income levels, or health insurance access could add an interesting dimension and reveal additional factors related to the HBM.

Two key elements that were not tested for in this study that may prove to be enlightening in other studies of this kind could be included in the future. Those elements are *salience* and a combined measure of perceived susceptibility and perceived severity known as *perceived risk appraisal*. The first key element is salience, which concerns the level of importance an individual feels toward the health behavior. Some other research studies assess salience of the health issue when assessing elements of the HBM (Chew, Palmer & Kim, 1998). A salience measure was not included in this study, but might have been able to clarify some of the results had it been. The second key element is perceived risk appraisal. As noted earlier, in some HBM studies perceived susceptibility and perceived severity are grouped together in a single tenet known as perceived risk appraisal. The main reason for this grouping is to show that individual assessment associated with the risk of a specific illness concerns both susceptibility and severity. Even though most researchers treat severity and susceptibility as distinct constructs (Mattson, 1999), it could prove to be interesting if the two constructs were combined into one measure.

Another avenue to mention would be to involve male participants in a study of this nature. The main goal of that change would be to test gender differences. The possibility of

including male participants in this study was discussed early on, but that would have resulted in a recruitment dilemma since the research participation pool is comprised largely of female students. However, other comparisons would have diminished the focus on the variables related to the HBM, which was the main focus of this thesis. Studies that are organized specifically to look at correlational relationships with behavioral, attitudinal, and media consumption constructs by age or ethnicity would be a natural next step of this study, which would reveal a clearer understanding of all young women (Deshpande et al., 2009). Results from such expanded studies could help to clarify what variables are most important to test when using the HBM.

The two final areas for future research that will be discussed here involve a change in content and a change in method. In regards to content, this study used scripted, prime time television dramas that are targeted (in part) to younger audiences that are high school and college aged. Varied content might produce different results when used in experiment design like the one used in this study. Other prime time entertainment content such as sitcoms or reality programming could be interesting in this context. Even news programs, such as nightly news programs or news magazine programs that discuss the consequences of sex might be helpful to promote health behavior change. In addition, the use of film clips from different movies that also discuss the health-related topics could prove to be useful. In regards to method, there could be quite a few benefits to exploring the HBM through qualitative methods. The richness of qualitative methods may provide some unique findings and might even counter some of the problems of quantitative HBM research methods. The reason why qualitative methods could work well in the context of the HBM is that both qualitative methods and the HBM focus on individual-level factors. Of course, the discussion of some sensitive (as well as possibly embarrassing) health topics in focus groups and interviews might not always be ideal, but the

wealth of information that could be revealed using qualitative research might give researchers a better understanding of which variables are most important to consider in research that involves the Health Belief Model.

### *Conclusions and Contributions*

Television programs that contain depictions of sex and its consequences continue to be an important area for study and analysis. On television, new factors are being shown and discussed all the time and prime time television continues to push the limits on what they can do with storylines involving sexual behavior. In February of this year, it was announced that Bristol Palin, the 19 year-old daughter of former Republican vice-presidential candidate Sarah Palin, would make her acting debut on *The Secret Life of the American Teenager* when the third season of the program premieres this summer. Bristol Palin gave birth to her son Tripp in December 2008. She will play herself on the program and will befriend one of the main characters, Amy, who is also a teenage mother. *The Secret Life of the American Teenager* is an ABC Family series that focuses on teen issues, including teen pregnancy, and has received criticism for its portrayals of sex and its consequences over the years. In regards to Palin, some commend her decision to appear on the show while others call her a hypocrite since she promotes abstinence and has had a child of her own (Kinon, 2010). The controversy surrounding this story and the one mentioned earlier about *Gossip Girl* just show how important it is that researchers continue to study the effects of viewing different depictions of sex and sexual decision consequences.

Findings from this study showed that viewing sexual portrayals in prime time television programs that contained valenced levels of consequences (positive and negative) did produce different results concerning some of the key constructs of the HBM. Were these results enough to promote behavior change? That fact remains to be seen, but what we do know is that cues to

action, like content found in entertainment television programs, can serve as part of the process that leads to that eventual change. This study was able help move scholarship forward by showing that the HBM continues to be essential to the study of preventive actions and other health behavior changes that take place. Even though it was developed more than 50 years ago, the HBM remains an advantageous theoretical framework.

This study also contributes to research by demonstrating the relationship of the HBM with various individual level behaviors, attitudes, and media consumption variables. Scholars should not choose to abandon the HBM model, but instead help to define a clearer framework for the field of study as a whole. This thesis was able to shine a light on the need for comparable scales with high reliability measures to test the HBM constructs as well as the need for proper definition of what key variables need to be included in studies that use the HBM.

One of the reasons that the HBM continues to have an impact is that its basic framework has been adapted to many health issues over time. But questions about the HBM's applicability to different health issues or behavior change scenarios persist. Will the HBM work the same for weight loss as it does for cancer? What are the differences when using it in the context of pregnancy versus the contraction of HIV/AIDS? And can the same principles be applied when it is used for swine flu, during its height of media coverage, versus the regular seasonal flu or the common cold? Different extremes exist concerning multiple health issues and different steps are needed to apply this theory in those diverse contexts. Understanding of how this is done properly needs to be available to all who wish to use the HBM to understand how and why health behavior change happens or does not happen. Questions will continue to persist, particularly about the utility of the HBM, as contexts and circumstances change relative to various health behavior outcomes. It would be more difficult to test the HBM in an experimental setting with

younger audiences or those with low literacy levels as adjusting research questionnaires or methods would require additional work to ensure reliability and validity of new procedures. However, that should not stop researchers from attempting these important comparisons. If scholars and researchers are able to adapt the theory to the different extremes in health-related topics and to a vast array of different audiences, then the Health Belief Model will continue on as an effective tool of study for another fifty years.

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Table 1.

*Results of Sexual Consequence Valence Evaluations for Manipulation Check.*

	<i>N</i>	SA	A	NO	D	SD
The Heartbreak	7	1	6	0	0	0
The Giving Tree	5	2	3	0	0	0
The Ties That Bind (negative)	8	3	5	0	0	0
Heaven and Hell	6	0	3	3	0	0
It Ain't Easy Being J.D. McCoy	8	0	8	0	0	0
Mortal (positive)	10	2	8	0	0	0
No Sure Thing (full version)	7	1	6	0	0	0
No Sure Thing (edited version)	10	2	7	1	0	0
Ballad (mixed)	9	2	7	0	0	0

*N* = Total number of participants in the manipulation check.

SA = Number of participants who strongly agreed with valence of consequences.

A = Number of participants who agreed with valence of consequences.

NO = Number of participants who neither agreed nor disagreed with valence of consequences.

D = Number of participants who disagreed with valence of consequences.

SD = Number of participants who strongly disagreed with valence of consequences.

Manipulation check was considered valid if all respondents, or the overwhelming majority, strongly agreed or agreed with the direction of the valenced sexual consequences portrayed.

Table 2.

*Mean and Standard Deviation of HBM Constructs Across Conditions.*

	Negative	Positive	Mixed	Control
Perceived Susceptibility	$M = 3.72;$ $SD = .95$	$M = 3.53;$ $SD = 1.15$	$M = 3.67;$ $SD = .94$	$M = 3.81;$ $SD = 1.01$
Perceived Severity	$M = 1.83;$ $SD = 1.07$	$M = 1.38^a;$ $SD = .86$	$M = 1.60;$ $SD = 1.05$	$M = 1.61;$ $SD = .90$
Perceived Benefits	$M = 3.49;$ $SD = .78$	$M = 3.80^a;$ $SD = .58$	$M = 3.67;$ $SD = .65$	$M = 3.74;$ $SD = .48$
Perceived Barriers	$M = 4.00;$ $SD = .56$	$M = 3.78;$ $SD = .65$	$M = 3.94;$ $SD = .44$	$M = 3.97;$ $SD = .67$
Self-Efficacy	$M = 3.83;$ $SD = .83$	$M = 3.87;$ $SD = .76$	$M = 3.96;$ $SD = .72$	$M = 3.89;$ $SD = .78$

<sup>a</sup> t-test indicates significance at  $p \leq .05$  level.

Table 3.

*Correlation Results between Health Motivation and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Negative	.227	-.235	.114	.003	.005
Positive	.116	.280	-.082	.293	.114
Mixed	-.209	-.281	.188	.255	.414**
Overall	-.019	-.083	.105	.162*	.099

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 4.

*Correlation Results between Sexual Permissiveness and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Negative	.372*	-.042	-.123	-.192	-.338*
Positive	.471**	.233	-.260	-.237	-.041
Mixed	.390**	.100	-.250	.130	.022
Overall	.362**	.104	-.211**	-.169*	-.191*

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 5.

*Correlation Results between Sexual Practice and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Negative	.287	-.315*	-.432**	-.426**	-.221
Positive	.134	.132	-.055	-.315	-.388*
Mixed	.313*	.064	-.179	-.255	-.068
Overall	.187*	-.051	-.221**	-.294**	-.211**

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 6.

*Correlation Results between Religiosity and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Negative	.250	.288	-.302	-.260	-.190
Positive	.082	-.147	-.166	-.191	-.089
Mixed	-.015	-.273	.002	-.245	-.243
Overall	.066	.054	-.203*	-.162*	-.129

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 7.

*Correlation Results between Moral Opposition and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Negative	.058	-.042	-.230	-.174	-.158
Positive	.110	-.175	-.005	-.366*	-.345*
Mixed	.029	.244	-.028	.219	.139
Overall	.068	.066	-.122	-.072	-.065

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 8.

*Correlation Results between Media Consumption and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Negative	-.148	.045	.343*	.123	-.102
Positive	-.120	.079	-.068	-.119	-.262
Mixed	-.125	-.035	.130	.077	.138
Overall	-.123	.044	.156	-.117	-.078

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 9.

*Correlation Results between Liking and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Negative	-.252	-.218	.411**	.193	.096
Positive	.174	-.007	.203	-.199	-.135
Mixed	-.022	.155	-.016	-.059	-.052
Overall	.006	-.035	.187*	.025	.030

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 10.

*Correlation Results between Reality and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Negative	-.210	-.082	.090	.056	.149
Positive	.057	.011	-.127	-.106	.061
Mixed	.012	-.059	.151	.299	.054
Overall	-.059	-.028	.039	.070	.055

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 11.

*Correlation Results between Familiarity and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Negative	.017	-.312*	.209	.094	-.024
Positive	.299	-.037	.071	-.130	-.263
Mixed	.103	.135	.119	.022	-.095
Overall	.047	-.017	.066	.062	-.029

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 12.

*Correlation Results between Connection and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Negative	-.189	-.359*	.255	.040	-.134
Positive	.258	.259	.271	-.065	-.022
Mixed	-.145	-.080	.198	-.194	-.013
Overall	-.073	-.130	.218**	-.020	.010

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 13.

*Control Group Correlation Results for Variables and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Health Motivation	-.250	-.030	.282	.085	-.128
Permissiveness	.174	.134	-.287	-.347*	-.392*
Sexual Practice	.152	-.061	-.164	-.139	-.098
Religiosity	-.068	.250	-.275	-.059	-.001
Moral Opposition	.131	.116	-.250	.015	.032
Media Consumption	-.045	.192	.135	-.386*	-.101
Liking	-.092	-.194	.278	.002	.160
Reality	-.311	-.167	.052	-.158	-.058
Familiarity	-.254	-.076	.083	.071	.158
Connection	-.415*	-.117	-.366*	-.038	.219

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 14.

*Negative Condition Correlation Results for Variables and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Health Motivation	.227	-.235	.114	.003	.005
Permissiveness	.372*	-.042	-.123	-.192	-.338*
Sexual Practice	.287	-.315*	-.432**	-.426**	-.221
Religiosity	.250	.288	-.302	-.260	-.190
Moral Opposition	.058	-.042	-.230	-.174	-.158
Media Consumption	-.148	.045	.343*	.123	-.102
Liking	-.252	-.218	.411**	.193	.096
Reality	-.210	-.082	.090	.056	.149
Familiarity	.017	-.312*	.209	.094	-.024
Connection	-.189	-.359*	.255	.040	-.134

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 15.

*Positive Condition Correlation Results for Variables and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Health Motivation	.116	.280	-.082	.293	.114
Permissiveness	.471**	.233	-.260	-.237	-.041
Sexual Practice	.134	.132	-.055	-.315	-.388*
Religiosity	.082	-.147	-.166	-.191	-.089
Moral Opposition	.110	-.175	-.005	-.366*	-.345*
Media Consumption	-.120	.079	-.068	-.119	-.262
Liking	.174	-.007	.203	-.199	-.135
Reality	.057	.011	-.127	-.106	.061
Familiarity	.299	-.037	.071	-.130	-.263
Connection	.258	.259	.271	-.065	-.022

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 16.

*Mixed Condition Correlation Results for Variables and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Health Motivation	-.209	-.281	.188	.255	.414**
Permissiveness	.390**	.100	-.250	.130	.022
Sexual Practice	.313*	.064	-.179	-.255	-.068
Religiosity	-.015	-.273	.002	-.245	-.243
Moral Opposition	.029	.244	-.028	.219	.139
Media Consumption	-.125	-.035	.130	.077	.138
Liking	-.022	.155	-.016	-.059	-.052
Reality	.012	-.059	.151	.299	.054
Familiarity	.103	.135	.119	.022	-.095
Connection	-.145	-.080	.198	-.194	-.013

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 17.

*Combined Correlation Results for Variables and the HBM Constructs.*

	Susceptibility	Severity	Benefits	Barriers	Self-Efficacy
Health Motivation	-.019	-.083	.105	.162*	.099
Permissiveness	.362**	.104	-.211**	-.169*	-.191*
Sexual Practice	.187*	-.051	-.221**	-.294**	-.211**
Religiosity	.066	.054	-.203*	-.162*	-.129
Moral Opposition	.068	.066	-.122	-.072	-.065
Media Consumption	-.123	.044	.156	-.117	-.078
Liking	.006	-.035	.187*	.025	.030
Reality	-.059	-.028	.039	.070	.055
Familiarity	.047	-.017	.066	.062	-.029
Connection	-.073	-.130	.218**	-.020	.010

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Appendix A.  
Manipulation Check Questionnaire.

**Liking**

7-point Likert scale was used.

1. Appealing/Unappealing
2. Informative/Uninformative
3. Unexciting/Exciting
4. Boring/Interesting
5. Good/Bad
6. Clear/Confusing
7. Unattractive/Attractive
8. Likable/Dislikable
9. Negative/Positive
10. Useful/Useless

**Reality**

5-point scale from strongly agree to strongly disagree.

1. Besides any fantasy elements, the television show I just viewed shows life as it really is. (r)
2. Television programs similar to the one you just viewed present things as they really are in life. (r)
3. If I see something on a television show like this I can be sure it really is that way. (r)
4. Television shows like this one let me see how other people live. (r)
5. Television shows like this one let me see what happens in other places as if I'm really there. (r)

**Consequences of Sexual Decision**

5-point scale from strongly agree to strongly disagree.

1. This episode featured positive consequences regarding the decision to have sex for the characters involved. (r)
2. This episode featured a mix of positive and negative consequences regarding the decision to have sex for the characters involved.
3. This episode featured negative consequences regarding the decision to have sex for the characters involved. (r)

**Connection**

5-point scale from strongly agree to strongly disagree.

1. The outcomes of sexual decision for the lead characters involved were positive in this episode.
2. The outcomes of sexual decision for the lead characters involved were negative in this episode.
3. The outcomes of sexual decision for the lead characters involved were a mix of positive and negative in this episode.
4. In the episode, the lead characters involved in sexual decision were attractive.
5. I can relate to the lead characters and the sexual decision they faced.
6. I was interested in the episode I viewed.

7. I am interested in viewing future episodes of the show I saw.
8. I would like to watch future episodes of this program to learn more about the lead characters involved in sexual decision.
9. I regularly watch the program from which the episode was selected.

**Age**

1. 18
2. 19
3. 20
4. 21
5. 22
6. 23
7. 24

**Ethnicity**

1. White
2. Black
3. Asian
4. Hispanic/Latin American
5. Indian Subcontinent
6. Middle Eastern/Arabic
7. Native American
8. Pacific Islander
9. Other

**Program Identification**

Six options: Everwood, Friday Night Lights, Glee, The O.C., Smallville, or Supernatural.

1. The episode I just viewed came from which of the following television shows?

Appendix B.  
Pretest Questionnaire.

**Health Motivation**

5-point scale from strongly agree to strongly disagree.

1. I am concerned about sexual health hazards and try to take action to prevent them. (r)
2. I try to protect myself against sexual health hazards I hear about. (r)
3. I don't take any action against sexual health hazards I hear about until I know I have a problem.
4. I'd rather enjoy life than try to make sure I'm not exposing myself to a sexual health hazard.
5. I don't think sexual health hazards I hear about will happen to me.

**Sexual Attitude**

5-point scale from strongly agree to strongly disagree.

Sexual Permissiveness

1. Casual sex is acceptable.
2. I would like to have sex with many partners.
3. One-night stands are sometimes very enjoyable.
4. It is okay to have ongoing sexual relationships with more than one person at a time.
5. Extensive premarital sexual experience is fine.
6. It is okay for sex to be just good physical release.
7. Sex without love is meaningless. (r)

Sexual Practice

1. Birth control is part of responsible sexuality. (r)
2. A woman should share responsibility for birth control. (r)
3. A man should share responsibility for birth control. (r)
4. Sex education is important for young people. (r)

**Religiosity (Religious Beliefs)**

5-point scale from strongly agree to strongly disagree.

1. I consider myself an active member of my church or religious organization. (r)
2. I consider myself a religious person. (r)
3. My religion's deity (e.g. God, Allah, etc.) is important in my life. (r)
4. I find comfort and strength from religion. (r)

**Moral Opposition to Birth Control**

5-point scale from strongly agree to strongly disagree.

1. I have no moral objections to using contraceptives like condoms.
2. I have no moral objections to using contraceptives like birth control pills.
3. Abortion is an acceptable decision when a woman finds out that she is pregnant.
4. Adoption is an acceptable decision when a woman finds out that she is pregnant.

**Pregnancy Prevention Knowledge**

1. Please use the space provided to share you perception of how a pregnancy would affect your life: To me, at this point in my life, a pregnancy would.... (open-ended)

**TV Viewing (Time Spent)**

1. On an average weekday, about how much time do you spend watching television? \_\_\_\_\_ hours
2. On an average weekend day, about how much time do you spend watching television? \_\_\_\_\_ hours

**Age**

1. 18
2. 19
3. 20
4. 21
5. 22
6. 23
7. 24

**Ethnicity**

1. White
2. Black
3. Asian
4. Hispanic/Latin American
5. Indian Subcontinent
6. Middle Eastern/Arabic
7. Native American
8. Pacific Islander
9. Other

**Participant Identification Code**

Create a confidential participant identification code to link the data from this online survey to the data from the questionnaire you will fill out in Shanks 043. This code includes the first two letters of your last name and the last four digits of your student ID number. For example, if my last name was Smith and my student ID number was 814515241 then my participant identification code would be sm5241.

Appendix C.  
Consent Form.

## VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

### INFORMED CONSENT FOR PARTICIPANTS IN RESEARCH PROJECTS INVOLVING HUMAN SUBJECTS

**Title of Project:** Prime Time Television Programs and Viewer Attitudes

**Investigators:** Drew Shade and Dr. John C. Tedesco

#### **I. Purpose of this Research Project**

This study will explore participants' thoughts and attitudes after viewing selected episodes of different primetime television programs. Some 300 female, undergraduate students registered with the Department of Communication's research participation system are being invited to participate in this study in some way.

#### **II. Procedures**

You will read and consent to the research as described in this form. Study procedures include completing a series of screening questions online (part 1) and attending an experimental session in Shanks 043 (part 2). In each case, you must consent to participate before answering any research questions. Answers will be confidentially given and collected. The research session begins online and should last about 10 minutes while the second part of the research session will be completed in Shanks 043. The study will last about 1 hour.

#### **III. Risks**

Emotional discomfort, if any, will be very minimal and not much greater than that experienced in everyday life. It is possible that some of the television episodes viewed or questions asked will be emotionally distressing. However, we do not expect that the emotional reaction will be any different from that experienced when viewing a typical television episode. In addition, you will be asked personal/sensitive questions regarding your sexual behavior and attitudes.

#### **IV. Benefits**

You may gain an appreciation of the conduct of research in communication. In addition, scholars and practitioners stand to gain a greater understanding of the viewing of primetime television programs and any possible effects on the audience. No promise or guarantee of benefits has been made to any participant to encourage them to participate. However, the episodes may be informative about health behaviors, outcomes, and options.

#### **V. Extent of Anonymity and Confidentiality**

No individuals will be identified in reports of the research, and all information used in the study will be accessible only to the researchers. Even though you will be assigned a study code using the first two initials of your last name and the last four digits of your student ID number, your name will not be associated with this study code within the research team's records.

**VI. Compensation**

In exchange for participation in this study, you will receive course credit as specified by the instructor of the course for which the credit is designated.

**VII. Freedom to Withdraw**

You are free to withdraw from this study at any time without penalty. If choosing to withdraw, you will receive credit for the amount of time spent in the study. In addition, you may refuse to answer any survey question without penalty as well.

**VIII. Participant's Responsibilities**

I voluntarily agree to participate in this study. I understand that I have the following responsibilities: to participate honestly and earnestly to the best of my abilities.

**IX. Participant's Permission**

I have read the consent form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent.

---

 Participant signature

---

 Date

Should I have any questions about this research or its conduct, research subjects' rights, and whom to contact in the event of a research-related injury to the subject, I may contact:

**Investigator:**

Drew Shade

shaded@vt.edu

**Faculty Advisor and Departmental Reviewer:**

Dr. John C. Tedesco

tedesco@vt.edu

**Chair, Virginia Tech Institutional Review Board:**

Dr. David M. Moore

moored@vt.edu

Office of Research Compliance

540-231-4991

2000 Kraft Drive, Suite 2000 (0497)

Blacksburg, VA 24060

Appendix D.  
Posttest Questionnaire.

**Liking**

7-point Likert scale was used.

11. Appealing/Unappealing
12. Informative/Uninformative
13. Unexciting/Exciting
14. Boring/Interesting
15. Good/Bad
16. Clear/Confusing
17. Unattractive/Attractive
18. Likable/Dislikable
19. Negative/Positive
20. Useful/Useless

**Reality**

5-point scale from strongly agree to strongly disagree.

6. Besides any fantasy elements, the television show I just viewed shows life as it really is. (r)
7. Television programs similar to the one you just viewed present things as they really are in life. (r)
8. If I see something on a television show like this I can be sure it really is that way. (r)
9. Television shows like this one let me see how other people live. (r)
10. Television shows like this one let me see what happens in other places as if I'm really there. (r)

**Familiarity**

5-point scale from strongly agree to strongly disagree.

1. I am familiar with the television program that I just viewed. (r)
2. I watch this television program often. (r)
3. I enjoy watching this television program. (r)
4. I am familiar with the episode that I just viewed. (r)
5. I liked the episode that I just viewed. (r)
6. This television program is typical of ones that I watch regularly. (r)

**Perceived Susceptibility**

5-point scale from strongly agree to strongly disagree.

1. With sexually transmitted diseases getting more common all the time, a young adult who worries about it is being realistic. (r)
2. Using a contraceptive to prevent unplanned pregnancy is a good thing to do. (r)
3. It is extremely likely that if I have unprotected sex that it will lead to pregnancy. (r)
4. My chances of getting a sexually transmitted disease in the next few years are high.
5. Getting pregnant is currently a physical possibility for me.
6. I worry a lot about getting pregnant.
7. Based on my current sexual behaviors, I am susceptible to getting pregnant.

**Perceived Seriousness/Severity**

5-point scale from strongly agree to strongly disagree.

1. If a man gets a woman pregnant, it's not a big problem since the partners can always get married.
2. Unplanned pregnancy can be taken care of pretty easily with an abortion. (r)
3. If a woman has an unplanned pregnancy, it's not a big problem since she can raise her baby alone.
4. When I think about getting a sexually transmitted disease I feel nauseous. (r)
5. Problems I would experience from getting a sexually transmitted disease would last a long time. (r)
6. Pregnancy at this time in my life would result in serious negative consequences for me. (r)

**Perceived Benefits**

5-point scale from strongly agree to strongly disagree.

1. If a man uses birth control, his partner knows he really cares about her. (r)
2. The use of contraception improves a relationship. (r)
3. If a woman uses birth control, her partner will know she really cares about herself. (r)
4. I have a lot to gain by using contraceptives. (r)
5. Using birth control will help me to avoid getting pregnant. (r)
6. Using contraceptives each time I have sex may help me avoid getting a sexually transmitted disease. (r)

**Perceived Barriers**

5-point scale from strongly agree to strongly disagree.

1. The use of contraceptives makes sexual intercourse seem dirty.
2. I have no religious or moral objection to contraception. (r)
3. The whole idea of birth control is embarrassing to me.
4. I am afraid that I would not be able to use contraceptives correctly.
5. Being tested for a sexually transmitted disease would be embarrassing.
6. Being tested for a sexually transmitted disease would take too much time.
7. I do not feel I can take a home pregnancy test correctly.
8. I would be uncomfortable having a pregnancy screening at a health clinic (e.g., Schiffert).

**Self-efficacy**

5-point scale from strongly agree to strongly disagree.

1. I have purchase some form of contraceptive. (r)
2. I am confident I know how to use contraceptives. (r)
3. I can perform a home pregnancy test correctly. (r)
4. I have purchased a home pregnancy test. (r)
5. I would know how to determine if I was pregnant. (r)
6. I am sure of the steps to take to avoid pregnancy. (r)

**Connection**

5-point scale from strongly agree to strongly disagree.

1. The outcomes of sexual decision for the lead characters involved were positive in this episode.

2. The outcomes of sexual decision for the lead characters involved were negative in this episode.
3. The outcomes of sexual decision for the lead characters involved were a mix of positive and negative in this episode.
4. In the episode, the lead characters involved in sexual decision were attractive.
5. I can relate to the lead characters and the sexual decision they faced.
6. I was interested in the episode I viewed.
7. I am interested in viewing future episodes of the show I saw.
8. I would like to watch future episodes of this program to learn more about the lead characters involved in sexual decision.
9. I regularly watch the program from which the episode was selected.

### **Consequences of Sexual Decision**

5-point scale from strongly agree to strongly disagree.

4. This episode featured positive consequences regarding the decision to have sex for the characters involved. (r)
5. This episode featured a mix of positive and negative consequences regarding the decision to have sex for the characters involved.
6. This episode featured negative consequences regarding the decision to have sex for the characters involved. (r)

### **Program Identification**

Five response options: Everwood, Friday Night Lights, Glee, The O.C., or Smallville

1. The episode I just viewed came from which of the following television shows?

Appendix E.  
Debriefing Sheet.

DEBRIEFING STATEMENT: PRIME TIME TELEVISION PROGRAMS AND VIEWER ATTITUDE

Thank you for participating! With this study, we are evaluating the effects of viewing valenced (positive and negative) levels of consequences based on sexual decision. In addition, we were interested in the impact these different portrayals have on the health beliefs of the audience.

Approximately 300 students have been asked to take part in this study in some way. In the end, we expect that the findings of this study will help us better understand how different types of portrayals can impact our assumptions about the consequences of sexual decision.

If you are interested in learning more about sexual socialization, see the following:

- Cope-Farrar, K. M., & Kunkel, D. (2002). Sexual messages in teens' favorite prime-time television programs. In J. D. Brown, J. R. Steele, & K. Walsh-Childers (Eds.), *Sexual teens, sexual media: Investigating media's influence on adolescent sexuality* (pp. 59–78). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Eyal, K., & Kunkel, D. (2008, June). The effects of sex in television drama shows on emerging adults' sexual attitudes and moral judgments. *Journal of Broadcasting & Electronic Media*, 52(2), 161-181.
- Greenberg, B., & Hofschire, L. (2000). Sex on entertainment television. In D. Zillmann & P. Vorderer (Eds.), *Media entertainment: The psychology of its appeal* (pp. 93–112). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Ward, L. (2003). Understanding the role of entertainment media in the sexual socialization of American youth: A review of empirical research. *Developmental Review*, 23, 347–388.

If you have any questions about this study or would like to learn more about the findings (at the end of the semester), please feel free to contact the investigators: Drew Shade (shaded@vt.edu) and Dr. John C. Tedesco (tedesco@vt.edu).

To maintain the validity of our study, we ask that you do not share any information about this study with other potential participants until the semester has ended. Thank you!