THE EXAMINATION OF SAFE SEX MESSAGE APPEALS, SEX, AND EMOTIONAL RESPONSES ON COLLEGE STUDENTS’ CONDOM USE ATTITUDES, INTENTIONS, AND SELF-EFFICACY

A DISSERTATION IN Counseling Psychology

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by

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ABSTRACT

Inconsistency in the sexual risk prevention literature indicated that there was a need for additional research identifying factors that will increase safe sex behaviors; particularly, condom use, in young adults. The present study attempted to expand the sexual risk prevention literature by examining the impact of different safe sex advertisements and biological sex on the condom use attitudes, condom use intentions, condom use self-efficacy, negative and positive emotional responses of young adults as well as explore the influence of negative and positive emotional responses on the condom use attitudes, condom use intentions, and condom use self-efficacy of young adults. Five hypotheses were examined using a sample of 203 young adults. MANOVA and regression analyses were conducted to examine the study hypotheses. There was partial support for Hypotheses 1 and 3; indicating that female participants reported more positive condom use attitudes than male participants, participants in the negative emotional advertisement and positive emotional advertisement groups reported more positive condom use attitudes than those in the rational advertisement group, and that the negative emotion of guilt was related to condom use attitudes. Hypotheses
2, 4, and 5 were not upheld. Overall, the present study results provide some support for the influence of biological sex, advertisement type, and guilt on the condom use attitudes of young adults. The need to explore different safe sex advertisement formats and more diverse samples of young adults was discussed, including implications and recommendations for future research.
The faculty listed below, appointed by the Dean of the School of Education, have examined a
dissertation titled “The Examination of Safe Sex Message Appeals, Sex, and Emotional
Responses on College Students’ Condom Use Attitudes, Intentions, and Self-Efficacy,”
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CHAPTER 1

INTRODUCTION

Concerns are prevalent regarding the sexual behavior of young individuals. Though there have been recent declines in the sexual risk behavior of youth (Broderick & Blewitt, 2009), their behavior remains an issue. Contributing to these widespread concerns are reports that, compared to older adults, sexually active adolescents (10 to 19 year olds) and young adults (20 to 25 year olds) are at higher risk for acquiring sexually transmitted diseases (STDs) (Centers for Disease Control and Prevention, 2009; Centers for Disease Control and Prevention, 2005). Furthermore, while representing 25% of the sexually active population, 15 to 24 year olds acquire nearly one half of all new STDs (Centers for Disease Control and Prevention, 2009; Centers for Disease Control and Prevention, 2005). Human immunodeficiency virus (HIV) infection is the fifth leading cause of death for Americans between the ages of 25 and 44, and at least half of all new HIV infections occur among people under age 25, with the majority infected through sexual activity (Opt & Loffredo, 2004). Additionally, over three-quarters (76%) of all unplanned pregnancies occur to women in their teens and twenties (Unplanned Pregnancy: Fast Facts, 2008). Researchers suggest that college students tend to be more sexually adventurous, are more likely to have multiple partners and use condoms inconsistently (Centers for Disease Control and Prevention, 2005; Lewis, Malow & Ireland, 1997; Lewis, Miglez-Burbano, & Malow, 2009; Marston & King, 2006; Opt & Loffredo, 2004).

Taking into the consideration the high rates of sexual risk behavior, the present study focused on factors that increased safe sex behaviors; in particular, condom use. More specifically, the present study examined the influence of different safe sex message appeals
and emotional reactions on young men and women’s condom use attitudes, intentions and self-efficacy. Since young adults tend to engage in high rates of sexual risk behaviors which, subsequently, result in high rates of health consequences, they were used as the sample population. The remainder of the introduction introduced the variables under investigation and discussed the rationale for the present study.

Sexual risk behavior is often identified in a variety of ways. For example, sexual risk behavior can be identified through the behavior itself; for instance, unprotected vaginal, oral, or anal intercourse or inconsistent condom use (Hall, Holmqvist & Sherry, 2004). Secondly, it is often identified through the nature of the partner; specifically, whether the partner is a nonexclusive, casual partner (Hall et al., 2004). Thirdly, sexual risk behavior can also range from multiple casual lifetime and/or current sexual partners to sexual intercourse under the influence of substances (e.g., alcohol or cocaine). Finally, sexual risk behavior can include a combination of the aforementioned factors (Hall et al., 2004). Engagement in sexual risk behaviors is evidenced consistently in young adults and has been associated with negative consequences (Centers for Disease Control and Prevention, 2005).

Sexual risk behaviors can lead to a number of negative health consequences (Centers for Disease Control and Prevention, 2005; Malhotra, 2008; Opt & Loffredo, 2004). As mentioned previously, HIV and STD infection and unplanned/unintended pregnancy rates are substantially high among young adults (Centers for Disease Control and Prevention, 2005; Opt & Loffredo, 2004; Unplanned Pregnancy: Fast Facts, 2008). HIV and STD infection can increase the risk of cervix cancer and potential infertility in women (Reardon, 1997). Furthermore, STD infected individuals are at least two to five times more likely than uninfected individuals to acquire HIV infection if they are exposed to the virus through
sexual contact (Centers for Disease Control and Prevention, 2005). Unintended/unplanned pregnancies are a consequence of engaging in sexual risk behaviors and can lead to a number of health complications and adverse effects (Reardon, 1997). For instance, many young females who become pregnant may have abortions. Abortions can result in a number of adverse health complications, including pelvic inflammatory disease (PID), uterine perforation, cervix lacerations, ectopic pregnancies, increased risk of handicapped newborns in future pregnancies and increased risk for breast, cervical, ovarian and liver cancer (Reardon, 1997).

Given the consequences associated with sexual risk behavior among young adults, an examination of young men and women’s attitudes, intentions, and self-efficacy related to safe sex was important. Specifically, it was important to examine factors that will increase safe sex behaviors so as to reduce HIV/STD transmission and other consequential effects of risky sex. Actual sexual behaviors can be difficult to directly examine empirically. Because changes in safe sex attitudes, safe sex intentions, and safe sex self-efficacy have been associated with changes in actual sexual behaviors (Ajzen & Fishbein, 1980; Ajzen, 1991; Bandura, 1977; Opt & Lofredo, 2004), it was more feasible to examine these variables than actual behavior. Taking this information into consideration, the present study focused on the attitudes (i.e., condom use attitudes), intentions (i.e., intent to use condoms), and self-efficacy (i.e., condom use self-efficacy) of young adults. Young men and women’s condom use attitudes, condom use intentions, and condom use self-efficacy was examined because condom use is a strongly encouraged HIV/STD risk preventative/safe sex behavior.

Previous literature has often reported sex, racial, and SES differences in sexual risk behavior as well as sexual attitudes and intentions. Higher estimations of sexual risk behavior
have been reported in males as well as individuals from lower SES (Broderick & Blewitt, 2009; Centers for Disease Control and Prevention, 2009; Kotchick et al., 2001). In particular, as compared to college women, college men are more likely to engage in the following behaviors: greater frequency of sexual intercourse, have early onset of sexual intercourse, have multiple sexual partners, and engage in concurrent substance use and sexual intercourse (Broderick & Blewitt, 2009; Kotchick et al., 2001). College men generally report more negative attitudes towards condom use than college women (Lewis, Miquez-Burbano, & Malow, 2009). Engagement in sexual intercourse is reported to be more common among male adolescents whose parents have lower educational attainment (Santelli, Lowry, Brener, & Robin, 2000). African American college students as compared to Caucasian college students have been reported to engage in greater frequency of sexual intercourse, have early onset of sexual intercourse, and have multiple sexual partners (Broderick & Blewitt, 2009; Lewis et al., 2009; Centers for Disease Control and Prevention, 2005). Additionally, African American college students, as compared to Caucasian college students, are less likely to carry out safer sex intentions (Lewis et al., 2009). Sex differences have also been evidenced in areas such as HIV/STD perception of risk (Lewis et al., 2009; Opt & Loffredo, 2004). For instance, college women reportedly considered HIV/AIDS a more serious problem for college students than did college men. Given that sex, racial, and SES differences exist in the literature, these differences were explored in this study. The inconsistent use of condoms and high rates of negative health consequences (e.g., HIV/AIDS infection) suggest that young adults are in need of intervention. HIV/STD prevention intervention programs have been developed to address this need; however, there
have been discrepancies regarding the effectiveness of intervention programs in eliciting attitude and behavior change (Kirby, Laris, & Rolleri, 2007).

**HIV/STD Prevention Interventions**

Although young adults are informed about the severity of HIV/AIDS, know that transmission can occur from unsafe sex, and are aware of prevention strategies, they continue to engage in sexual risk behaviors (Lewis et al., 2009; Marston & King, 2006; Opt & Loffredo, 2004; Prince & Bernard, 1998). Additionally, young adults tend to be knowledgeable about risks and transmission modes, but many exhibit limited concern regarding risk of personal infection and rarely participate in appropriate safer sex precautions, such as always using latex condoms (Marston & King, 2006; Opt & Loffredo, 2004). HIV/STD prevention interventions have been developed to reduce sexual risk behaviors among young people. However, discrepancies exist regarding the effectiveness of HIV/STD prevention intervention programs in changing sexual risk behaviors (Kirby et al., 2007).

Kirby et al. (2007) reviewed 83 studies that measured the impact of curriculum-based sex and HIV education programs on sexual behavior among youth under age 25. Though certain HIV education programs appeared effective in reducing sexual risk behaviors and increasing preventative behaviors, other programs reported limited or insignificant changes in behaviors. For instance, of the 34 studies examining the number of sexual partners as an outcome factor, 12 (35%) found a decrease in the number of sexual partners, while 21 (62%) found no significant impact, and 1 (3%) found a negative impact (Kirby et al., 2007). Furthermore, of the 54 studies measuring program impact on condom use, almost half (48%) showed increased condom use, with the remaining (52%) showing no significant impact.
(Kirby et al., 2007). Similar inconsistent results were found with outcome measures of initiation of sex, frequency of sex, contraceptive use in general, sexual risk taking, pregnancy rates and STD rates.

Many HIV prevention programs focus on education and increasing knowledge regarding the consequences of sexual risk behavior (Marston & King, 2006). However, inconsistent findings suggest that factors other than increasing knowledge may be important in the reduction of sexual risk behaviors. Message appeals (i.e. the strategy employed to convey a message) and emotional responses have been found to influence attitudes and behaviors; thus, the impact of these factors on the attitudes, intentions, and self-efficacy related to condom use was examined.

**Sexual Risk Prevention Messages and Message Appeals**

A health risk message represents “any message that is intended to shape, reinforce, or change the responses of another, or others” (Cameron, 2009, p. 312) and elicit attitude and behavior change (Perloff, 2001). Sexual health risk messages involve persuading individuals to engage in safe sex. In order to be persuasive, sexual health risk messages must appeal to the intended audience (Perloff, 2001).

The appeal of a message pertains to the means or strategy employed to convey a message (Camm, 2005). The message appeal may influence how the message is received and how one emotionally responds to the message (Perloff, 2001). Though there are various types of messages appeals (e.g., emotional, rational, sexual, humor), emotional appeals and rational appeals have received the most empirical attention (Camm, 2005). Previous literature has particularly examined whether one message appeal (e.g., emotional) is more effective than others (e.g., rational) in eliciting behavioral changes; such as those that prevent the spread of
AIDS (Marchand & Filiatrault, 2002). In general, emotional message appeals are directed towards an individual’s feelings and induce negative and/or positive emotions whereas rational message appeals are directed towards logical decision making and tend to be factual and straightforward in nature (Camm, 2005). Emotional message appeals have often been perceived as more effective than rational message appeals because emotional appeals tend to be better recalled (Dunlop, Wakefield, & Kashima, 2008).

Fear appeals (i.e., negative emotional appeals) have often been used as a message strategy in an effort to increase AIDS prevention behaviors (Perloff, 2001). Fear appeals refer to a “persuasive communication that tries to scare people into changing their attitudes by conjuring up negative consequences that will occur if they do not comply with the message recommendations” (Perloff, 2001, p. 75). Generally, fear messages attempt to appeal to one’s interest in protecting the self against danger, which then elicits the desired behavioral change (Perloff, 2001). However, there is general disagreement in the effectiveness of fear messages in eliciting positive health behaviors (e.g., condom use). Many believe the use of fear appeals is effective for many health issues, as long as the audience is given a constructive way of reducing the fear. An opposing notion is that the fear appeal can have an inhibiting influence; particularly, if the level of fear is too high, one can feel attacked and an avoidance and defensive reaction in the individual can cancel out the message’s persuasive effect (Marchand & Filiatrault, 2002). Other possible consequences of fear messages include eliciting affective responses, such as anger, that will be counterproductive towards attitude and behavioral change (Marchand & Filiatrault, 2002).

Emotional appeals based upon positive emotion are rarely used in risk prevention literature (Marchand & Filiatrault, 2002). Though some believe that positive emotional
appeals have more persuasive effects than negative emotional appeals (Marchand & Filiatrault, 2002), there is limited literature examining the influence of positive emotional appeals. Conversely, rational appeals are often examined in risk prevention literature; however, its effectiveness as compared to emotional appeals is inconclusive (Camm, 2005). Rational appeals tend to be straightforward, factual, and presented in an educational manner with little emphasis on eliciting emotion (Marchand & Filiatrault, 2002).

Marchand and Filiatrault (2002) examined three message appeals in AIDS prevention: a rational strategy, a negative emotional strategy, and a positive emotional strategy. The results suggested that while the rational appeal generated more personal concern for AIDS prevention, the negative emotional appeal had a positive impact on behavior intentions. Interestingly, the positive emotional appeal received the most negative comments related to the commercial execution. Taking the aforementioned information into consideration, this study examined the impact of message appeals (i.e., rational appeal, negative emotional appeal, and positive emotional appeal) on participants’ attitudes, intentions, and self-efficacy related to condom use.

**Emotional Responses**

The role of emotional responses to risk prevention messages is of particular interest because one’s emotional responses may influence one’s condom use attitudes and behaviors. Research examining emotional responses as it relates to sexual risk prevention messages (i.e., safe sex messages) is generally scarce; however, one study illustrated its importance. Dillard, Plotnick, Godbold, Freimuth and Edgar (1996) examined the emotions (e.g., fear, surprise, anger) that were experienced when watching public service announcements about HIV/AIDS and how these emotional responses altered the impact of the message. The authors found that
fear and surprise were associated with message acceptance whereas anger and puzzlement were associated with inhibited message acceptance. Emotional responses may be elicited from prevention messages; specifically, because the message often condemns the actual behavior and states that the behavior must be modified (Marchand & Filiatrault, 2002). Furthermore, as evidenced by the Dillard et al. (1996) study, a variety of emotional responses (i.e., positive and negative) can be elicited from prevention messages (Marchand & Filiatrault, 2002). The Dillard et al. (1996) study highlighted the influence of emotional responses to safe sex messages on message acceptance. Therefore, the present study considered the influence of emotional responses on condom use attitudes, condom use intentions and condom use self-efficacy.

**Study Purpose**

Despite the prevalence of STD/HIV prevention interventions and educational programs, young people continue to engage in sexual risk behaviors at relatively high rates. Furthermore, the risk prevention literature is filled with inconsistency regarding the effectiveness of STD/HIV prevention interventions. The above information indicates that there remains a consistent need for additional research identifying factors that will increase safe sex behaviors in young adults. Factors of importance to the current study were message appeals and emotional responses to sexual risk prevention messages. In an attempt to expand on the risk prevention literature, the present study included the following aims: (a) examine the impact of safe sex advertisements (i.e., rational appeal advertisement, negative emotional appeal advertisement, positive emotional appeal advertisement) and biological sex (i.e., man, woman) on participants’ condom use attitudes, condom use intentions, condom use self-efficacy, negative (i.e., fear, guilt, anger, sadness) and positive (i.e., happiness, surprise)
emotional responses; (b) determine how much of the variance in condom use attitudes was accounted for by negative (i.e., fear, guilt, anger, sadness) and positive (i.e., happiness, surprise) emotional responses; (c) determine how much of the variance in condom use intentions was accounted for by negative (i.e., fear, guilt, anger, sadness) and positive emotional responses (i.e., happiness, surprise); and (d) determine how much of the variance in condom use self-efficacy was accounted for by negative (i.e., fear, guilt, anger, sadness) and positive (i.e., happiness, surprise) emotional responses. Lastly, racial and SES differences were explored in the present study.
CHAPTER 2

REVIEW OF THE LITERATURE

The literature demonstrates that there is a need for empirical research identifying factors that will increase young adults’ safe sex behaviors; in particular, consistent condom use. There is also a need for research that identifies the role and influence of different safe sex message advertisements and emotions on condom use attitudes, intentions, and self-efficacy. The following literature review addressed the sexual behaviors among young adults and discussed the current literature on condom use attitudes, intentions, and self-efficacy, followed by a review of the literature on sexual risk prevention messages, message appeals, and emotional reactions.

Sexual Risk Behavior

Young adults living in the United States engage in high rates of sexual activity (i.e., oral, vaginal, and anal sex with opposite and same sex partners). Specifically, approximately 75% to 90% of young people (i.e., adolescents and young adults ages 15 – 25) in the United States are sexually active (Centers for Disease Control and Prevention, 2009; Lewis et al., 2009). Unfortunately, many young people in the United States engage in sexual risk behaviors (Centers for Disease Control and Prevention, 2005; Lewis et al., 1997; Lewis et al., 2009; Marston & King, 2006; Opt & Loffredo, 2004).

Sexual risk behaviors or “behaviors that pose a threat to the well-being of individuals or groups” (Broderick & Blewitt, 2009, p. 338) can include unprotected vaginal, oral, or anal intercourse or inconsistent condom use (Hall et al., 2004). Opt and Loffredo (2004) found that among sexually active college students, only 35% reported always using latex condoms. Conversely, the Centers for Disease Control and Prevention (2009) found that approximately
55% of young people reported never using condoms during sexual intercourse (Centers for Disease Control and Prevention, 2009).

In addition to inconsistent condom use, sexual risk behavior also includes sexual intercourse with multiple nonexclusive partners and concurrent alcohol and/or substance use and sexual activity (Hall et al., 2004; Lewis et al., 2009). Young people have been reported to have multiple sexual partners (Lewis et al., 2009; Malhotra, 2008). Specifically, approximately 75% of young people have had multiple sexual partners (Malhotra, 2008). Additionally, drinking alcohol has been strongly associated with engaging in risky sex (e.g., having multiple sexual partners) and inconsistently associated with protective behaviors (e.g., condom use); (Cooper, 2002; Lewis et al., 2009).

Lewis et al. (2009) conducted a review of articles examining the sexual risk behavior among college students. The reviewed articles were published between 1997 and 2007 and examined U.S. college students. Articles that examined non-US college students and non-heterosexual college students were not included in the review. Various variables were used to frame the review (e.g., theoretical variables, condom use, gender). Of particular interest to the present study were the findings related to sexual behaviors and attitudes. The results of the review indicated that college students use condoms inconsistently and have multiple sexual partners. Particularly disturbing was the small percentage (i.e., 10%) of college students that have used condoms during every sexual encounter; which indicate that 90% of college students use condoms inconsistently. Almost half of the college students in the reviewed articles did not use condoms during their most recent sexual experience; with further decreases in condom use evidenced when participants engaged in other sexual acts (i.e., oral intercourse, anal intercourse). The review also indicated that alcohol use before
sexual intercourse was found to be predictive of frequent unprotected casual sex with multiple partners. The aforementioned findings appear to suggest that sexual risk behaviors among college students continue to be problematic; which makes young adults an at-risk population in need of intervention.

It is important to note that sex differences are apparent in sexual behaviors (Lewis et al., 2009). In general, men reported greater condom use than women. However, men reportedly engaged in more sexual risk behavior. In particular, men reported more sexual partners than women and reported more concurrent alcohol consumption and sexual intercourse than women. Among men, alcohol consumption, inconsistent condom use, and multiple sexual partners were correlated.

**Negative Health Consequences.** Sexual risk behaviors often result in negative health consequences; including sexually transmitted diseases (STDs), Human immunodeficiency virus (HIV)/Acquired immune deficiency syndrome (AIDS), and/or unintended pregnancy (Centers for Disease Control and Prevention, 2005; Malhotra, 2008; Opt & Loffredo, 2004). STD/HIV infection is responsible for high morbidity and mortality (East, Jackson, O’Brien & Peters, 2007). Untreated STDs can lead to serious long-term health consequences, especially for young women (Centers for Disease Control and Prevention, 2009). Centers for Disease Control and Prevention estimated that, each year, undiagnosed and untreated STDs cause infertility in at least 24,000 women in the United States. Rates of STD and HIV infection among young adults are disturbing. Young people have high rates for the most common STDs (i.e., Chlamydia, Gonorrhea, Syphilis, and Herpes Simplex Virus). Persons in this age group have been estimated to acquire nearly half of all incidents of STDs, although they
represent only 25% of the sexually active population (Centers for Disease Control and Prevention, 2009).

In 2006, there were approximately 1 million cases of Chlamydia, Gonorrhea, and Syphilis among young people (East et al., 2007). Chlamydia is the most commonly reported STD in the United States; with the highest rates of reported Chlamydia among young people between the ages of 20 and 24 (Centers for Disease Control and Prevention, 2010; Centers for Disease Control and Prevention, 2009). Gonorrhea is another commonly reported STD in the United States and rates continue to be highest among young adults (Centers for Disease Control and Prevention, 2008). Similar to Chlamydia and Gonorrhea, Syphilis rates were highest among young adults (Centers for Disease Control and Prevention Fact Sheet, 2007). Human papillomavirus (HPV) prevalence rates among youth are higher than adult HPV rates and the rate of genital herpes- simplex virus type two (HSV-2) infection has increased among young adults; with HSV-2 rates being most common in women (Centers for Disease Control and Prevention, 2007).

In addition to elevated rates of STD infection, rates of HIV infection among young adults is problematic. In 2006, the majority of new HIV diagnoses occurred among those aged 20 to 24 (Centers for Disease Control and Prevention, 2008). Specifically, this age group represented 34% of all new HIV infections (Centers for Disease Control and Prevention, 2008).

Lastly, unintended pregnancy is a major consequence associated with sexual risk behavior. Approximately 76% of all unplanned pregnancies occur in women in their teens and twenties each year (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2008). A consequence associated with unwanted pregnancies is abortions. In 2004,
approximately 406,000 abortions were performed among young adult females (Center of Disease Control and Prevention, 2009).

**Safe Sex Behaviors: Condom Use Attitudes, Intentions and Self-Efficacy**

In order to prevent STD/HIV infection and unintended pregnancies, engagement in safe sex behaviors is encouraged. Safe sex behavior refers to “sexual activities that greatly reduce the risk for STD/HIV infection” (Perloff, 2001). Safe sex behaviors can include: (a) having sexual contact with one long-term partner (one who never has sex with another partner and who does not have an STD); (b) Stroking, french kissing/kissing, cuddling, massaging, masturbating or bringing the other to orgasm by hand; (c) Using a condom for vaginal intercourse in every instance; and (d) Using a condom with extra lubrication for anal intercourse in every instance (Centers For Disease Control and Prevention, 2009).

Attitudes towards a behavior, behavioral intentions, and behavioral self-efficacy are all individual attributes which have been linked to actual behavior (Ajzen & Fishbein, 1980; Ajzen, 1991; & Bandura, 1977). In particular, favorable attitudes toward a desired behavior (e.g., favorable attitudes towards condom use) and intentions to engage in the desired behavior (e.g., intentions to use condoms) are related to engagement in the behavior (e.g., increased condom use). Similarly, if an individual possesses confidence in their ability to effectively engage in the behaviors (e.g., condom use self-efficacy), they are more likely to engage in the desired behavior (e.g., increased condom use).

Beliefs, attitudes, and intentions are theorized to drive behavior (Ajzen & Fishbein, 1980; Ajzen, 1991; Cameron, 2009; Rimer & Glanz, 2005). An individual’s behavior is predicted by intentions; which, in turn, are predicted by attitudes towards the behavior (i.e., positive or negative feelings toward performing the defined behavior) (Ajzen & Fishbein,
Attitudes toward the intended behavior are shaped by beliefs about consequences of performing a certain behavior as well as the evaluations of those consequences (Rimer & Glanz, 2005; Witte, Meyer, & Martell, 2001). Self-efficacy is also theorized as a driving force of behavior (Bandura, 1977; Witte et al., 2001). Self-efficacy is defined as one's belief in one's ability to succeed in specific situations (Bandura, 1977).

Examining condom use attitudes, condom use intentions, and condom use self-efficacy was important for several reasons: (a) they are all related to behavior change; (b) they are correlated with safe sex behavior change among college students; and (c) they can be directly empirically examined, which is difficult to accomplish with actual behaviors. A theoretical framework for these variables is discussed below.

The AIDS Risk Reduction Model (ARRM) is a major theoretical framework within the sexual risk prevention literature that explains sexual behavior change (Catania, Kegeles, & Coates, 1990). The ARRM is composed of three stages: (a) recognition and labeling of one’s sexual behaviors as high risk for contracting HIV, (b) making a commitment to reduce high risk sexual contacts and increase low risk activities, and (c) seeking and enacting strategies to obtain these goals (Catania et al., 1990). The ARRM asserts that in order to change sexual behaviors and avoid HIV infection, individuals engaging in high sexual risk behaviors must perceive that their sexual behaviors are problematic and place them at risk for HIV infection (Catania et al., 1990). Recognition of one’s sexual behaviors as problematic is followed by making a strong commitment to changing one’s behaviors; that is, deciding if the behaviors can be altered and whether the benefits of change outweigh the costs. Lastly, individuals make efforts to obtain solutions through self-help, informal help (e.g., social
support systems, friends), and/or formal help (e.g., professional helpers, psychologists) in order to achieve success (Catania et al., 1990). A number of factors are hypothesized to influence goal achievement and movement across each stage of the change process.

Commitment to change (i.e., Stage 2) is of relevance to the current study because this stage involves reaching a firm decision to make behavioral changes. The ideal resolution to the stage is making a commitment towards the desired behavioral change, which is often assessed through one’s intention to engage in the desired behavior.

Enjoyment (e.g., if changes affect one’s enjoyment of sex) and self-efficacy of the intended behavior are some of the factors hypothesized to influence one’s commitment to change (Catania et al., 1990). When high risk behaviors (e.g., inconsistent/lack of condom use) are perceived as highly pleasurable/enjoyable and low risk behaviors (e.g., consistent condom use) are perceived as less pleasurable, an individual may be less likely to make a commitment to change the behavior. Ideally, an individual would need to possess favorable attitudes towards the desired behavior (e.g., condom use) in order to commit to engaging in the behavior. Attitudes are theorized to guide behavior (Ajzen & Fishbein, 1980; Ajzen, 1991; Cameron, 2009; Rimer & Glanz, 2005). Assessing whether one’s attitudes towards the desired behavior (e.g., condom use) are favorable or unfavorable can capture one’s enjoyment of the behavior. Therefore, one’s attitude about condom use was assessed in the current study. Self-efficacy of the intended behavior (e.g., condom use) is necessary for behavior commitment. High degrees of self-efficacy of the intended behavior contribute to reductions in high risk behaviors and increases in low risk behaviors (Catania et al., 1990). Therefore, one’s condom use self-efficacy was assessed because it is theorized to influence behavior change.
Individuals are theorized to progress through the stages in order to change their behaviors; however, individuals may progress through the stages differently. Individuals’ progression through these stages is largely influenced by internal and external factors (Catania et al., 1990). Internal and external factors are factors within and outside of an individual that motivate individual movement across stages (Catania et al., 1990). For instance, internal factors such as aversive emotional states (e.g., high levels of fear/anxiety) may facilitate or hinder one’s commitment to change their behavior. High levels of anxiety may hinder the ability to change behavior whereas moderate levels of anxiety may strengthen commitment and facilitate the decision to change behavior (Catania et al., 1990). However, evidence also suggests that high and low levels of distress may facilitate behavior change (e.g., condom use) (Catania et al., 1990). There is continued need for clarification on what levels of emotion are most conducive to behavioral change. The current study hypothesized that emotional responses may influence commitment to change the problem behavior, attitudes about the desired behavior, and self-efficacy of the desired behavior.

External factors, such as public health messages, may also cause people to examine and potentially change their sexual activities (Catania et al., 1990). Public health messages that detail risk behaviors, condom use, and sources of help may provide individuals with cues for correctly labeling problem behavior, enhancing commitment to change the problem behavior, and obtaining and implementing solutions. The current study not only examined whether the health risk messages enhance commitment to change behavior (i.e., intentions), but it also examined whether a rational, negative emotional, or positive emotional message appeal best accomplishes this task. Additionally, the influence of health risk messages on attitudes, self-efficacy of the intended behavior and emotional responses was examined.
There have been limited empirical investigations of the influence of internal and external factors on one’s commitment to change condom use behavior (Catania et al., 1990). The current study attempted to confirm the theoretical model of the ARRM by examining the influence of internal (i.e., emotional responses) and external (i.e., health risk messages) factors on one’s commitment to change condom use behavior (i.e., condom use intentions) as well as condom use attitudes and condom use self-efficacy.

**Sex Differences.** Sex variations have been reported for condom use attitudes, condom use intentions, and condom use self-efficacy; though the reported differences have been inconsistent (Lewis et al., 2009). Sacco, Thompson, Rickman, Levine, and Reed (1993) examined the sex differences in attitudes towards condoms and condom use behavior among college students. Participants were given questionnaires that assessed their attitudes towards condoms as well as past and intended condom use behaviors. Findings indicated that women reported more favorable attitudes towards condoms than did men. The only exception was women’s reported attitudes towards buying and possessing condoms; which were generally negative as compared to men. Unsurprisingly, men engaged in more condom use intentions and behaviors. Specifically, men were more likely to carry condoms and keep condoms in their home and were more likely to intend to carry condoms and intend to keep condoms at home. Interestingly, despite sex differences in attitudes, there were no differences found in condom use intentions.

More recent examinations (Farmer & Meston, 2006; Lewis et al., 2009) further illustrate sex differences. Lewis et al. (2009) found that young men generally reported more negative attitudes towards condom use than young women. Additionally, there is a link
between safe sex intentions and safe sex behavior in women; such that intentions to use condoms were correlated with actual use of condom (Lewis et al., 2009).

Farmer and Meston (2006) examined the influence of various factors on condom use self-efficacy among a diverse sample of college students. Of particular interest are the significant sex differences that emerged in condom use self-efficacy and condom use attitudes. Participants completed several questionnaires examining condom use self-efficacy and attitudes as well as other salient variables (e.g., condom barriers, sexual behavior, and sexual satisfaction). Findings on condom use variables indicated significant gender differences in condom use self-efficacy and condom attitudes. Contrary to other findings (Lewis et al., 2009), men reported higher condom use attitudes than did women. Similar to previous findings, men reported higher condom use self-efficacy than women.

**Racial Differences.** The racial differences in sexual behaviors should be noted; particularly, as it pertains to African American college students. African Americans make up roughly 13% of the U.S. population; however, account for almost 50% of all new reported cases of HIV/AIDS, with African American young females considered the highest risk group (Centers for Disease Control and Prevention, 2005). Although African American college students report greater condom use than Caucasian college students (Lewis et al., 2009), it has been widely reported that African American college students tend to engage in more sexual risk behaviors (Centers for Disease Control and Prevention, 2005; Lewis et al., 2009). Specifically, African American college students as compared to Caucasian college students have been reported to engage in greater frequency of sexual intercourse, have early onset of sexual intercourse, and have multiple sexual partners (Broderick & Blewitt, 2009, Lewis et al., 2009, Centers for Disease Control and Prevention, 2005).
Along with racial differences in sexual risk behavior, some studies suggest that there are racial differences in condom use attitudes, self-efficacy and intentions (Lewis et al., 2009; Sacco et al., 1991). African American college students have been reported to use more condoms than Caucasian college students (Beckman, Harvey, & Tiersky, 1996; Davis et al., 2007; Lewis et al., 2009). Similar to Caucasian college students, higher condom use self-efficacy is correlated with condom use among African American college students (Lewis et al., 2009). Davis et al. (2007) examined differences between 156 African American and Caucasian college students’ current and future sexual behaviors and condom use, HIV/AIDS awareness, condom use self-efficacy, and attitudes towards safe sex. Participants completed a number of surveys measuring their current and future sexual behaviors and attitudes. Results indicated that, of the sexually active participants, more African American (52%) than Caucasian students (36%) reported they used condoms frequently and more African Americans (69%) indicated they would use condoms regularly in the future. Racial differences were also apparent in HIV/AIDS awareness. Caucasian students showed more awareness of HIV/AIDS than African American students; however, when sexual status (i.e., sexually active vs. sexually inactive) was controlled, the racial difference in HIV/AIDS awareness was no longer apparent. No racial differences were found in intentions for future casual sex (i.e., having a one night stand), condom use self-efficacy, or attitudes toward safer sex practices. Regardless of racial background, the students reported low intentions to have a one night stand, high condom use self-efficacy and favorable attitudes towards safer sex practices. The study suggests that African American students tend to use more condoms and have greater intentions to use condoms in the future.
Additionally, as compared to Caucasian college students, African American college student possess more favorable attitudes towards condom use and have greater intentions to use condoms (Beckman et al., 1996; Lewis et al., 2009). Beckman et al. (1996) assessed the relationships of ethnicity, gender, previous condom use, and intended condom use in a multiethnic sample of 197 college students. Participants completed a questionnaire examining their attitudes about the use of condoms and oral contraceptives. A three-way multivariate analysis of variance (MANOVA) was conducted to examine the effects of gender, ethnicity, and condom use at last intercourse on three sets of scales: Importance, Condom Agreement, and Pill Agreement. Results indicated that, in general, women viewed the pill more positively than men. African American participants viewed the condom more positively than did students from other ethnic groups and were more likely (61.3%) to use condoms than Caucasian participants were (29.2%). African Americans students were more concerned with peer approval of their birth control method and believed more strongly than Caucasian students that their peers approved of condom use. African American college students were also more likely than Caucasian college students to agree that the condom did not interfere with sexual pleasure and spontaneity. Conversely, a higher proportion of Caucasian students (59.1%) than African Americans (38.2%) and other ethnic groups (42.2%) reported that they definitely intended to use the Pill in the next month. Of particular concern is the fact that only 60% of the college sample had used condoms in the last 6 months and that less than one half intended to use condoms in the next month. Those who used condoms at last intercourse or definitely intended to use the condom in the next month viewed the condom more favorably than other college students (i.e., those who did not use
condoms at last intercourse & did not intend to use condoms). Those who definitely intended to use condoms viewed oral contraceptives as being less convenient than condoms.

Given that racial differences are apparent in the literature; these differences were explored in the present study. Specifically, racial differences in condom use attitudes, intentions and self-efficacy were explored.

**Socioeconomic Status (SES) Differences.** Socioeconomic status (SES), as measured by family income and/or educational attainment, is associated with many measures of health status, including adult and child mortality rates, reproductive health outcomes (e.g., unintended pregnancy, adolescent birth rates), and sexual risk behavior (e.g., multiple sex partners, STD infection history, condom use) (Santelli, Lowiy, Brener, & Robin, 2000).

Santelli et al. (2000) assessed the relationship between socioeconomic status (SES), family structure, and race/ethnicity and adolescent sexual risk behaviors. The 1992 Youth Risk Behavior Survey/Supplement (YRBS) was used for the study and included individuals aged 12 to 21. The influence of SES (i.e., parental income, educational attainment, and family structure) was assessed on the following sexual behaviors: (a) ever having had sexual intercourse, (b) sexual intercourse in the past 3 months, (c) multiple partners in the past 3 months, (d) condom use at last intercourse by the adolescent or his or her partner, and (e) oral contraceptive use at last intercourse by the adolescent or his or her partner. Overall, the results showed that among male and female adolescents, greater parental education, living in a 2-parent family, and White race were independently associated with never having had sexual intercourse. Parental educational attainment was associated with sexual intercourse, even after other significant variables such as age and race/ethnicity were controlled for. In particular, sexual intercourse in the past 3 months was more common among male
adolescents whose parents were high school graduates than among those whose parents were college graduates. The other important impact of SES was an association between parental education and condom use among females. Adolescent females with college educated parents were more likely to have used condoms at last intercourse. Condom use was lower among female adolescents whose parents had less than a high school education or whose parents had some college education than among those whose parents were college graduates. Parental education was not associated with any of the other sexual behaviors (i.e., sexual activity, condom use among males, oral contraceptive use, and having multiple sexual partners). Interestingly, there were no significant relationships between family income and any of the sexual behaviors for males or females.

The previous study indicates that SES may have some impact on sexual behavior. The present study explored SES differences (i.e., parental household income) in condom use attitudes, condom use intentions and condom use self-efficacy.

In summary, high rates of sexual activity have been reported for young people in the United States (Centers for Disease Control and Prevention, 2009; Centers for Disease Control and Prevention, 2005; Lewis et al., 2009; Marston & King, 2006; Opt & Loffredo, 2004). Consequently, physical health consequences related to sexual risk behaviors are prevalent (Centers for Disease Control and Prevention, 2005; Malhotra, 2008; Opt & Loffredo, 2004). In order to prevent physical health consequences, engagement in safe sex behavior needs to be encouraged among young adults. In general, attitudes, intention, and self-efficacy are associated with behavior change (e.g., engagement in safe sex behaviors) (Ajzen & Fishbein, 1980; Ajzen, 1991; Rimer & Glanz, 2005). Because consistent condom use is a strongly encouraged safe sex behavior, the present study examined young adults’
condom use attitudes, condom use intentions, and condom use self-efficacy. There are sex differences in sexual behavior and attitudes, intentions, and self-efficacy related to condom use (Centers for Disease Control and Prevention, 2009; Centers for Disease Control and Prevention, 2005; Farmer & Meston, 2006; Lewis et al., 2009; Lewis et al., 1997). Therefore, the impact of biological sex on young adults’ condom use attitudes, intentions to use condoms, and condom use self-efficacy was examined. Additionally, there is evidence that suggests that there are racial and SES differences in sexual behavior and attitudes, intentions, and self-efficacy related to condom use (Beckman et al., 1996; Lewis et al., 2009; Sacco et al., 1991). Therefore, racial and SES differences were explored as well.

**HIV/STD Prevention Interventions**

Due to high rates of STD/HIV infection and unintended pregnancy, many researchers have developed interventions in an effort to reduce sexual risk behaviors. STD/HIV prevention interventions are designed to change behavior; in particular, increase engagement in safe sex behaviors. HIV/STD prevention interventions are currently the most effective way of slowing the spread of HIV infection (Centers for Disease Control and Prevention, 1995). HIV/STD interventions typically involve interactions between physicians or educators and participants in contexts in which exposure to risk-reduction messages is ensured (e.g., clinics). Prevention interventions can include brochures/posters, hotlines/websites, Public Service Announcements (PSAs)/videos, and educational programs (Centers for Disease Control and Prevention, 1995). Despite the use of HIV/STD interventions, the incidence of STDs and unplanned pregnancies remains problematic among young people. Additionally, though young people are reported to be knowledgeable about STD/HIVs; this knowledge does not translate into behavior changes (Davis et al., 2007; East et al., 2007).
Opt and Loffredo (2004) examined college students’ knowledge and perceptions of HIV/STD. Participants completed a questionnaire that assessed their HIV/AIDS knowledge and perceptions, testing behaviors, and sexual practices. In addition, participants were given 10 true-false statements about HIV infection rates, transmission methods, and protection methods; in order to assess their HIV/AIDS knowledge. Participants also reported information on their sexual behavior, number of sexual partners, and frequency of condom use. Findings suggested that the study participants were knowledgeable about the risks and transmission modes of HIV/AIDS; however, they were neither personally concerned about becoming infected nor do they take appropriate safer sex precautions (i.e., always using latex condoms). While 89% of the participants reported that they believed AIDS is a serious or very serious problem for college students, only 46% expressed personal concern about becoming infected with HIV/AIDS. Sex differences emerged for the view of HIV/AIDS as problematic for college students. In particular, female college students considered HIV/AIDS a more serious problem for college students than did male college students (Opt & Loffredo, 2004).

The inconsistent use of condoms and limited concern for health consequences (e.g., HIV/AIDS infection) suggests that young adults are in need of intervention. HIV/STD prevention intervention programs have been developed to address this need; however, there have been discrepancies regarding the effectiveness of intervention programs in eliciting attitude and behavior change (Kirby et al., 2007). Several studies have examined the impact of their intervention programs on a variety of attitudes and behaviors. Because condom use is a key prevention strategy, interventions impact on condom use is of particular interest. The
following study, examining the effectiveness of HIV/STD interventions, has illustrated that inventions have been inconsistent in changing behavior.

Kirby et al. (2007) conducted a review of 83 studies that measured the impact of curriculum-based sex and HIV education programs on sexual behavior among youth under age 25. The education programs that were examined attempted to change several sexual behaviors (e.g., number of sexual partners, condom use, and contraceptive use in general). Among the studies attempting to change condom use behavior \((n = 54)\), findings revealed that almost half (48%) of the intervention programs had a significant positive impact on condom use (e.g., increased condom use), which means that slightly more than half (52%) of the intervention programs did not have a significant impact on condom use (Kirby et al., 2007). This finding suggests that interventions targeting condom use behavior, have not consistently elicited the desired behavior change (i.e., increased condom use).

Despite the prevalence of HIV/STD interventions, young people continue to engage in sexual risk behaviors at alarming rates. Additionally, there are discrepancies regarding the effectiveness of HIV/STD prevention programs in eliciting behavior changes (e.g., increased condom use) (Kirby et al., 2007). The continued engagement in sexual risk behaviors and the discrepancies in HIV/STD intervention effectiveness appear to suggest that the sexual behavior and attitudes of young people need further empirical attention. In an effort to address the inconsistencies in the HIV/STD prevention literature, factors (i.e., safe sex message appeals and emotional responses) that have been found to be positively associated with attitude and behavior change were examined.
Sexual Risk Prevention Messages and Message Appeals

Messages are used to convey information to the public regarding environmental changes that have ramifications for their well-being (Dillard et al., 1996). A health risk message represents “any message that is intended to shape, reinforce, or change the responses of another, or others” (Cameron, 2009, p. 312). Specifically, health risk messages seek to elicit attitude and behavior change (Perloff, 2001). Health risk messages focused on sexual risk behavior, in particular, involve persuading individuals to engage in safe sex. In order to be persuasive, a message must appeal to the audience (Perloff, 2001). A message appeal is the strategy employed to convey a message (Camm, 2005; Perloff, 2001). There are various types of message appeals (e.g., emotional, rational, sexual, humor). Of these appeals, negative emotional appeals (i.e., fear or threat appeals) and rational appeals have received the most empirical attention (Camm, 2005).

Message Appeals. Emotional message appeals are directed towards an individual’s feelings and induce negative and/or positive emotions (Camm, 2005). Emotional appeals make a message attention-getting and memorable (Vega & Ghanem, 2007). Negative emotional appeals are typically referred to as fear or threat appeals. Fear/threat appeals refer to a “persuasive communication that tries to scare people into changing their attitudes by conjuring up negative consequences that will occur if they do not comply with the message recommendations” (Perloff, 2001, p. 75). Fear-arousing messages traditionally depict the negative consequences (e.g., physical, psychological, social or emotional) associated with not doing what the communicator recommends (Devos-Comby & Salovey, 2002; Robberson & Rogers, 1988; Witte, Meyer & Martell, 2001). From this perspective, negative emotional appeals adopt a loss-frame perspective (e.g., If you don’t use condoms you are at greater risk.
of sexually transmitted diseases). These appeals are the most commonly used in the sexual risk prevention literature (Camm, 2005; Dillard & Peck, 2000; Marchand & Filiatrault, 2002; Perloff, 2001; Witte et al., 2001). Negative emotional appeals have often been perceived as effective (Devos-Comby & Salovey, 2002; Lee & Davie, 1997); which may likely explain the frequent use of these appeals. Eliciting fear has been seen as effective as long as the audience is given a constructive way of reducing the fear (Perloff, 2001). Specifically, the audience must be provided with clear and explicit directions regarding how to prevent the negative outcome from occurring.

Positive emotional appeals focus on positive outcomes associated with doing what the communicator recommends (Robberson & Rogers, 1988). A message based on rewarding improved behavior generally evokes a positive emotion (Marchand & Filiatrault, 2002). Positive emotional appeals adopt a gain-framed perspective (Devos-Comby & Salovey, 2002), which emphasizes the benefits of following the message recommendations (e.g., If you use condoms, you increase your chance of staying healthy). There are limited health risk studies that examine positive appeals; therefore, it is unclear whether this appeal is effective in eliciting attitude and behavior change. However, this framework may be effective because it will provide individuals with ways to prevent risk (Devos-Comby & Salovey, 2002).

Lastly, rational message appeals are directed towards logical decision making and tend to be factual and straightforward in nature (Camm, 2005). These appeals tend to be presented in an educational manner with little emphasis on eliciting emotion (Marchand & Filiatrault, 2002). Rational appeals have been examined in the literature; particularly, as compared to negative emotional appeals (e.g., fear, threat appeals). While many argue that rational appeals are more effective in eliciting behavior change, others contend that negative
emotional appeals are more useful (Lee & Davie, 1997). Rational appeals have been seen as appropriate in situations where the communication objectives are awareness or comprehension (Marchand & Filiatrault, 2002).

Overall, negative emotional and rational appeals have been associated with attitude and behavioral change (Crano & Prislin, 2006; Green & Witte, 2006; Nabi, 2002). See Table 1 for a summary of this research outcome. Due to the lack of studies examining positive emotional appeals, the influence of positive emotional appeals on attitudes and behaviors is unclear. Additionally, limited studies have examined which message appeal is most effective in eliciting attitude and behavior change; particularly as it relates to sexual behavior. Of the examinations of message appeal effectiveness, the results are inconsistent and it is difficult to determine which message appeal is most effective.

Table 1
Review of Message Appeal Literature

<table>
<thead>
<tr>
<th>Investigators</th>
<th>Study Purpose</th>
<th>Study Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marchand &amp; Filiatrault (2002)</td>
<td>Compared the effectiveness of rational, negative emotional and positive emotional appeals among college students</td>
<td>Negative emotional appeal viewed as more effective in changing behavior and elicited negative emotional responses Rational appeal generated the most responses about personal concern/vulnerability to infection</td>
</tr>
<tr>
<td>Perse et al. (1996)</td>
<td>Examined the impact of rational and emotional safe sex PSAs on message effectiveness among college students</td>
<td>Rational appeal was found to be more effective than emotional appeal</td>
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(continued)
<table>
<thead>
<tr>
<th>Investigators</th>
<th>Study Purpose</th>
<th>Study Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee &amp; Davie (1997)</td>
<td>Examined differences in the recall of rational and emotional safe sex PSAs</td>
<td>Emotional appeal resulted in higher recall of PSA information as compared to rational appeal</td>
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<tr>
<td></td>
<td>among college students</td>
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<tr>
<td>Struckman-Johnson &amp;</td>
<td>Examined effects of fear appeals on college students’ intentions to use condoms</td>
<td>Fear appeals resulted in high intentions to use condoms</td>
</tr>
<tr>
<td>Struckman-Johnson (1996)</td>
<td>and condom behavior</td>
<td></td>
</tr>
<tr>
<td>O’Keefe &amp; Jensen (2007)</td>
<td>Reviewed the health risk literature on the persuasiveness of positive and</td>
<td>No difference in the persuasiveness of positive and negative appeals on safe sex behaviors</td>
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<tr>
<td></td>
<td>negative appeals</td>
<td></td>
</tr>
<tr>
<td>Struckman-Johnson et. al, (1994)</td>
<td>Examined effects of fear, rational, sexual and humor appeals on college</td>
<td>All appeals increased condom use intentions; however, fear appeals were most effective in increasing condom use intentions</td>
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<td></td>
<td>students’ attitudes and condom use intentions</td>
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Perse, Nathanson, and McLeod (1996) examined the impact of safe sex Public Service Announcements (PSAs) on message effectiveness. The study focused on two PSA message elements – the spokesperson (i.e., male and female) and the message appeal (i.e., rational and negative emotional). College students were randomly assigned to one of four experimental conditions: (a) female/rational, (b) female/emotional, (c) male/rational, and (d) male/emotional. Participants viewed one of the PSAs and completed a questionnaire packet; which assessed message effectiveness. Three measures of message effectiveness were included in the study: five items assessing attitude towards the PSA (i.e., cognitive and
emotional feelings about the ad that affect one’s tendency to respond favorably or unfavorably), one item assessing PSA recall (i.e., indicate that the participant has paid attention to and learned something from the ad, measured by correct recall of PSA sponsor’s name), and one item assessing intention to act (i.e., participants desire to seek more information). None of the study hypotheses, related to the interaction between spokesperson and message appeal were supported. However, there was a significant impact of message appeal on message effectiveness. Specifically, more positive cognitive attitudes (i.e., statements indicating that the ad was better and more interesting) were reported for the rational appeal than the emotional appeal. There was only a marginal difference in emotional attitude ratings (i.e., statements indicating that the ad was nicer and more pleasant); slightly in favor of the rational appeal as compared to the emotional appeal. There was no significant difference between the message appeals in message recall or intention to act. These findings indicated that the rational appeal was perceived to be more persuasive than the emotional appeal.

With regard to the effectiveness of rational versus negative emotional appeals, Lee and Davie (1997) reported an opposite finding. Lee and Davie (1997) sought to determine the extent to which college students would attend to and recall HIV/AIDS prevention PSAs. The participants were randomly assigned to one of two viewing groups. Half of the participants watched the rational appeal PSAs and the other half watched the negative emotional appeal PSAs. Following the viewing of the PSAs, participants completed a questionnaire assessing their recall of the HIV/AIDS message. Recall of information from the PSAs was measured by questions pertaining to the message sponsor, the main character of the message, and a specific question about the content of the message. Participants who viewed the negative
emotional appeals had a higher recall of the HIV/AIDS PSA information than participants who viewed the rational appeals. There was an interaction effect for gender and message appeal, such that female college students that viewed the negative emotional appeal exhibited the highest recall scores than those who viewed the rational appeal. Overall, the results indicated that the negative emotional message appeals were more effective than rational appeals, resulting in higher recall scores. Additionally, the interaction between message appeal types and gender demonstrated that negative emotional message appeals were more effective with women viewers in terms of recalling information than they were with men. The results suggested that the negative emotional message appeal was most effective in the recall of HIV/AIDS PSAs.

Similarly, Struckman-Johnson and Struckman-Johnson (1996) found negative emotional appeals (i.e., fear appeals) to be more effective. The authors examined the effects of different fear appeals on college students’ intention to use condoms and condom behavior. Young adults, between the ages of 18 and 25, viewed different fear appeal PSAs that varied by condom use recommendation (i.e., recommendation vs. no recommendation). Participants viewed the PSAs individually, in an experimental laboratory and completed a survey questionnaire and rating form. Students were given the opportunity to take free condoms upon the completion of participation. Results indicated that condom use recommendations had no significant effect on participants’ condom use intentions; regardless of the experimental condition, participants reported high intentions to use condoms with a future sexual partner. There was a significant impact of condom use recommendation and gender on taking free condoms. Men who viewed PSAs with the condom use recommendation took more condoms than men who viewed PSAs with no condom use recommendation and
women in both conditions. These findings suggest that fear appeals are effective for young audiences regardless of whether or not condom use recommendations are included. Additionally, the study indicated that the use of fear appeals did not appear to have debilitating effects on young audiences, as previously suggested.

However, other studies indicated that there is no difference in effectiveness among message appeals. O’Keefe and Jensen (2007) conducted a review of various health risk message studies, to determine whether gain-framed (e.g., positive emotional appeals) and loss-framed appeals (e.g., negative emotional appeals) significantly differ in persuasiveness (i.e., assessed through attitude, behavioral intention, and behavior changes). Additionally, the study examined whether the relative persuasiveness of gain and loss-framed appeals varied depending on the particular prevention behavior (e.g., safe sex behaviors, diet/nutrition, skin cancer prevention). In general, gain-framed appeals were more persuasive than loss-framed appeals. However, further evaluations revealed that this finding was exclusive to dental hygiene behaviors (e.g., flossing). Among other prevention behaviors, no significant difference was found between gain and loss-framed appeals. As it relates to safe sex behaviors, there was no difference in persuasiveness between gain and loss-framed appeals.

To date, no research has provided convincing evidence that any one message appeal is more effective than others in sexual risk and AIDS prevention. Struckman-Johnson, Struckman-Johnson, Gilliland, and Ausman (1994) examined the effects of different message appeals on college students’ intention to use condoms and condom behavior. Young adults, between the ages of 18 and 25, viewed different commercials and reported their attitudinal reactions and condom use intentions. Participants viewed the PSAs individually, in an experimental laboratory and completed a rating form. Participants were given the
opportunity to take free condoms upon the completion of the survey. Results indicated that the AIDS PSA fear appeals were more effective than factual (i.e., rational), erotic and humorous appeals in increasing college student’s intentions to use condoms with a future sexual partner. Additionally, the PSAs had a greater impact on female condom use intentions than on male condom use intentions. However, all of the PSA appeals were rated as relatively effective in increasing intentions to use condoms in both male and female college students, as evidenced by high intention scores in all experimental conditions. There was no significant effect of message appeal on the taking of free condoms. In other words, none of the message appeals were more effective than the other with regard to whether participants took free condoms. However, male college students were more likely than female college students to take free condoms. This study suggests that all of the message appeals were effective in increasing condom use intentions, with fear appeals being slightly more persuasive.

Marchand and Filiatrault (2002) attempted to identify a message appeal that was more effective by examining three different message appeal strategies used in AIDS prevention (i.e., rational, a negative emotional, and a positive emotional strategy). Participants were randomly assigned to one of the three treatment conditions (i.e., message appeal strategy). Young adults, between the ages of 18 and 25, viewed different commercials and reported their cognitive (i.e., spontaneous thoughts evoked by the ad) and attitudinal (i.e., attitude towards the topic of the ad and attitude towards the style of the ad) reactions. Participants’ cognitive reactions were measured by their written reactions to the PSAs. There were significant differences among the message appeal strategies as it pertained to cognitive responses. The rational appeal strategy generated more cognitive responses than the negative
emotional or positive emotional appeal. In particular, more connection thoughts (i.e., personal concern, statements where the participant refers to him/herself or makes a link between the commercial topic and him/herself) were reported for the rational appeal than for the negative or positive emotional appeals. As compared to the rational and positive emotional appeal, the negative emotional appeal provoked the most cognitive responses relating to a negative emotion (i.e., negative emotion experienced while watching the commercial). The positive emotional appeal received the most negative comments related to the commercial execution (i.e., statements made against the style of the ad). With regard to attitude towards the PSA topic, there were no significant differences found between the message appeal strategies. Regardless of the message appeal strategy, participants possessed positive attitudes (e.g., very informational and educational, interesting) towards the PSA topic (i.e., AIDS prevention). There was a significant difference in the attitude towards the style of the advertisements. Participants believed that, from a technical point of view, the negative emotion appeal commercial would be more effective in changing behavior than the other message appeal strategies. Overall, this study illustrates that different message appeal strategies may impact attitudes differently.

Previous literature indicates that rational and negative emotional appeals are related to attitude and behavior change (Crano & Prislin, 2006; Green & Witte, 2006; Nabi, 2002). Literature examining positive emotional appeals and attitude and behavior change is limited (Marchand & Filiatrault, 2002; O'Keefe & Jensen, 2007); therefore, the influence of positive emotional appeals is relatively unknown. Among the studies that examined message appeals and attitude and behavior changes, there were discrepancies regarding which appeal was most effective (Lee & Davie, 1997; Marchand & Filiatrault, 2002; O'Keefe & Jensen, 2007;
Perse et al., 1996). The effectiveness of the message appeals in eliciting attitude and behavior change was unclear and further examination was needed; particularly as it related to its impact on condom use. The present study examined the impact of message appeals (as measured by safe sex advertisements) on condom use attitudes, condom use intentions, and condom use self-efficacy.

**Emotional Responses**

Emotions are theorized to guide behaviors; therefore, the role of emotional responses was of particular interest. Research examining emotional responses as it relates to sexual risk prevention messages (i.e., safe sex messages) was generally scarce; however, some studies suggest that emotion may influence one’s condom use attitudes, self-efficacy, intentions and, ultimately, behaviors. Therefore, the influence of emotion was examined in the current study.

Emotions are “internal mental states representing evaluative reactions to events agents, or objects that vary in intensity” (Nabi, 2002, p. 290). Emotions are typically intense, short-lived, and directed at some external stimuli. Generally, emotion is considered a psychological construct consisting of five main components: (a) cognitive appraisal/evaluation of a situation, (b) a physiological component of arousal, (c) motor expression, (d) a motivational component, and (e) a subjective feeling state (Nabi, 2002).

Emotion is theorized to guide behavior; in particular, emotions organize and motivate human activity (Dillard & Meijnders, 2002; Nabi, 2002). Emotions are based on personally relevant events, with each emotion having a distinctive goal designed to direct activity. Behaviors in response to emotional feelings serve adaptive functions (Nabi, 2002). Due to its adaptive functions, emotion has implications for the process and direction of attitude and behavior change (Nabi, 2002). However, the influence of emotion on attitudes and behavior is
relatively unexplored in the sexual risk prevention literature (Nabi, 2002). Emotions other than fear (e.g., anger, sadness, happiness) have often been overlooked, with positive emotions being virtually ignored.

**Negative Emotions.** Negative emotions have been generally agreed upon to include fear, guilt, anger/hostility, and sadness (Nabi, 2002). Fear is usually elicited during situations that are “perceived as both threatening to one’s physical or psychological self and out of one’s control” (Nabi, 2002, p. 291). Fear elicits a tendency to escape the threatening agent, resulting in avoidance behavior (Nabi, 2002). Fear is the most empirically examined emotion and was found to be positively correlated with both attitude and behavior change (Das et al., 2003; Lennon & Rentfro, 2010; Nabi, 2002).

Guilt is generally aroused from one’s violation of an internalized moral, ethical, or religious code (Nabi, 2002). Furthermore, this emotion is characterized as a troubling feeling of having done something wrong. Guilt is associated with a tendency to atone or receive punishment for one’s wrongdoings (Nabi, 2002). There has been limited examinations regarding the effects of guilt, however, some literature has suggested that intentional and unintentional guilt arousal can enhance goal attainment (Dillard & Peck, 2000; Nabi, 2002).

Anger is incited when faced with obstacles that interfere with goal-oriented behavior. Additionally, anger is elicited when faced with demeaning offenses against oneself or one’s loved ones (Nabi, 2002). Anger has been associated with highly focused attention as well as a desire to attack or seek vengeance towards the anger source. Similar to guilt, anger has received little empirical examination. Nevertheless, limited research efforts appear to suggest a positive association between anger and attitude change (Nabi, 2002).
Physical or psychological loss/separation and failure to achieve a goal elicit sadness. Sadness is associated with feelings of isolation and result in inaction or withdrawal (Nabi, 2002). Similar to guilt and anger, sadness has been positively associated with attitude change; though, the literature is limited (Dillard & Peck, 2000; Dillard et al., 1996; Nabi, 2002).

**Positive Emotions.** Overall, the examinations on positive emotions have been scarce; however, happiness and surprise are the most common emotions seen in empirical examinations (Nabi, 2002). Happiness is conceptualized as a state of gaining or making progress toward what one desires. The emotion generates feelings of confidence, expansiveness, and openness and promotes trusting behavior (Nabi, 2002). There are scarce examinations of happiness in the sexual risk prevention literature; therefore, its influence on sexual attitude and behavior change is relatively unknown.

Surprise is characterized by focus on a novel and significant stimulus (Dillard et al., 1996). When a new and important stimuli appear in the environment, feelings of surprise cause an individual to focus on the stimulus (Dillard et al., 1996). Similar to happiness, surprise is rarely examined. Though, as illustrated later, surprise may be related to attitude change; thus, warranting the examination of this emotion.

Given the links between negative emotion and attitude/behavior change, fear, guilt, anger and sadness will be examined in the proposed study. Due to the scarcity of empirical examination, the link between positive emotions and attitude/behavior change is less clear. In an effort to understand the influence of positive emotion on attitudes and intentions related to safe sex, happiness and surprise were examined in the current study.
As mentioned previously, all of the aforementioned emotions have received limited empirical investigation. However, there have been a few studies that highlight the role of emotion in persuasiveness.

Dillard et al. (1996) investigated the influential role of emotion on message persuasiveness. The authors were interested in determining several things: (a) whether HIV/STD fear appeal public service announcements (PSAs) evoked emotional responses; (b) whether the emotions predicted message persuasiveness; and (c) how emotions operate on message persuasiveness. The authors solicited college students for participation in their study. Participants viewed videotapes of five or six negative emotional appeals. Following the viewing of the PSAs, participants completed information on their affective responses to each message and made judgments of the persuasiveness of each message. The affective responses were assessed with six affect measures (i.e., fear, surprise, sadness, puzzlement, anger and happiness). To assess message persuasiveness, participants rated each PSA on two items that measured persuasiveness (i.e., not at all persuasive to very persuasive) and whether the PSA was convincing (i.e., not at all convincing to very convincing). This study provides valuable information regarding the influence of emotion. The results demonstrated that many emotions are elicited by the PSA messages. Overall, the results suggested that emotion is related to message persuasiveness. All of the emotions (i.e., fear, surprise, sadness, puzzlement, anger), with the exception of happiness were related to message persuasiveness (i.e., whether the message was perceived as persuasive and convincing). Each of these emotions had different influences on the persuasiveness of the message. Fear, surprise and sadness were each positively associated with message persuasiveness, such that high levels of fear, surprise, and sadness were associated with high reports of PSA message
persuasiveness. Puzzlement and anger were each negatively associated with message persuasiveness. High levels of puzzlement and anger were associated with low reports of the PSA message persuasiveness, which suggests that these emotions inhibited the effectiveness of the PSA message. The findings of the Dillard et al. (1996) study suggested that different emotions should be assessed because they have different influences on message persuasiveness.

The Dillard and Peck (2000) study further illustrates the influence of different emotions. Similar to the aforementioned study, the influential role of emotion on message persuasiveness was examined. College students were solicited for participation in this study. Participants viewed videotapes of eight negative emotional appeals. Following the viewing of the PSAs, participants completed information on their cognitive, emotional, and attitudinal responses to each message. In addition, participants reported their perceptions of message persuasiveness (i.e., their perceptions of whether the message was persuasive). The affective responses assessed were fear, surprise, sadness, puzzlement, anger, happiness, and guilt. Participants were randomly assigned to one of three viewing conditions: (a) a heuristic-enable condition (i.e., instructed to allow emotions to influence judgments); (b) a heuristic-disabled condition (i.e., instructed not to allow emotions to influence judgment) and (c) a natural condition (i.e., no instructions given). Study analyses did not reveal significant main effects or interaction effects of the experimental condition. However, interesting results did emerge for the influence of emotion on message persuasiveness. Distinct and separable effects were obtained for surprise, fear, anger, and sadness. Similar to Dillard et al.’s (1996) findings, fear, surprise and sadness were positively associated with message persuasiveness and anger was negatively associated with message persuasiveness. High levels of fear,
surprise and sadness were related to the PSA message being perceived as more persuasive. Conversely, high levels of anger were associated with low reports of PSA message persuasiveness. Guilt, an emotion that was not assessed in the previous study, was positively associated with message persuasiveness. Happiness, found to be unrelated to message persuasiveness in the previous study, was positively associated with message persuasiveness. Similar to fear, surprise, and sadness, high levels of guilt and happiness were associated with high reports of PSA message persuasiveness. These findings provide further evidence that emotions have different influences on message persuasiveness.

Although empirical studies are limited, there are indications that negative emotions are associated with attitude and behavior change (Nabi, 2002). However, the relationship between positive emotions and attitude change is less clear (Dillard & Peck, 2000; Dillard et al., 1996; Nabi, 2002). An examination of young adults’ emotional responses was important for several reasons. First, message appeals cannot be classified as inherently emotional; health risk messages do not elicit emotions per se (Dillard & Meijnders, 2002). Subjective appraisal of message content is theorized as the cause of emotional responses. Even though the content of a sexual risk prevention messages can be emotional (i.e., emotional appeal), that does not guarantee that an individual will experience the desired emotion (e.g., fear). Second, message appeals may likely elicit emotions other than the desired emotions (Devos-Comby & Salovey, 2002; Dillard & Peck, 2000; Dillard & Meijnders, 2002). For instance, a fear appeal may elicit emotional responses of fear as well as anger and disgust; which initiate different action tendencies that may compete with or contribute to persuasive effects (e.g., attitude change). Third, there is limited examination of the influence of negative and positive emotion on the attitudes, intentions, and self-efficacy related to safe sex (i.e., condom use).
Given the limited knowledge, it was important to examine the influence of negative (i.e., fear, guilt, anger, sadness) and positive (i.e., happiness, surprise) emotional responses on condom use attitudes, condom use intentions, and condom use self-efficacy.

Rationale

Substantial research documents that young people continue to engage in alarming rates of sexual risk behavior (Centers for Disease Control and Prevention, 2009; Centers for Disease Control and Prevention, 2005; Lewis et al., 2009; Marston & King, 2006; Opt & Loffredo, 2004). Consequently, high rates of STD/HIV infection and unintended pregnancies make young adults an at-risk population in need of intervention (Centers for Disease Control and Prevention, 2005; Malhotra, 2008; Opt & Loffredo, 2004).

Engagement in safe sex behaviors (e.g., condom use) has been identified as a major way to prevent negative health consequences (e.g., STD infection). Many STD/HIV interventions have been developed to increase engagement in safe sex behaviors among young adults. However, there are discrepancies regarding the effectiveness of HIV/STD prevention interventions in eliciting sexual behavior changes (e.g., increased condom use), as evidenced by inconsistent empirical findings (Kirby et al., 2007). The continued engagement in sexual risk behaviors and the discrepancies in HIV/STD intervention effectiveness appear to suggest that the condom use attitudes, condom use intentions, and condom use self-efficacy of young people need further empirical attention. Factors (i.e., safe sex message advertisements and emotional responses) that have been found to be positively associated with attitude and behavior change were of particular interest.

Previous literature has reported associations between message appeals (i.e., rational appeal, negative emotional appeal, positive emotional appeal) and attitude and behavior
change. However, within the literature are discrepancies regarding which message appeals are most effective in eliciting attitude and behavior change (Lee & Davie, 1997; Marchand & Filiatrault, 2002; O’Keefe & Jensen, 2007; Perse et al., 1997). Additionally, emotional responses have been associated with attitude and behavior change (Dillard & Peck, 2000; Dillard et al., 1996; Nabi, 2002). However, information regarding the impact of message appeals and negative (i.e., fear, guilt, anger, sadness) and positive (i.e., happiness, surprise) emotional responses on sexual attitudes and intentions was generally scarce and unclear. In order to address the inconsistent, scarce, and unclear findings in the sexual risk prevention literature, an examination of message appeals as measured by safe sex advertisements (i.e. rational, negative emotional, positive emotional) and emotional responses (i.e., fear, guilt, anger, sadness, happiness, surprise) was conducted.

**Purpose, Hypotheses, and Research Questions**

In an attempt to expand on the risk prevention literature, the current study aim was four-fold: (a) examined the impact of safe sex advertisements (i.e., rational appeal, negative emotional appeal, positive emotional appeal) and biological sex (i.e., man, woman) on participants’ condom use attitudes, condom use intentions, condom use self-efficacy, negative (i.e., fear, guilt, anger, sadness) and positive (i.e., happiness, surprise) emotional responses; (b) determined how much of the variance in condom use attitudes was accounted for by negative (i.e., fear, guilt, anger, sadness) and positive (i.e., happiness, surprise) emotional responses; (c) determined how much of the variance in condom use intentions was accounted for by negative (i.e., fear, guilt, anger, sadness) and positive emotional responses (i.e., happiness, surprise); and (d) determined how much of the variance in condom use self-efficacy was accounted for by negative (i.e., fear, guilt, anger, sadness) and positive (i.e.,
happiness, surprise) emotional responses. The following hypotheses were offered to address the study purposes:

1. Women who view the negative emotional advertisement will report more positive condom use attitudes, intentions, and self-efficacy than men who view the negative emotional advertisement and participants who view the positive emotional and rational advertisements.

2. Women who view the negative emotional advertisement will report greater negative emotional responses than men who view the negative emotional advertisement and participants who view the positive emotional and rational advertisements; and as compared to the rational and negative emotional advertisements, the positive emotional advertisement will be associated with greater positive emotional responses amongst participants.

3. Greater negative and positive emotional responses will be predictive of more positive condom use attitudes.

4. Greater negative and positive emotional responses will be predictive of greater intentions to use condoms.

5. Greater negative and positive emotional responses will be predictive of greater condom use self-efficacy.
CHAPTER 3
METHODOLOGY

Participants

Prior to the main study, a pilot study was conducted to assess the perceived
differences of the modified safe sex advertisements. Participants in the pilot study were 60
participants. To ensure an equal number of participants in each message appeal group, 20
participants were solicited for each group (i.e., rational advertisement, negative emotional
advertisement, positive emotional advertisement) for a total of 60 participants. Due to the
nature of the pilot study as well as the method of data collection (i.e., in-class collection with
undergraduate students), participants were instructed not to provide any identifying
information on the survey materials and none of the survey materials asked for private and/or
identifying information (e.g., demographic information, sexual history) of participants. This
procedure was followed in an effort to maintain the confidentiality and anonymity of
participants; therefore, there was no demographic information collected for the pilot sample.

Participants in the main study were 275 college participants. Of the 275 surveys
collected, 203 were complete and used for the study analyses. The sample consisted of 154
women and 29 men from 18 to 25 years of age ($M = 21.44, SD = 2.66$). Information
containing the demographic data for the main study sample is presented in Table 2.
According to Tabachnick and Fidell (2001), 20 participants are needed for each cell in a
MANOVA. Therefore, the sample size of 203 participants follows the criteria suggested by
Tabachnick and Fidell for sufficient power for a MANOVA. Additionally, a specific
formula ($N = 50 + 8m$, where $m$ is the number of independent variables) was used to
determine the appropriate sample size needed for a regression analysis (Tabachnick & Fidell,
The sample size of 203 participants follows the criteria suggested by Tabachnick and Fidell for sufficient power for a regression analysis.

Table 2

**Summary of Demographic Characteristics for the Total Sample**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>154</td>
<td>75.9</td>
</tr>
<tr>
<td>Men</td>
<td>29</td>
<td>14.3</td>
</tr>
<tr>
<td>Missing</td>
<td>20</td>
<td>9.4</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian American</td>
<td>8</td>
<td>3.9</td>
</tr>
<tr>
<td>African American</td>
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<td>13.8</td>
</tr>
<tr>
<td>Caucasian</td>
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<td>63.1</td>
</tr>
<tr>
<td>Hispanic</td>
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<td>5.4</td>
</tr>
<tr>
<td>Multiracial/Biracial</td>
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<td>3.4</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>.5</td>
</tr>
<tr>
<td>Missing</td>
<td>20</td>
<td>9.9</td>
</tr>
<tr>
<td><strong>Sexual Orientation</strong></td>
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<td></td>
</tr>
<tr>
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<td>8.4</td>
</tr>
<tr>
<td>Gay/Lesbian</td>
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<td>2.0</td>
</tr>
<tr>
<td>Bisexual</td>
<td>8</td>
<td>3.9</td>
</tr>
<tr>
<td>Other</td>
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<td>.5</td>
</tr>
<tr>
<td>Missing</td>
<td>18</td>
<td>8.9</td>
</tr>
<tr>
<td><strong>Relationship status</strong></td>
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<td></td>
</tr>
<tr>
<td>No Serious Relationship</td>
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<td>34.0</td>
</tr>
<tr>
<td>Committed, Not living together</td>
<td>66</td>
<td>32.5</td>
</tr>
<tr>
<td>Committed, Living Together</td>
<td>28</td>
<td>13.8</td>
</tr>
<tr>
<td>Married</td>
<td>15</td>
<td>7.4</td>
</tr>
<tr>
<td>Separated</td>
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<td>1.5</td>
</tr>
<tr>
<td>Divorced</td>
<td>1</td>
<td>.5</td>
</tr>
<tr>
<td>Remarried</td>
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<td>.5</td>
</tr>
<tr>
<td>Missing</td>
<td>20</td>
<td>9.9</td>
</tr>
</tbody>
</table>

(continued)
Table 2

Summary of Demographic Characteristics for the Total Sample

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification Level</td>
<td>183</td>
<td>97.4</td>
</tr>
<tr>
<td>Not In School</td>
<td>1</td>
<td>.5</td>
</tr>
<tr>
<td>First Year</td>
<td>30</td>
<td>14.8</td>
</tr>
<tr>
<td>Sophomore</td>
<td>18</td>
<td>8.9</td>
</tr>
<tr>
<td>Junior</td>
<td>58</td>
<td>28.6</td>
</tr>
<tr>
<td>Senior</td>
<td>64</td>
<td>31.5</td>
</tr>
<tr>
<td>Classification Level</td>
<td>183</td>
<td>97.4</td>
</tr>
<tr>
<td>College Graduate</td>
<td>4</td>
<td>2.0</td>
</tr>
<tr>
<td>Graduate/Professional</td>
<td>8</td>
<td>3.9</td>
</tr>
<tr>
<td>Missing</td>
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<td>9.9</td>
</tr>
<tr>
<td>Parental Household Income</td>
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<td>89.7</td>
</tr>
<tr>
<td>$0 - $25,000</td>
<td>26</td>
<td>12.8</td>
</tr>
<tr>
<td>$25,000 - $50,000</td>
<td>46</td>
<td>22.7</td>
</tr>
<tr>
<td>$50,000 - $75,000</td>
<td>31</td>
<td>15.3</td>
</tr>
<tr>
<td>$75,000 - $100,000</td>
<td>31</td>
<td>15.3</td>
</tr>
<tr>
<td>$100,000+</td>
<td>48</td>
<td>23.6</td>
</tr>
<tr>
<td>Missing</td>
<td>21</td>
<td>10.3</td>
</tr>
<tr>
<td>Engaged In Vaginal Sex</td>
<td>185</td>
<td>91.1</td>
</tr>
<tr>
<td>Yes</td>
<td>163</td>
<td>80.3</td>
</tr>
<tr>
<td>No</td>
<td>22</td>
<td>10.8</td>
</tr>
<tr>
<td>Missing</td>
<td>18</td>
<td>9.9</td>
</tr>
<tr>
<td>Engaged In Anal Sex</td>
<td>183</td>
<td>90.1</td>
</tr>
<tr>
<td>Yes</td>
<td>65</td>
<td>32.0</td>
</tr>
<tr>
<td>No</td>
<td>118</td>
<td>58.1</td>
</tr>
<tr>
<td>Missing</td>
<td>20</td>
<td>9.9</td>
</tr>
<tr>
<td>Engaged In Oral Sex</td>
<td>183</td>
<td>90.1</td>
</tr>
<tr>
<td>Yes</td>
<td>164</td>
<td>80.8</td>
</tr>
<tr>
<td>No</td>
<td>19</td>
<td>9.4</td>
</tr>
<tr>
<td>Missing</td>
<td>20</td>
<td>9.9</td>
</tr>
</tbody>
</table>
Table 2

Summary of Demographic Characteristics for the Total Sample

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who Have Engaged In Sexual Intercourse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only men</td>
<td>134</td>
<td>66.0</td>
</tr>
<tr>
<td>Mostly men</td>
<td>14</td>
<td>6.9</td>
</tr>
<tr>
<td>Equally men and women</td>
<td>1</td>
<td>.5</td>
</tr>
<tr>
<td>Mostly women</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Only women</td>
<td>27</td>
<td>13.3</td>
</tr>
<tr>
<td>Missing</td>
<td>27</td>
<td>13.3</td>
</tr>
<tr>
<td>Engaged In Unprotected Vaginal Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>148</td>
<td>72.9</td>
</tr>
<tr>
<td>No</td>
<td>36</td>
<td>17.7</td>
</tr>
<tr>
<td>Missing</td>
<td>19</td>
<td>9.4</td>
</tr>
<tr>
<td>Engaged In Unprotected Anal Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>50</td>
<td>24.6</td>
</tr>
<tr>
<td>No</td>
<td>129</td>
<td>63.5</td>
</tr>
<tr>
<td>Missing</td>
<td>24</td>
<td>11.8</td>
</tr>
<tr>
<td>Engaged In Unprotected Oral Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>154</td>
<td>75.9</td>
</tr>
<tr>
<td>No</td>
<td>27</td>
<td>13.3</td>
</tr>
<tr>
<td>Missing</td>
<td>22</td>
<td>10.8</td>
</tr>
<tr>
<td>Condom Use Morally Acceptable</td>
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<td></td>
</tr>
<tr>
<td>Yes</td>
<td>182</td>
<td>89.7</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td>Missing</td>
<td>18</td>
<td>8.9</td>
</tr>
<tr>
<td>Currently Sexually Active</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>139</td>
<td>68.5</td>
</tr>
</tbody>
</table>

(continued)
Table 2

Summary of Demographic Characteristics for the Total Sample

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently Sexually Active</td>
<td>185</td>
<td>91.1</td>
</tr>
<tr>
<td>No</td>
<td>46</td>
<td>22.7</td>
</tr>
<tr>
<td>Missing</td>
<td>18</td>
<td>8.9</td>
</tr>
<tr>
<td>Been Tested for HIV/AIDS</td>
<td>185</td>
<td>91.1</td>
</tr>
<tr>
<td>Yes</td>
<td>103</td>
<td>50.7</td>
</tr>
<tr>
<td>No</td>
<td>78</td>
<td>38.4</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>4</td>
<td>2.0</td>
</tr>
<tr>
<td>Missing</td>
<td>18</td>
<td>8.9</td>
</tr>
<tr>
<td>Get Results of HIV/AIDS Test</td>
<td>184</td>
<td>90.6</td>
</tr>
<tr>
<td>Yes</td>
<td>100</td>
<td>49.3</td>
</tr>
<tr>
<td>No</td>
<td>26</td>
<td>12.8</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>58</td>
<td>28.6</td>
</tr>
<tr>
<td>Missing</td>
<td>19</td>
<td>9.4</td>
</tr>
</tbody>
</table>

Measures

Safe sex message appeal advertisements. Message Appeals were in print advertisement/poster format. The Rational and Negative Emotional Appeal advertisements were developed using the rational and emotional appeal scripts in the Perse et al. (1996) study, which were based upon PSAs produced by the Centers for Disease Control and Prevention “America Responds to AIDS” campaign. These scripts are available in the public domain. I developed a Positive Emotional appeal script based upon criteria suggested by Tobin (1997) and Marchand and Filiatrault (2002) for developing positive health promotion messages (e.g., positive images of sexuality and emphasis on facilitating condom usage
instead of consequences of lack of condom usage). The safe sex advertisements were developed to mimic Public Service Announcement (PSA) advertisements/posters (see Appendices B – D). PSA interventions have several advantages, which include: (a) reaching many people quickly; (b) providing information; (c) changing and reinforcing attitudes; (d) prompting immediate actions (e.g., calling toll-free number); and (e) increasing engagement in the desired action (e.g., condom use); (Center For Disease Control and Prevention, 1995). Each of the advertisements included a statistic relevant to the young adult age group (i.e., “Each year, there are approximately 19 million new HIV infections. Approximately half of all infections are among individuals aged 15 to 24, although they represent only 25% of the sexually active population”); (Centers for Disease Control and Prevention, 2009). This statistic was available in the public domain. I developed the safe sex advertisements by including the message appeal script, an image of couples and a statistic relevant to the study sample. The safe sex advertisements differed with regard to the message scripts and the images displayed in the advertisement; however, all of the advertisements contain the same HIV statistic. The images used on the advertisements were retrieved from the public domain using an internet search engine. The rational appeal advertisement included the rational appeal script and an image of an individual speaking with a doctor (script and image made available via the public domain). The negative emotional appeal advertisement included the emotional appeal script and an image of a distressed couple (i.e., visibly upset); this image was included because it may elicit negative emotional reactions (script and image made available via the public domain). The positive emotional appeal advertisement included the positive appeal script and an image of a couple embracing; which attempted to elicit a
positive image of sexuality and, subsequently, a positive emotional reaction (script was developed, the image made available via the public domain).

The advertisements were examined for face validity and credibility by four communication experts specializing in journalism and mass communication, which focuses on print/electronic journalism, radio, television, and advertising. The communication experts included three communication tenure track professors/faculty and one advanced communication student (i.e., graduate student in communication field). These experts were solicited for several reasons: (a) readily accessible in a university setting; (b) currently studying and/or teaching theories related to message communication, thus making their opinions relevant; and (c) many faculty members were professionally active in the field (e.g., communication theorists, journalists). The experts were specifically requested to determine if the advertisements appeared to reflect rational, negative emotional and positive emotional appeals. In addition, the experts were questioned regarding their opinion on the attractiveness of the advertisements, readability of the advertisements, credibility of the advertisements and face validity of the advertisements (i.e., whether they appeared to capture the intended constructs). Experts were asked to provide input regarding the use of images of multi-ethnic individuals versus exclusively Caucasian individuals in the advertisements. Lastly, experts were questioned about the color scheme of the advertisements (e.g., dark, warm, neutral colors) and its appropriateness. Feedback from the experts was used to make appropriate modifications to the safe sex advertisements before they were piloted.

According to all expert feedback, the advertisements appeared different than one another in terms of persuasiveness and representativeness of different appeal types. Expert feedback included information about other aspects of the advertisements that required
modification. Based upon expert feedback, the following modifications were made to all three advertisements. Firstly, the images were modified on all the advertisements to include noticeably ethnic individuals. Each advertisement included images of African American, Biracial and/or Interracial couples, in an effort to appeal to a more diverse population. Secondly, the length of text was decreased and the language of the text was simplified in each advertisement. A significant portion of text was removed to reduce wordiness of the advertisements. For example, the phrases “Put the condom on before you have any genital contact” and “Right after ejaculation, hold the condom tight and withdraw” were removed to reduce the length and wordiness of the rational advertisement. The language used for the advertisements was made consistent with an 8th grade reading level, which was assessed using Flesch-Kincaid Reading Grade Level Statistic (i.e., ranged from 5.0 – 8.0) and Readability Score (i.e., ranged from 64.1 – 79.9). Lastly, the graphics and texts were modified on all the advertisements. In an effort to increase readability, the text was made clearer and easier to read (i.e., increased font, bolded words, etc.). Additionally, the graphics were changed (i.e., color scheme, font color) to aid in readability. Additional changes were made to the Negative Emotional Advertisement, which included: (a) removal of inflammatory language regarding HIV/AIDS (i.e., “AIDS is a Killer disease”) and (b) inclusion of the phrase “Use a latex condom every time” to ensure consistency with the other advertisements. Additional changes were made to the Rational Advertisement, which included: (a) removal of the phrase: “People have dreamed up a million ways that you can get HIV/AIDs and other STDs, but there are really only a few”, (b) reduction in the “instructional” nature of the advertisement, (c) removal of inflammatory language regarding HIV/AIDS (i.e., “AIDS is a Killer disease”), and (d) removal of potentially misleading
and/or misinforming phrase (e.g., “If you do all of these things, condoms can be pretty effective”). The modified advertisements were used for the pilot study and the main study (See Appendices E – G).

**Manipulation Check Questions.** The manipulation check questions were adapted from the Marchand and Filiatrault’s (2002) study (see Appendix H). Eighteen statements were used to measure how each message appeal was perceived: whether it was seen as transmitting facts ‘rationally’ (i.e., without emotion) (six items); as conveying a positive image of sexuality (six items); or as arousing negative emotion (six items). All participants (i.e., pilot study participants and main study participants) were presented with 18 statements and asked to indicate the degree to which they agree with the statement using a five point scale: 1 = “strongly disagree” 2 =“disagree”, 3 = “neutral”, 4 = “agree”, 5 =“strongly agree”, with higher scores indicating higher perceptions of the advertisements being rational, conveying a positive image of sexuality or arousing negative emotion. Ideally, the rational advertisement should score in the highest range (i.e., 24 – 30) on the rational aspect, the negative emotional advertisement should score in the highest range on the negative aspect, and the positive emotional advertisement should score in the highest range on the positive aspect. In both the pilot and main study, the negative emotional and positive emotional safe sex advertisements received high scores on the aspect that they described as well as moderately high scores on the rational aspect. Of importance were the differences in response patterns among the advertisements. Each of the advertisements’ response patterns differed (i.e., receive different patterns of scores on the three dependent variables). Pilot study and main study analyses indicated that the manipulation was considered successful (i.e., different response patterns were found for each of the advertisements in the expected directions).
information will be further discussed in the Results: Preliminary Analyses and Primary Analyses sections).

Marchand and Filiatrault (2002) conducted a factor analysis with Varimax rotation on the 18 items. The analysis revealed three factors each one measuring, respectively, the negative emotional arousal aspect (Factor 1), the positive image of sexuality aspect (Factor 2), and the rational aspect (Factor 3). The following Cronbach’s alphas were obtained: .92 for the negative emotional arousal aspect; .83 for the positive image of sexuality aspect; and .85 for the rational aspect.

**Positive and negative emotional responses.** The Positive and Negative Affect Schedule - Expanded Form (PANAS-X) was used to assess participants’ negative and positive emotional responses (see Appendix I). The PANAS-X was developed by Watson and Clark (1994); an expanded form of the original Positive and Negative Affect Schedule (PANAS) developed by Watson, Clark, and Tellegen (1988). The PANAS-X is a 60-item scale which measures positive emotion and negative emotion as well as 11 specific emotions: Fear, Sadness, Guilt, Hostility, Shyness, Fatigue, Surprise, Joviality, Self-Assurance, Attentiveness, and Serenity. For the present study, the negative and positive emotions of fear, sadness, guilt, hostility (i.e., anger), surprise and joviality (i.e., happiness) was used. The emotion subscales includes the following items: (a) Fear includes six items (i.e., afraid, scared, frightened, nervous, jittery, shaky); (b) Sadness includes five items (i.e., sad, blue, downhearted, alone, lonely); (c) Guilt includes six items (i.e., guilty, ashamed, blameworthy, angry at self, disgusted with self, dissatisfied with self); (d) Hostility (i.e., anger) includes six items (i.e., angry, hostile, irritable, scornful, disgusted, loathing); (e) Surprise includes three items (i.e., amazed, surprised, astonished); and (f) Joviality (i.e., happiness) includes eight items.
items (i.e., happy, joyful, delighted, cheerful, excited, enthusiastic, lively, energetic). Thus, 34 items were used to assess participants’ negative and positive emotional responses. Participants indicated the degree to which they experienced a series of emotions on a five-point scale ranging from 1 (very slightly/not at all) to 5 (extremely), with higher scores indicating higher intensity of experienced emotion. Different temporal instructions (e.g., “today”, “the present moment”, “the past few weeks”) could be used for the PANAS-X. For the present study, temporal instructions included emotion experienced “right now, (that is, at the present moment)” in response to the safe sex advertisement.

The alpha reliabilities for both of the positive and negative emotion scales are high, generally ranging from .83 to .90 for Positive Affect, and from .85 to .90 for Negative Affect (Watson & Clark, 1994). Overall, the reliabilities of the scales are unaffected by the time instructions that are used or by the type of population (student, adult, or patient) that is assessed. For undergraduates, reliability coefficients include .88 for the positive affect scale and .85 for the negative affect scale. Of the specific affect scales used for the present study, reliability coefficients ranged from .80 to .93 in a sample of undergraduate participants who rated their emotional experiences at that moment (Watson & Clark, 1994). Internal consistency reliability coefficients included the following: .87 for fear, .86 for sadness, .86 for guilt, .82 for hostility (i.e., anger), .80 for surprise and .93 for joviality (i.e., happiness).

Construct validity of the scales has been demonstrated via factorial analyses. For the higher order scales (i.e., Positive and Negative Affect) a principal factor analysis using six data sets, each of which was based on a different rated time frame, was conducted. Two dominant factors emerged in each solution that jointly accounted for roughly two-thirds of the common variance, which represented the Negative Affect and Positive Affect factors.
(Watson & Clark, 1994). For the lower order scales (i.e., Fear, Sadness, Guilt, Hostility, Shyness, Fatigue, Surprise, Joviality, Self-Assurance, Attentiveness, and Serenity) a principal factor analysis using six data sets, each of which was based on a different rated time frame, was conducted. Eleven emotion factors emerged that accounted for the majority of the common variance. The factors were easily interpretable and broadly consistent with existing theoretical models of emotion (Watson & Clark, 1994). For the present study, internal consistency reliability coefficients included the following: .85 for fear, .74 for sadness, .90 for guilt, .79 for hostility (i.e., anger), .76 for surprise and .94 for joviality (i.e., happiness) subscales.

**Condom Use Attitudes and Intentions.** Condom use attitudes and intentions were measured using two subscales of The Sexual Risks Scale (see Appendices J & K). The Sexual Risks Scale was developed by DeHart and Birkimer (1997) and was designed to assess safe sex beliefs and attitudes for HIV prevention. The 38-item scale consists of 6 subscales: (a) attitudes about safer sex, (b) normative beliefs, (c) intention to practice safer sex, (d) expectations about safer sex, (e) perceived susceptibility to HIV/AIDS, and (f) substance use (DeHart & Birkimer, 1997). For the current study, the attitudes and intentions subscales were used (DeHart & Birkimer, 1997). The attitudes subscale consists of 13 items, which measure the influence of condoms upon sexual pleasure and one’s stance on condom use (e.g. “Generally, I am in favor of using condoms”). The intention subscale consists of 6 items that measure one’s intention to practice safer sex (e.g. “I am determined to practice ‘safer sex’”). All subscale items are measured on a five point Likert scale (1 = “strongly disagree” 2 =“disagree”, 3 = “neutral”, 4 = “agree”, 5 =“strongly agree”). Attitude subscale item scores range from 13 to 65; with higher scores indicating more favorable attitudes.
towards condom use. Intention subscale item scores range from 6 to 30; with higher scores representing greater intentions to practice safe sex. For the present study, the internal consistency reliability for the Attitudes subscales is $\alpha = .89$ and the Intentions subscale is $\alpha = .90$.

A factorial analysis provided internal structure validity for the Sexual Risks Scale (DeHart & Birkimer, 1997). The first analysis contained items concerning attitudes, norms, susceptibility and substance use. A principle components analysis with Varimax rotation yielded four distinct components; with attitudes toward safer sex accounting for 24% of the variance (DeHart & Birkimer, 1997). A second analysis contained items concerning expectations and intention to practice safe sex items. Intention to practice safer sex items represented Factors 2 and 3; one dimension representing items that mentioned condom use and the other dimension representing the items concerning safer sex (DeHart & Birkimer, 1997).

**Condom Use Self-Efficacy.** The Condom Use Self-Efficacy Scale (CUSES, see Appendix L) can be used to assess an individual's perception of his or her ability to use condoms (e.g., “I feel confident in my ability to put a condom on myself or my partner”). The CUSES is a 28 items scale developed by Brafford and Beck (1991). All subscale items are measured on a five point Likert scale (1 = “strongly disagree” 2 = “disagree”, 3 = “neutral”, 4 = “agree”, 5 = “strongly agree”); with higher score indicating high condom self-efficacy. Though the CUSES was developed and used primarily as a full scale (Brafford & Beck, 1991), later studies provided evidence for the underlying dimensions of condom use self-efficacy (Barkley & Burns, 2000; Brien, Thombs, Mahoney, & Wallnau, 1994). The CUSES has been found to consist of three (i.e., Appropriation, Sexually Transmitted
Diseases, Partner Disapproval) (Barkley & Burns, 2000) and/or four (i.e., Mechanics, Assertive, Partner Disapproval, Intoxicants) (Brien et al., 1994) subscales; however, there are inconsistencies in exactly how many dimensions and which dimensions are of most importance, because the authors defined most of the subscales differently. Therefore, the CUSES was used in the current study as it was originally developed and validated, as a full scale.

Internal consistency reliability, test-retest reliability, convergent and construct validity are provided for the CUSES during its original development (Brafford & Beck, 1991). The internal consistency reliability for the full scale is $\alpha = .91$. The two-week test-retest reliability was .81. Convergent validity was examined by correlating the CUSES with the Attitudes Toward Condoms scale, the Contraceptive Self-Efficacy scale and a behavioral intentions scale. CUSES was positively correlated with the Attitudes Toward Condoms scale, the Contraceptive Self-Efficacy scale, and intentions to use condoms scale. Furthermore, the CUSES was found to be uncorrelated with a social desirability scale. For the present study, the internal consistency reliability for the CUSES was $\alpha = .94$.

Construct validity was also provided; in particular, the CUSES was able to differentiate between groups of people. Specifically, the following groups scored highest on the CUSES: (a) condom users scored higher than non-condom users, (b) sexually experienced participants scored higher than inexperienced subjects, (c) condom users primarily concerned with birth control scored higher than those less so concerned, and (d) condom users without histories of STDs scored higher than those with histories (Brafford & Beck, 1991). Interestingly, there were no differences in condom use self-efficacy between men and women (Brafford & Beck, 1991).
**Demographic Questionnaire.** A demographic questionnaire (see Appendix M) was used to gather additional information regarding participants’ age, sex, relationship status, sexual orientation, and year in college.

Participants were asked to respond to questions pertaining to their sexual history, in an effort to further describe the sample. Seven questions were asked to assess participants’ sexual history. The first question addressed with whom the participant has engaged in sexual intercourse (e.g., mostly women, men and women). Further questions assessed whether participants have engaged in vaginal sex and whether they have engaged in unprotected vaginal sex. Questions also assessed participants’ current and lifetime sexual partners. Finally, questions pertaining to whether participants’ have been tested for HIV and received the results of the HIV test were included.

**Procedure**

Permission from the IRB was obtained. Following IRB permission, professors/instructors and departments affiliated with a four-year institution were contacted via email to advertise the research project and to gain permission to solicit participants from their classes and/or departments. Participants were initially solicited for participation in a pilot study via in-class solicitation (i.e., participants in general psychology classes were solicited and invited to participate in class). Piloting involved participants viewing one of the safe sex advertisements and providing written feedback. Written feedback was participant responses to the 18 manipulation check questions (Appendix H) and 4 open-ended questions assessing participants’ overall perception of the advertisement (Appendix P). To assess whether participants appreciated the quality of the message appeal, they were asked to answer open-ended questions related to the relevance and persuasiveness of the message in
which they were randomly presented. They were also presented with the opportunity to provide any suggestions for improvement.

Prior to the main study, a pilot study was conducted to assess the perceived differences of the safe sex advertisements. A sample of 60 young adults provided feedback on the advertisements. Participants received one of three advertisements: rational, negative emotional, and positive emotional. They also received the manipulation check questions and open-ended questions about their thoughts on the advertisements. Participants’ responses were analyzed to determine whether each advertisement significantly differed from each other (see Results: Preliminary Analyses section) and were reflective of the intended message appeal advertisement.

Following the piloting of the advertisements, participants were solicited for participation in the main study. Once permission to solicit participants was obtained, the following occurred: (a) an online link was provided to interested professors, which they disseminated to prospective participants when in-class solicitation was not possible; and/or (c) an online link was provided to undergraduate departments via email, which they disseminated to prospective participants through listervs. E-mail solicitation involved the dissemination of a survey link via email to professors/faculty and undergraduate departments. E-mail solicitations included the survey cover letter, inclusion criteria (i.e., participants age 18 to 25) and survey link (i.e., https://www.surveymonkey.com/s/TPHCXS). Lastly, participants were encouraged to tell their peers (i.e., other young adults) about the study; in an effort to reach a broader number of participants. This statement was included in the cover letter as well.
Interested participants completed study materials online. Online data collection was utilized as the sole means of data collection for the main study. Using on-line data collection ensured more privacy for the participant, reduced the risk of participants seeing the other advertisements (which is likely with paper/pencil administration), and controlled extraneous variables (e.g., illegible responses to survey questions). Furthermore, online completion of research material was more attractive due to the sensitive nature of the study. Incentives were offered for participants’ time; specifically, participants had the option of entering their name in a drawing for one of five fifty dollar Amazon gift cards.

Interested participants received a cover letter. The cover letter included several important components: (a) the nature of the study, (b) the strictly voluntary nature of participation in the study, (c) their right to refuse or end participation at any time without consequence, (d) the time of burden, (e) contact information for the researcher, and (f) online contact information for HIV/STD testing and counseling services (e.g., CDC National HIV and STD Testing Resources website). Additionally, the cover letter instructed participants not to include any identifying information, in order to ensure their anonymity. Participant consent was inferred from completion of the study materials. Interested participants viewed one message appeal advertisement (either rational, negative emotional, or positive emotional) and completed the following research materials: the manipulation check questions, the PANAS-X, SRS subscales, CUSES, and demographics questionnaire.

Study participation involved the completion of several questions related to participants’ thoughts and feelings about the safe sex advertisement and condom use. The nature of the present study was not intended to be deceptive and required participants’ honest responses about the advertisement and condom use. Participants received only one version of
the safe sex advertisement. For online completion, random assignment was utilized to ensure that each participant randomly received only one version of the advertisements. Before viewing the safe sex advertisement, participants were given brief instructions. The instructions informed participants to read the safe sex advertisement and honestly respond to the survey questions (i.e., manipulation questions, emotion questions, and condom use questions) based upon their thoughts/feelings about the advertisement. Participants were provided with other instructions (see Appendices J – L) for the condom use surveys (i.e., “Please respond to all questions even if you are not sexually active or have never used condoms. In such cases indicate how you think you would feel in such a situation”). The safe sex advertisement was presented first followed by the manipulation check questions and remaining items. Participants were instructed to complete the materials in the order presented. Lastly, participants were presented with suggestions for ways to reduce their risk (e.g., use a condom during every sexual interaction, regular testing) following the completion of survey materials (Appendix N). Providing suggestions or ways to reduce risk has been reported (Centers for Disease Control & Prevention, 2009; Perloff, 2001) as helpful in alleviating message-induced distress; particularly, when individuals are presented with fearful and/or distressing information. Survey completion was estimated to take 10 to 15 minutes.
Pilot Study

Analyses were conducted to determine whether the advertisements were significantly different from one another. Specifically, one-way Analyses of Variance (ANOVAs) were conducted to determine whether the advertisements differed with regard to perceptions of the advertisements as being a rational message, a negative emotionally arousing message, or a positive health promoting message. The independent variable was the safe sex advertisement (i.e., rational, negative emotional, positive emotional) and the dependent variables were the message perception ratings (i.e., rational, negative emotional arousing, positive health promoting). An ANOVA was conducted for each dependent variable, for a total of three ANOVAs.

A one-way ANOVA was used to test for differences in rational perception ratings among the three safe sex advertisements. Rational perception ratings did not differ significantly across the three advertisements, $F(2, 56) = 0.02, p = .98$. The advertisements did not differ in terms of students’ perceptions of the advertisements conveying rational and practical information, in that all of the advertisements were viewed as practical and informative.

A one-way ANOVA was used to test for differences in negative perception ratings among the three safe sex advertisements. Negative perception ratings differed significantly across the three advertisements, $F(2, 56) = 8.98, p < .001$. Tukey post-hoc comparisons of the three advertisements indicated that the negative emotional advertisement group ($M = 18.84, SD = 4.54$) gave significantly higher negative perception ratings than those in the
rational advertisement group ($M = 15.10$, $SD = 3.77$, $p = .02$). Additionally, the negative emotional advertisement group ($M = 18.84$, $SD = 4.54$) gave significantly higher negative perception ratings than those in the positive emotional advertisement group ($M = 13.15$, $SD = 4.43$, $p < .001$). There were no significant differences in the negative perception ratings of those in the rational advertisement group ($M = 15.10$, $SD = 3.77$) and the positive emotional advertisement group ($M = 13.15$, $SD = 4.43$, $p = .32$). In terms of the perceptions of the advertisement, the negative emotional advertisement was perceived as more fear-inducing and negatively emotionally arousing than both the rational advertisement and the positive emotional advertisement.

A one-way ANOVA was used to test for differences in positive perception ratings among the three safe sex advertisements. Positive perception ratings differed significantly across the three advertisements, $F(2, 56) = 13.51$, $p < .001$. Tukey post-hoc comparisons of the three advertisements indicated that the positive emotional advertisement group ($M = 22.05$, $SD = 3.86$) gave significantly higher positive perception ratings than those in the rational advertisement group ($M = 19.10$, $SD = 4.01$, $p = .04$). Additionally, the positive emotional advertisement group ($M = 22.05$, $SD = 3.86$) gave significantly higher positive perception ratings than those in the negative emotional advertisement group ($M = 15.79$, $SD = 3.36$, $p < .001$). Lastly, the rational advertisement group ($M = 19.10$, $SD = 4.01$) gave significantly higher positive perception ratings than those in the negative emotional advertisement group ($M = 15.79$, $SD = 3.36$, $p = .02$). In terms of perceptions of the advertisement, the positive emotional advertisement was perceived as more positive health/sexuality promoting than both the rational advertisement and the negative emotional advertisement. Additionally, the rational advertisement was perceived as more positive
health/sexuality promoting than the negative emotional advertisement. Descriptive statistics including means, standard deviations, skewness, and kurtosis are found in Table 3.

Table 3

*Descriptive Statistics for the Rational Perception Ratings, Negative Perception Ratings and Positive Perception Ratings of the Safe Sex Advertisements in the Pilot Study*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Skewness (SE)</th>
<th>Kurtosis (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rating (Rational)</td>
<td>61</td>
<td>22.80</td>
<td>5.31</td>
<td>-1.08(.31)</td>
<td>1.68(.60)</td>
</tr>
<tr>
<td>Rational Ad</td>
<td>20</td>
<td>23.30</td>
<td>4.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Ad</td>
<td>20</td>
<td>22.65</td>
<td>5.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Ad</td>
<td>21</td>
<td>22.48</td>
<td>6.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Rating (Negative)</td>
<td>61</td>
<td>15.61</td>
<td>4.97</td>
<td>.13(.31)</td>
<td>-.73(.60)</td>
</tr>
<tr>
<td>Rational Ad</td>
<td>20</td>
<td>15.10</td>
<td>3.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Ad</td>
<td>20</td>
<td>18.20</td>
<td>5.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Ad</td>
<td>21</td>
<td>13.62</td>
<td>4.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Rating (Positive)</td>
<td>61</td>
<td>18.67</td>
<td>4.86</td>
<td>-.10(.31)</td>
<td>-1.54(.60)</td>
</tr>
<tr>
<td>Rational Ad</td>
<td>20</td>
<td>19.10</td>
<td>4.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Ad</td>
<td>20</td>
<td>15.30</td>
<td>3.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Ad</td>
<td>21</td>
<td>21.48</td>
<td>4.59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Main Study**

*Data preparation.* Assumptions of MANOVA and multiple regressions were examined. Raw data were prescreened and cleaned based on standards indicated by Tabachnick and Fidell (2007). First, each survey was examined and those with missing data
were eliminated from the analyses (i.e., 53). The surveys that contained missing data on the
majority of survey items were deleted (i.e., no responses on over half of the survey items
and/or surveys that had no responses at all) and these surveys were deleted because there was
limited and/or no data that could be used in the study analyses. The surveys that contained
no responses on over half of the survey items exhibited missing data towards the end of the
survey; which possibly indicated respondent fatigue. Future research should aim towards
having more concise surveys, in an effort to reduce fatigue. Next, data were examined for
univariate and multivariate outliers, multicollinearity, univariate normality (including
skewness and kurtosis), multivariate normality, and homoscedasticity. Mean scores were
calculated for all study variables. The assumption of ratio of cases, N = 203, to independent
variables, linearity, and multicollinearity were upheld. After examining standardized scores
with the use of p < .001, 16 univariate outliers were detected. The univariate outliers were
examined, to ensure that it was not an error in data entry, and were deleted. Mahalanobis
statistic (p < .001) was used to determine if there were any multivariate outliers. The results
indicated that there were four multivariate outliers and they were removed. There was also
evidence of violations of normality. The assumption of normality was violated by most of the
emotion subscales (i.e., Fear, Sadness, Guilt, Hostility, Surprise, Joviality) and the Condom
Intentions Subscale, as evidenced by the positive skewness on these scales. In order to
address these violations, transformations were made on the aforementioned subscales. Square
Root, Logarithmic, and Inverse transformations were made on the aforementioned variables
to determine if any of these transformations improved normality. All of the transformations
resulted in continued violations of normality (See Table 4). As a result, the original
variables were used in the analysis. Parametric statistics are generally robust to minor
violations of assumptions, thus the original planned analyses were run. Descriptive statistics for the study variables including means, standard deviations, skewness, and kurtosis are found in Table 5. Correlations of the study variables are found in Table 6.

Table 4

*Summary of Variable Transformations for the Condom Use Intentions Subscale and PANAS-X Subscales of Fear, Sadness, Guilt, Hostility, Surprise, and Joviality*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Skewness (SE)</th>
<th>Kurtosis (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condom Use Intentions</td>
<td>-.74 (.18)</td>
<td>.14 (.36)</td>
</tr>
<tr>
<td>Square Root Transformation</td>
<td>-1.43 (.18)</td>
<td>2.75 (.36)</td>
</tr>
<tr>
<td>Logarithmic Transformation</td>
<td>-1.04 (.18)</td>
<td>1.15 (.36)</td>
</tr>
<tr>
<td>Inverse Transformation</td>
<td>2.49 (.18)</td>
<td>8.77 (.36)</td>
</tr>
<tr>
<td>Fear</td>
<td>1.36 (.17)</td>
<td>1.23 (.34)</td>
</tr>
<tr>
<td>Square Root Transformation</td>
<td>1.09 (.17)</td>
<td>.32 (.34)</td>
</tr>
<tr>
<td>Logarithmic Transformation</td>
<td>.86 (.17)</td>
<td>-.35 (.34)</td>
</tr>
<tr>
<td>Inverse Transformation</td>
<td>-.49 (.17)</td>
<td>-1.14 (.34)</td>
</tr>
<tr>
<td>Sadness</td>
<td>1.52 (.17)</td>
<td>2.01 (.34)</td>
</tr>
<tr>
<td>Square Root Transformation</td>
<td>1.24 (.17)</td>
<td>.89 (.34)</td>
</tr>
<tr>
<td>Logarithmic Transformation</td>
<td>.98 (.17)</td>
<td>.08 (.34)</td>
</tr>
<tr>
<td>Inverse Transformation</td>
<td>-.58 (.17)</td>
<td>-.89 (.17)</td>
</tr>
<tr>
<td>Guilt</td>
<td>2.01 (.17)</td>
<td>3.33 (.34)</td>
</tr>
<tr>
<td>Square Root Transformation</td>
<td>1.78 (.17)</td>
<td>2.23 (.34)</td>
</tr>
<tr>
<td>Logarithmic Transformation</td>
<td>1.57 (.17)</td>
<td>1.36 (.34)</td>
</tr>
<tr>
<td>Inverse Transformation</td>
<td>-1.24 (.17)</td>
<td>.17 (.34)</td>
</tr>
<tr>
<td>Hostility</td>
<td>2.60 (.17)</td>
<td>7.45 (.34)</td>
</tr>
<tr>
<td>Square Root Transformation</td>
<td>2.23 (.17)</td>
<td>5.19 (.34)</td>
</tr>
<tr>
<td>Logarithmic Transformation</td>
<td>1.91 (.17)</td>
<td>3.43 (.34)</td>
</tr>
<tr>
<td>Inverse Transformation</td>
<td>-1.41 (.17)</td>
<td>1.15 (.34)</td>
</tr>
</tbody>
</table>
### Table 4

*Summary of Variable Transformations for the Condom Use Intentions Subscale and PANAS-X Subscales of Fear, Sadness, Guilt, Hostility, Surprise, and Joviality*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Skewness (SE)</th>
<th>Kurtosis (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surprise</td>
<td>1.11 (.17)</td>
<td>.32 (.34)</td>
</tr>
<tr>
<td></td>
<td>Square Root</td>
<td>-.32 (.34)</td>
</tr>
<tr>
<td></td>
<td>Logarithmic</td>
<td>-.81 (.34)</td>
</tr>
<tr>
<td></td>
<td>Inverse</td>
<td>-1.36 (.34)</td>
</tr>
<tr>
<td>Joviality</td>
<td>1.72 (.17)</td>
<td>2.04 (.34)</td>
</tr>
<tr>
<td></td>
<td>Square Root</td>
<td>1.08 (.34)</td>
</tr>
<tr>
<td></td>
<td>Logarithmic</td>
<td>.32 (.34)</td>
</tr>
<tr>
<td></td>
<td>Inverse</td>
<td>-.69 (.34)</td>
</tr>
</tbody>
</table>

### Table 5

*Descriptive Statistics for Measures of Sexual Risk Subscales of Condom Use Attitudes and Intention; Condom Use Self-Efficacy Scale; and PANAS-X Subscales of Fear, Sadness, Guilt, Hostility, Surprise and Joviality.*

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
<th>Skewness (SE)</th>
<th>Kurtosis (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attitudes</td>
<td>45.57</td>
<td>9.77</td>
<td>19.00 - 64.00</td>
<td>-.32 (.18)</td>
<td>-.39 (.36)</td>
</tr>
<tr>
<td>2. Intentions</td>
<td>28.68</td>
<td>5.67</td>
<td>11.00 - 35.00</td>
<td>-.74 (.18)</td>
<td>.14 (.36)</td>
</tr>
<tr>
<td>3. Self-Efficacy</td>
<td>112.48</td>
<td>16.96</td>
<td>75.00 - 140.00</td>
<td>-.10 (.19)</td>
<td>-.96 (.37)</td>
</tr>
<tr>
<td>4. Fear</td>
<td>8.87</td>
<td>3.57</td>
<td>6.00 - 22.00</td>
<td>1.36 (.17)</td>
<td>1.23 (.34)</td>
</tr>
<tr>
<td>5. Sadness</td>
<td>7.06</td>
<td>2.60</td>
<td>5.00 - 17.00</td>
<td>1.52 (.17)</td>
<td>2.01 (.34)</td>
</tr>
<tr>
<td>6. Guilt</td>
<td>7.88</td>
<td>3.30</td>
<td>6.00 - 21.00</td>
<td>2.01 (.17)</td>
<td>3.33 (.34)</td>
</tr>
</tbody>
</table>

(continued)
### Table 5

*Descriptive Statistics for Measures of Sexual Risk Subscales of Condom Use Attitudes and Intention; Condom Use Self-Efficacy Scale; and PANAS-X Subscales of Fear, Sadness, Guilt, Hostility, Surprise and Joviality.*

<table>
<thead>
<tr>
<th>Variable</th>
<th>$M$</th>
<th>$SD$</th>
<th>Range</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Hostility</td>
<td>7.34</td>
<td>2.39</td>
<td>6.00 - 18.00</td>
<td>2.60 (.17)</td>
<td>7.45 (.34)</td>
</tr>
<tr>
<td>8. Surprise</td>
<td>5.15</td>
<td>2.46</td>
<td>3.00 - 13.00</td>
<td>1.11 (.17)</td>
<td>.32 (.34)</td>
</tr>
<tr>
<td>9. Joviality</td>
<td>12.16</td>
<td>6.14</td>
<td>8.00 - 33.00</td>
<td>1.72 (.17)</td>
<td>2.04 (.34)</td>
</tr>
</tbody>
</table>

### Table 6

*Correlations Among Condom Use Attitudes, Condom Use Intentions, Condom Use Self-Efficacy, Fear, Sadness, Guilt, Hostility, Surprise, and Joviality.*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Condom Use Attitudes</td>
<td>--</td>
<td>.61**</td>
<td>.46**</td>
<td>-16*</td>
<td>-16*</td>
<td>-33**</td>
<td>-24**</td>
<td>.07</td>
<td>.09</td>
</tr>
<tr>
<td>2. Condom Use Intentions</td>
<td>--</td>
<td>.34**</td>
<td>.01</td>
<td>-.05</td>
<td>-.17*</td>
<td>-.11</td>
<td>.12</td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td>3. Condom Use Self-Efficacy</td>
<td>--</td>
<td>-.12</td>
<td>-.13</td>
<td>-.14</td>
<td>-.23**</td>
<td>.08</td>
<td>.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Fear</td>
<td>--</td>
<td>.53**</td>
<td>.59**</td>
<td>.64**</td>
<td>.26**</td>
<td>-.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Sadness</td>
<td>--</td>
<td>.48**</td>
<td>.65**</td>
<td>.18*</td>
<td>-.004</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Guilt</td>
<td>--</td>
<td>.57**</td>
<td>-.006</td>
<td>-.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Hostility</td>
<td>--</td>
<td>.27**</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Surprise</td>
<td>--</td>
<td>.22**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Joviality</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. * $p < .05$. ** $p < .01$. 
**Preliminary Analyses.** Analyses were conducted to test for perception differences among the three safe sex advertisements prior to the primary analyses. Descriptive statistics including means, standard deviations, skewness, and kurtosis are found in Table 7. One-way Analyses of Variance (ANOVA) were conducted to determine whether the advertisements differed with regard to perceptions of the advertisements as being a rational message, negatively emotionally arousing message, or a positive health promoting message. The independent variable was the safe sex advertisement (i.e., rational, negative emotional, positive emotional) and the dependent variables were the message perception ratings (i.e., rational, negative emotional arousing, positive health promoting). An ANOVA was conducted for each dependent variable, for a total of three ANOVAs.

Table 7

*Descriptive Statistics for the Rational Perception Ratings, Negative Perception Ratings and Positive Perception Ratings of the Safe Sex Advertisements in the Main Study*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Skewness (SE)</th>
<th>Kurtosis(SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rating (Rational)</td>
<td>195</td>
<td>23.30</td>
<td>3.51</td>
<td>-.20(.17)</td>
<td>-.22(.35)</td>
</tr>
<tr>
<td>Rational Ad</td>
<td>58</td>
<td>24.02</td>
<td>3.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Ad</td>
<td>68</td>
<td>23.04</td>
<td>4.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Ad</td>
<td>69</td>
<td>22.94</td>
<td>3.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Rating (Negative)</td>
<td>194</td>
<td>15.31</td>
<td>5.35</td>
<td>.32(.18)</td>
<td>-.59(.35)</td>
</tr>
<tr>
<td>Rational Ad</td>
<td>59</td>
<td>15.10</td>
<td>4.43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(continued)
Table 7

Descriptive Statistics for the Rational Perception Ratings, Negative Perception Ratings and Positive Perception Ratings of the Safe Sex Advertisements in the Main Study

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Skewness (SE)</th>
<th>Kurtosis(SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Ad</td>
<td>68</td>
<td>18.31</td>
<td>5.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Ad</td>
<td>67</td>
<td>12.45</td>
<td>4.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Rating (Positive)</td>
<td>194</td>
<td>19.68</td>
<td>4.58</td>
<td>-.28(.18)</td>
<td>-.16(.35)</td>
</tr>
<tr>
<td>Rational Ad</td>
<td>62</td>
<td>19.44</td>
<td>3.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Ad</td>
<td>67</td>
<td>17.91</td>
<td>4.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Ad</td>
<td>65</td>
<td>21.74</td>
<td>4.17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A one-way ANOVA was used to test for differences in rational perception ratings among the three safe sex advertisements. Similar to the pilot study results, rational perception ratings did not differ significantly across the three advertisements, $F(2, 192) = 1.76, p = 0.16$. The advertisements did not differ in terms of students’ perceptions of the advertisements conveying rational and practical information, in that all of the advertisements were viewed as practical and informative.

A one-way ANOVA was used to test for differences in negative perception ratings among the three safe sex advertisements. Negative perception ratings differed significantly across the three advertisements, $F(2, 191) = 25.46, p < .001$. Tukey post-hoc comparisons of the three advertisements indicated that the negative emotional advertisement group ($M = 18.31, SD = 5.43$) gave significantly higher negative perception ratings than those in the rational advertisement group ($M = 15.10, SD = 4.43, p < .001$). Additionally, the negative
emotional advertisement group \((M = 18.31, SD = 5.43)\) gave significantly higher negative perception ratings than those in the positive emotional advertisement group \((M = 12.45, SD = 4.35, p < .001)\). Additionally, there were significant differences in the negative perception ratings of those in the rational advertisement group \((M = 15.10, SD = 4.43)\) and the positive emotional advertisement group \((M = 12.45, SD = 4.35, p = .006)\). In terms of the perceptions of the advertisement, the negative emotional advertisement was perceived as more fear-inducing and negatively emotionally arousing than both the rational advertisement and the positive emotional advertisement. Additionally, the rational advertisement was perceived as more fear-inducing and negatively emotionally arousing than the positive emotional advertisement.

A one-way ANOVA was used to test for differences in positive perception ratings among the three safe sex advertisements. Positive perception ratings differed significantly across the three advertisements, \(F(2, 191) = 13.09, p < .001\). Tukey post-hoc comparisons of the three advertisements indicated that those in the positive emotional advertisement group \((M = 21.75, SD = 4.17)\) gave significantly higher positive perception ratings than those in the rational advertisement group \((M = 19.44, SD = 3.99, p = .009)\). Additionally, the positive emotional advertisement group \((M = 21.75, SD = 4.17)\) gave significantly higher positive perception ratings than those in the negative emotional advertisement group \((M = 17.91, SD = 4.74, p < .001)\). There were no significant difference in the positive perception ratings of those in the rational advertisement group \((M = 19.44, SD = 3.99)\) and those in the negative emotional advertisement group \((M = 17.91, SD = 4.74, p = .02)\). In terms of perceptions of the advertisement, the positive emotional advertisement was perceived as more positive
health/sexuality promoting than both the rational advertisement and the negative emotional advertisement.

Regarding the preliminary analysis, the negative emotional and positive emotional safe sex advertisements received high scores on the aspect that they described as well as moderately high scores on the rational aspect. Of importance were the differences in response patterns amongst the advertisements. Each of the advertisements’ response patterns differed (i.e., received different patterns of scores on the three dependent variables). Based upon this information, the manipulation was considered successful.

A factor analysis was conducted on the Sexual Risk Scale condom use attitudes subscale and condom use intentions subscale due to the limited empirical use and limited reliability and validity information on these two subscales. An analysis was not conducted on the Condom Use Self-Efficacy Scale (CUSES) because this scale was originally developed, frequently used, and validated as a full scale. The present study utilized the CUSES as a full scale; therefore, a factor analysis of the full scale was not needed. The condom use attitudes and intentions subscale questions were examined for unidimensionality and reliability.

Thirteen questions relating to condom use attitudes were factor analyzed using Principal Axis Factoring (see Table 8). Principal Axis Factoring was used because this analysis (a) considers common variance, (b) seeks the least number of factors that can account for the common variance of variables, (c) analyzes common factor variability, and (d) accounts for co-variation. Additionally, Principal Axis Factoring is most frequently used and was appropriate for the present study.
Table 8

*Factor Loadings for Condom Use Attitudes Subscale*

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is a hassle to use condoms.</td>
<td>.67</td>
</tr>
<tr>
<td>People can get the same pleasure from &quot;safer&quot; sex as from unprotected sex.</td>
<td>.42</td>
</tr>
<tr>
<td>Using condoms interrupts sex play.</td>
<td>.74</td>
</tr>
<tr>
<td>The proper use of a condom could enhance sexual pleasure.</td>
<td>.24</td>
</tr>
<tr>
<td>Condoms are irritating.</td>
<td>.68</td>
</tr>
<tr>
<td>I think &quot;safer&quot; sex would get boring fast.</td>
<td>.66</td>
</tr>
<tr>
<td>&quot;Safer&quot; sex reduces the mental pleasure of sex.</td>
<td>.67</td>
</tr>
<tr>
<td>The idea of using a condom doesn't appeal to me.</td>
<td>.74</td>
</tr>
<tr>
<td>Condoms ruin the natural sex act.</td>
<td>.73</td>
</tr>
<tr>
<td>Generally, I am in favor of using condoms.</td>
<td>.52</td>
</tr>
<tr>
<td>Condoms interfere with romance.</td>
<td>.84</td>
</tr>
<tr>
<td>The sensory aspects (smell, touch, etc.) of condoms make them unpleasant.</td>
<td>.47</td>
</tr>
<tr>
<td>With condoms, you can't really &quot;give yourself over&quot; to your partner.</td>
<td>.58</td>
</tr>
</tbody>
</table>

The factor analysis was given a fixed number of factors to extract (i.e., one) due to the subscale’s initial development being based on one construct (i.e., condom use attitudes). The analysis yielded one factor explaining a total of 39.8% of the variance for the entire set.
of variables. The condom use attitudes subscale had a reliability coefficient of .89. Seven questions relating to condom use intentions were factor analyzed using Principle Axis Factoring (see Table 9). The analysis yielded one factor explaining a total of 60.5% of the variance for the entire set of variables. The condom use intentions subscale had a reliability coefficient of .90. Overall, both subscales were found to have good reliability and were found to be fairly unidimensional.

Table 9

*Factor Loadings for Condom Use Intentions Subscale*

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>If I were going to have sex, I would take precautions to reduce my risk of HIV/AIDS.</td>
<td>.54</td>
</tr>
<tr>
<td>“Safer sex” is a habit for me.</td>
<td>.78</td>
</tr>
<tr>
<td>I intend to follow “safer sex” guidelines within the next year.</td>
<td>.88</td>
</tr>
<tr>
<td>If I were going to have sex in the next year, I would use condoms.</td>
<td>.86</td>
</tr>
<tr>
<td>I would avoid using condoms if at all possible.</td>
<td>.54</td>
</tr>
<tr>
<td>I am determined to practice “safer sex”.</td>
<td>.89</td>
</tr>
<tr>
<td>I would try to use a condom when I had sex.</td>
<td>.86</td>
</tr>
</tbody>
</table>

**Exploratory Analyses.** Exploratory analyses were conducted on the condom use variables. Analyses were conducted to determine whether attitudes about condom use, intentions to use condoms, and condom use self-efficacy differ depending on the ethnic
background and socioeconomic status (i.e., parental income) of participants. In order to explore these variables, three factorial analyses of variance (ANOVAS) were conducted; an ANOVA was conducted for each dependent variable (i.e., attitudes about condom use, intentions to use condoms, condom use self-efficacy). The independent variables were ethnic background (i.e., Caucasian \( [n = 128] \), African American \( [n = 28] \), Hispanic \( [n = 11] \), Asian American \( [n = 8] \), Biracial \( [n = 7] \), Other \( [n = 1] \)) and parental income (i.e., 100k and over \( [n = 48] \), 25-50k \( [n = 46] \), 50-75k \( [n = 31] \), 75-100k \( [n = 31] \), 0-25k \( [n = 26] \)) and the dependent variables were the condom use variables mentioned above. Analyses were conducted to determine whether the demographic variables (i.e., ethnicity, income) needed to be controlled in the primary analyses.

A 5 x 6 Factorial ANOVA was used to test for differences in condom use attitudes based upon parental income and ethnic background. The main effect for parental income was not significant \( (F(1, 172) = 3.33, p = .12) \). This indicated that condom use attitudes were similar across SES. Similarly, the main effect for ethnic background was not significant \( (F(1, 172) = 1.52, p = .19) \). This indicated that condom use attitudes were similar across ethnic background. Lastly, the interaction between parental income and ethnic background was not significant \( (F(1, 172) = 1.80, p = .07) \).

A 5 x 6 Factorial ANOVA was used to test for differences in condom use intentions based upon ethnic background and parental income. The main effect for parental income was not significant \( (F(1, 172) = .95, p = .44) \). This indicated that condom use intentions were similar across SES. Similarly, the main effect for ethnic background was not significant \( (F(1, 172) = .33, p = .89) \). This indicated that condom use intentions were similar across racial
background. Lastly, the interaction between parental income and ethnic background was not significant \( F(1, 172) = .45, p = .94 \).

A 5 x 6 Factorial ANOVA was used to test for differences in condom use self-efficacy based upon ethnic background and parental income. The main effect for parental income was not significant \( F(1, 172) = .75, p = .56 \). This indicated that condom use self-efficacy was similar across SES. Similarly, the main effect for ethnic background was not significant \( F(1, 172) = .65, p = .66 \). This indicated that condom use self-efficacy was similar across ethnic background. Lastly, the interaction between parental income and ethnic background was not significant \( F(1, 172) = .51, p = .91 \).

Due to the low n’s in the ethnicity groups, the exploratory analyses were re-run with ethnicity collapsed into 2 groups (i.e., Caucasian \( n = 128 \) and other ethnicities \( n = 54 \)). A One-Way Analysis of Variance was used to test for differences based upon ethnic background in condom use attitudes, condom use intentions, and condom use self-efficacy. Results were similar to the initial analyses, in that there was not a significant relationship between ethnic background and condom use attitudes \( F(1, 174) = 2.09, p = .15 \), condom use intentions \( F(1, 174) = .32, p = .57 \), and condom use-self-efficacy \( F(1, 165) = 3.12, p = .08 \). These findings indicated that condom use attitudes, condom use intentions and condom use self-efficacy were similar across ethnic background. Based upon the results of the exploratory analyses, parental household income and racial background were not controlled in the primary analyses.

**Primary Analyses.** Hypothesis 1 examined the effect of safe sex advertisements (i.e., rational appeal, negative emotional appeal, positive emotional appeal) and sex (i.e., men,
women) on participants’ attitudes towards condoms, intentions to use condoms, and condom use self-efficacy. Descriptive statistics are located in Table 10.

Table 10

Multivariate Analysis of Variance Statistics for the Condom Use Variables Based Upon Sex and Advertisement Group

<table>
<thead>
<tr>
<th>IV</th>
<th>N</th>
<th>DV</th>
<th>Mean</th>
<th>SE</th>
<th>$\eta^2$</th>
<th>Observed Power</th>
<th>99% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>130</td>
<td>Attitudes</td>
<td>46.92</td>
<td>.83</td>
<td>.12</td>
<td>.97</td>
<td>44.47 – 48.80</td>
</tr>
<tr>
<td></td>
<td>130</td>
<td>Intentions</td>
<td>29.24</td>
<td>.47</td>
<td>.04</td>
<td>.46</td>
<td>28.00 – 30.45</td>
</tr>
<tr>
<td></td>
<td>130</td>
<td>Self-Efficacy</td>
<td>112.30</td>
<td>1.49</td>
<td>.02</td>
<td>.16</td>
<td>108.13 – 115.80</td>
</tr>
<tr>
<td>Men</td>
<td>24</td>
<td>Attitudes</td>
<td>41.08</td>
<td>1.91</td>
<td></td>
<td></td>
<td>36.45 – 46.41</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>Intentions</td>
<td>28.75</td>
<td>1.10</td>
<td></td>
<td></td>
<td>26.06 – 31.72</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>Self-Efficacy</td>
<td>118.21</td>
<td>3.42</td>
<td></td>
<td></td>
<td>109.10 – 126.95</td>
</tr>
<tr>
<td>Advertisement</td>
<td></td>
<td></td>
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<tr>
<td>Rational</td>
<td>43</td>
<td>Attitudes</td>
<td>42.30</td>
<td>1.74</td>
<td>.06</td>
<td>.60</td>
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<td></td>
<td>43</td>
<td>Intentions</td>
<td>28.44</td>
<td>.99</td>
<td>.04</td>
<td>.34</td>
<td>24.80 – 29.96</td>
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<tr>
<td></td>
<td>43</td>
<td>Self-Efficacy</td>
<td>113.53</td>
<td>3.12</td>
<td>.02</td>
<td>.10</td>
<td>107.35 – 123.66</td>
</tr>
<tr>
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<td>61</td>
<td>Attitudes</td>
<td>47.97</td>
<td>1.76</td>
<td></td>
<td></td>
<td>42.53 – 51.74</td>
</tr>
<tr>
<td></td>
<td>61</td>
<td>Intentions</td>
<td>29.80</td>
<td>1.00</td>
<td></td>
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<td>28.23 – 33.46</td>
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<tr>
<td></td>
<td>61</td>
<td>Self-Efficacy</td>
<td>116.56</td>
<td>3.16</td>
<td></td>
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<td>110.09 – 126.59</td>
</tr>
<tr>
<td>Positive</td>
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<td>Attitudes</td>
<td>46.82</td>
<td>1.90</td>
<td></td>
<td></td>
<td>40.40 – 50.29</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>Intentions</td>
<td>29.00</td>
<td>1.08</td>
<td></td>
<td></td>
<td>26.13 – 31.75</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>Self-Efficacy</td>
<td>108.88</td>
<td>3.40</td>
<td></td>
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<td>102.34 – 120.07</td>
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</tbody>
</table>

Hypothesis 1 asserted that women who viewed the negative emotional advertisement will report more positive condom use attitudes, greater condom use intentions, and greater condom use self-efficacy than men who view the negative emotional advertisement and participants who view the positive emotional and rational advertisements. In order to test Hypothesis 1, a 3 x 2 between-subjects multivariate analysis of variance (MANOVA) was conducted. There was a significant main effect for sex ($\Lambda = .88, F = 6.71, p < .001, \eta^2 = .12, \text{Observed Power} = .97$). There was also a significant main effect for safe sex advertisements
(λ = .89, F = 2.81, p = .01, η² = .06, Observed Power = .88). The interaction between sex and safe sex advertisement was not significant (λ = .96, F = 1.14, p = .34, η² = .02, Observed Power = .45). To further examine the differences between sex, univariate follow-up procedures were conducted to determine differences in the individual dependent variables. The results indicated that there was a statistically significant difference in condom use attitudes (F = 6.25, p = .01, η² = .04, Observed Power = .70), with women (M = 46.92, SD = 9.51) reporting more positive condom use attitudes than men (M = 41.08, SD = 9.44). There was not a significant difference for sex with regard to condom use intentions (F = .08, p = .78, η² = .001, Observed Power = .06) or condom use self-efficacy (F = 1.20, p = .31, η² = .02, Observed Power = .36). To further examine the differences between the safe sex advertisements, univariate follow-up procedures were conducted to determine differences in the individual dependent variables. The results indicated that there was a statistically significant difference in condom use attitudes (F = 4.99, p = .008, η² = .06, Observed Power = .80), with those in the positive advertisement group (M = 46.82, SD = 8.53) and those in the negative advertisement group (M = 47.97, SD = 9.44) reporting more positive condom use attitudes than those in the rational advertisement group (M = 42.30, SD = 10.51). Additionally, the results indicated that there was a marginally significant difference in condom use intentions (F = 3.03, p = .052, η² = .04, Observed Power = .58), with those in the positive advertisement group and those in the negative advertisement group reporting slightly greater condom use intentions than those in the rational advertisement group. The partial eta squared statistic revealed a relatively low effect size, which means that the finding accounted for only 4% of the overall variance. Additionally, the observed power was .58, indicating a 42% chance of failing to detect an effect. This information suggests that it is
likely that a significant result exists; however, the test did not have enough power to detect it. There was not a significant difference for safe sex advertisement with regard to condom use self-efficacy ($F = 1.20, p = .31, \eta^2 = .02, \text{Observed Power} = .26$). Based upon the results of this analysis, hypothesis 1 was partially supported in that women reported more positive condom use attitudes than men and those in the positive advertisement group and the negative advertisement group reported more positive condom use attitudes than those in the rational advertisement group.

Hypothesis 2 examined the effect of the safe sex advertisements (i.e., rational appeal, negative emotional appeal, positive emotional appeal) and sex (i.e., men, women) on participants’ negative (i.e., fear, guilt, anger, sadness) and positive emotional responses (i.e., happiness, surprise). Hypothesis 2 asserted that women in the negative emotional advertisement group will report greater negative emotional responses than men in the negative emotional advertisement group and participants in the positive emotional and rational advertisement group. Additionally, the positive emotional advertisement group will be associated with greater positive emotional responses. In order to examine hypothesis two, a 3 x 2 between-subjects MANOVA was conducted. There was a significant main effect for sex ($\Lambda = .89, F = 3.35, p = .004, \eta^2 = .11, \text{Observed Power} = .93$), but there was not a significant main effect for safe sex advertisements ($\Lambda = .88, F = 1.71, p = .06, \eta^2 = .06, \text{Observed Power} = .86$). Additionally, the interaction between sex and safe sex advertisement was not significant ($\Lambda = .90, F = 1.44, p = .15, \eta^2 = .05, \text{Observed Power} = .78$). To further examine the differences between sex, univariate follow-up procedures were conducted to determine differences in the individual dependent variables. The results indicated that there was a statistically significant difference in hostility ($F = 5.58, p = .02, \eta^2 = .03, \text{Observed}$
Power = .65), surprise \((F = 5.40, p = .02, \eta^2 = .03, \text{Observed Power} = .64)\), and joviality \((F = 9.87, p = .002, \eta^2 = .06, \text{Observed Power} = .88)\), with men scoring higher than women on all of these emotional response variables. Based upon the results of this analysis, hypothesis 2 was not supported. Descriptive statistics are located in Table 11.

**Table 11**  
Multivariate Analysis of Variance Statistics for Negative and Positive Emotions Based Upon Sex and Advertisement Group

<table>
<thead>
<tr>
<th>IV</th>
<th>N</th>
<th>DV</th>
<th>Mean</th>
<th>SE</th>
<th>(\eta^2)</th>
<th>Observed Power</th>
<th>99% Confidence Interval</th>
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<td>Sex</td>
<td></td>
<td>Fear</td>
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<td>.29</td>
<td>.001</td>
<td>.01</td>
<td>7.96 – 9.47</td>
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<td></td>
<td></td>
<td>Sadness</td>
<td>7.00</td>
<td>.21</td>
<td>.002</td>
<td>.02</td>
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<tr>
<td></td>
<td></td>
<td>Guilt</td>
<td>7.81</td>
<td>.28</td>
<td>.01</td>
<td>.05</td>
<td>7.06 – 8.53</td>
</tr>
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<td>Hostility</td>
<td>7.13</td>
<td>.20</td>
<td>.03</td>
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<td></td>
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<td>.03</td>
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<td>4.31 – 5.29</td>
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<tr>
<td></td>
<td></td>
<td>Joviality</td>
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<td>.06</td>
<td>.70</td>
<td>10.26 – 12.90</td>
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<tr>
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<td>.29</td>
<td>.001</td>
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<td>7.96 – 9.47</td>
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<tr>
<td></td>
<td>144</td>
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<td>7.00</td>
<td>.21</td>
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<td>6.43 – 7.54</td>
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<td>.05</td>
<td>7.06 – 8.53</td>
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<td>4.81</td>
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<td>4.31 – 5.29</td>
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<td>12.53 – 18.51</td>
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<td></td>
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<td>6.54 – 9.98</td>
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<td>Fear</td>
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<td>.01</td>
<td>.07</td>
<td>7.24 – 10.31</td>
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<td>Sadness</td>
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<td>.04</td>
<td>.35</td>
<td>6.06 – 8.31</td>
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<td>.57</td>
<td>.01</td>
<td>.06</td>
<td>7.09 – 9.44</td>
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<td>51</td>
<td>Hostility</td>
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<td>.03</td>
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<td>6.56 – 9.55</td>
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<tr>
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<td>Surprise</td>
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<td>.38</td>
<td>.05</td>
<td>.46</td>
<td>3.45 – 5.45</td>
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<td>.12</td>
<td>9.54 – 14.88</td>
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<td>Fear</td>
<td>9.21</td>
<td>.62</td>
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<td>.61</td>
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<td>1.08</td>
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<td>.48</td>
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<td>5.94 – 9.28</td>
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<td>7.12</td>
<td>.45</td>
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<td></td>
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<td>13.29</td>
<td>1.15</td>
<td></td>
<td></td>
<td>11.76 – 17.73</td>
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</table>
Hypothesis 3 through 5 examined whether greater negative and positive emotional responses (i.e., fear, guilt, anger, sadness, happiness, surprise) were predictive of more positive condom use attitudes, greater condom use intentions, and greater condom use self-efficacy, respectively. In order to test hypotheses 3 through 5, a multivariate multiple regression analysis was conducted (See Table 12).

Table 12

*Multivariate Multiple Regression Analyses Predicting Condom Use Attitudes, Condom Use Intentions, and Condom Use Self-Efficacy*

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>t</th>
<th>β</th>
<th>B</th>
<th>SE</th>
<th>t</th>
<th>β</th>
<th>B</th>
<th>SE</th>
<th>t</th>
<th>β</th>
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<tbody>
<tr>
<td>Fear</td>
<td>.32</td>
<td>.34</td>
<td>.93</td>
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<td>.23</td>
<td>.19</td>
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<tr>
<td>Sadness</td>
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<td>.73</td>
<td>.08</td>
<td>.36</td>
<td>.24</td>
<td>1.49</td>
<td>.16</td>
<td>-.53</td>
<td>.75</td>
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</tr>
<tr>
<td>Guilt</td>
<td>-1.04</td>
<td>.31</td>
<td>-3.32**</td>
<td>-3.4</td>
<td>-.39</td>
<td>.18</td>
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<td>-.24</td>
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<td>.56</td>
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<tr>
<td>Hostility</td>
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<td>-1.37</td>
<td>-.16</td>
<td>-.38</td>
<td>.29</td>
<td>-1.29</td>
<td>-.15</td>
<td>-1.66</td>
<td>.92</td>
<td>-1.82</td>
<td>-.21</td>
</tr>
<tr>
<td>Surprise</td>
<td>.35</td>
<td>.07</td>
<td>.21</td>
<td>.02</td>
<td>.05</td>
<td>.20</td>
<td>.26</td>
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<td>.58</td>
<td>.05</td>
<td>-.01</td>
<td>.07</td>
<td>-.08</td>
<td>-.01</td>
<td>.42</td>
<td>.22</td>
<td>1.91</td>
<td>.16</td>
</tr>
</tbody>
</table>

\(R^2\) | .13  |     |      | .06  |     |      | .08  |
F       | 3.68**| 1.52| 1.96 |

Note. *p < .05. **p < .01.

The overall model was significant (\(\Lambda = .78, F = 2.07, p = .007\)), indicating that the linear combination of the negative and positive emotional responses was significantly related to the linear combination of condom use attitudes, condom use intentions and condom use...
self-efficacy. Further examination of results indicated that the linear combination of the negative and positive emotional responses were only significantly related to condom use attitudes \((F[6,14] = 3.68, p = .002)\). The multiple correlation coefficient was .36, indicating that approximately 13\% of the variance in condom use attitudes can be accounted for by the linear combination of negative and positive emotional responses. Of the emotional response variables, the negative emotion of guilt was found to be significantly related to condom use attitudes \((F(1,154) = 11.04, p = .001)\), such that reported feelings of guilt was related to more positive condom use attitudes. The remaining emotion response variables were not significantly related to condom use attitudes; therefore, hypothesis three was partially supported.

Regarding hypotheses four and five, results indicated that the linear combination of the negative and positive emotional response variables were not significantly related to condom use intentions \((F(6,145) = 1.52, p = .18)\) or condom use self-efficacy \((F(6,145) = 1.96, p = .08)\); therefore, these hypotheses were not supported.

Several analyses (i.e., preliminary, exploratory, primary) were conducted in the present study and this increases the chances of making a Type I error. Based upon this notion, the study analyses were re-run using a Bonferroni Correction to correct for Type I error using an alpha level of .01. These analyses were compared to the analyses conducted without the correction. The corrected analyses resulted in similar findings (i.e., partial support for hypotheses 1 and 3).
CHAPTER 5

DISCUSSION

Inconsistency in the sexual risk prevention literature indicated that there was a need for additional research identifying factors that will increase safe sex behaviors particularly, condom use, in young adults. The present study attempted to expand the sexual risk prevention literature by examining the impact of different safe sex messages and emotions on the condom use of young adults. Specifically, the purpose of the present study was to examine the impact of different safe sex message appeals/advertisements and biological sex on the condom use attitudes, condom use intentions, condom use self-efficacy, negative and positive emotional responses of young adults as well as explore the influence of negative and positive emotional responses on the condom use attitudes, condom use intentions, and condom use self-efficacy of young adults.

MANOVA and regression analyses were conducted to examine the study hypotheses. The first hypothesis stated that women who viewed the negative emotional advertisement would report more positive condom use attitudes, greater condom use intentions, and greater condom use self-efficacy than men who viewed the negative emotional advertisement and participants who viewed the positive emotional and rational advertisements. Previous literature indicated that women generally tend to report more positive attitudes and intentions as it pertains to condom use (Lewis et al., 2009; Sacco et al., 1991). The present finding was consistent with previous literature in that women reported more positive condom use attitudes than men participants; however, the present findings were not consistent with previous literature as it pertained to differences in condom use intentions and condom use self-efficacy. Additionally, though previous literature is limited, negative emotion
appeals/advertisements were generally found to be persuasive and related to attitude/behavior change (Crano & Prislin, 2006; Green & Witte, 2006; Lee & Davie, 1997; Marchand & Filiatrault, 2002; Nabi, 2002; Struckman-Johnson & Struckman-Johnson, 1996; Struckman-Johnson et al., 1994). Previous literature was inconsistent with regard to the message appeal that was most effective in eliciting attitude/behavior change. Some literature reported rational appeals were more effective whereas some literature reported negative appeals were more effective. The present findings are consistent with the literature that reported that negative appeals were more effective. Specifically, the present finding was consistent with previous literature in that the negative emotional advertisement was related to more positive condom use attitudes and marginally related to greater condom use intentions. The combination of participants’ sex and the safe sex advertisement viewed by the participant did not appear to have a collective impact on condom use attitudes, condom use intentions and condom use self-efficacy; therefore, the first hypothesis was partially supported.

Results indicated that only condom use attitudes were significantly affected by biological sex and safe sex advertisement. Specifically, the finding that women and those in the negative emotional advertisement group and positive emotional advertisement group reported more positive condom use attitudes is consistent with previous literature (Lee & Davie, 1997; Marchand & Filiatrault, 2002; Struckman-Johnson & Struckman-Johnson, 1996; Struckman-Johnson et al., 1994). With regard to condom use intentions and condom use self-efficacy; however, no significant relationships were found thus making the hypothesis partially supported. A plausible explanation for this nonsignificant finding could be attributed to the possible ineffectiveness of the safe sex advertisements in inducing a strong emotional response of participants, thus reducing the likelihood of affecting
participants’ condom use intentions and condom use self-efficacy. The study advertisements may have been effective in influencing participants’ attitudes; however, more intense emotional responses (induced by the advertisements) may be needed to influence participants’ condom use intentions and self-efficacy. Attitudes are more easily influenced by persuasion techniques (e.g., message appeals) (Smith & Mackie, 2007) whereas self-efficacy and intentions are influenced by a number of other factors (e.g., past performance, subjective norms) (Ajzen & Fishbein, 1980, Bandura, 1977); therefore, more intense factors may be needed to influence these variables.

Hypothesis two stated that women participants in the negative emotional advertisement group will report greater negative emotional responses than men participants in the negative emotional advertisement group, participants in the positive emotional group and participants in the rational advertisement group and that the positive emotional advertisement group will be associated with greater positive emotional responses. Similar to hypothesis one, this hypothesis was not supported as there was not a significant main effect of safe sex advertisement; which indicated that the safe sex advertisement viewed by participants did not appear to have an impact on participants’ positive and negative emotional responses to the safe sex advertisements. Regardless of the safe sex advertisement viewed, participants reported similar positive and negative emotional responses. Given that participants perceived the advertisements differently, it is surprising that the advertisements did not elicit significantly different emotional responses among participants.

Previous literature indicated that emotional message appeals, directed towards an individual’s feelings, induce negative and/or positive emotions and make messages attention-getting and memorable (Camm, 2005, Vega & Ghanem, 2007). It is the message’s impact on
one’s emotions that contributes to attitude and, ultimately, behavior change (Perloff, 2001). From this perspective, the lack of support for hypothesis two could be attributed to the possible ineffectiveness of the safe sex advertisements in inducing an intense emotional response from participants. When examining Table 5, the emotional response means of study participants are relatively low. For instance, the Fear variable mean was 8.87, which is fairly low when considering the range for this variable (i.e., 6 – 36). This was consistent with all of the emotion variables (see Table 5) indicating that, in general, participants did not report intense emotional responses to the safe sex advertisements. It is possible that different results (i.e., supported hypothesis) would have been achieved with advertisements that elicited stronger emotional responses of participants. Though the pilot study analyses and the main study analyses indicated that study participants perceived the safe sex advertisements to be different, low emotion response scores indicated that the safe sex advertisements may not have been perceived as emotional and/or persuasive.

Hypothesis three stated that greater negative and positive emotional responses (i.e., fear, guilt, anger, sadness, happiness, surprise) were predictive of more positive condom use attitudes. This hypothesis was not fully supported because, upon further examination, only guilt was significantly related to condom use attitudes whereas the other emotional responses were unrelated to condom use attitudes. This finding indicated that participants’ emotional responses to the safe sex advertisements had a limited impact on their condom use attitudes.

Eliciting guilt has frequently been cited for its influence on attitude and behavior change (Dillard & Peck, 2000; Nabi, 2002); therefore, the relationship between guilt and condom use attitudes is not surprising. It may be likely that guilt has more of an influence on condom use attitudes than other emotions. It is also likely that the other study emotions were
not elicited by the safe sex advertisements; therefore, their influence on condom use attitudes continues to be unclear. The current study does not shed much light on either of the aforementioned statements; therefore, further research is needed to clarify these relationships. Particularly surprising is the non significant relationships between condom use attitudes and the negative emotions (i.e., fear, anger, and sadness). Previous literature has indicated that eliciting negative emotions, fear in particular, is related to attitude and behavior change (Dillard & Peck, 2000). Fear is the most empirically examined emotion and was found to be positively correlated with both attitude and behavior change (Das et al., 2003; Lennon & Rentfro, 2010; Nabi, 2002). It is likely that the negative emotions (i.e., fear, anger, and sadness) were not elicited or not elicited strongly enough to influence participants’ attitudes about condoms. As mentioned in the literature review, there is limited information regarding the influence of positive emotions (i.e., happiness and surprise) on attitudes and behaviors. The lack of a significant relationship between the positive emotions and condom use attitudes could be attributed to the ineffectiveness of the positive emotional safe sex advertisement in eliciting the positive emotions of participants or this finding could indicate that positive emotions have limited/no impact on condom use attitudes and behaviors. Continued research will be needed to ascertain the impact of positive emotions.

Hypotheses four and five asserted that greater negative and positive emotional responses would be predictive of greater condom use intentions and greater condom use self-efficacy, respectively. These hypotheses were not supported by the study results, as there was no relationship between the emotional responses and condom use intentions and condom use self-efficacy. These findings indicate that participants’ emotional responses to the safe sex
advertisements did not have a significant impact on their condom use intentions or on their condom use self-efficacy.

The effectiveness/persuasiveness of the safe sex advertisements likely contributed to the non-significant findings and unsupported hypotheses of the present study. The effectiveness/persuasiveness of the safe sex advertisements may be attributed to the medium used for the advertisements (e.g., print). Using print format for the advertisements may not have been as effective and emotionally charged as anticipated. The use of print advertisements may have contributed to participants reporting minimal emotional responses to the advertisements, as reflected by the low mean scores on each emotional variable as shown in Table 5. Based upon previous literature, significant relationships between the safe sex advertisements, condom use variables, and emotional responses were anticipated. Significant relations were anticipated because message appeals/advertisements have been found to induce negative and/or positive emotions (Camm, 2005), have generally been perceived as effective (Devos-Comby & Salovey, 2002; Lee & Davie, 1997), and have been found to elicit attitude or behavior change (Crano & Prislin, 2006; Green & Witte, 2006; Nabi, 2002). It should be noted, that in previous literature, various formats were used for the message appeals/advertisements (e.g., video format, combination of print and video format, video format with spokesperson). For instance, Dillard et al. (1996) investigated the influential role of emotion on message persuasiveness using video PSA format. The purpose of the study was to determine whether HIV/STD fear appeal public service announcements (PSAs) evoked emotional responses; predicted message persuasiveness; and influenced emotion’s effect on message persuasiveness. The participants of Dillard’s study viewed videotapes of five or six negative emotional appeals and completed information on their
affective responses and persuasiveness of each message. Among the results of the study was the finding that several emotions were elicited (i.e., fear, surprise, sadness, puzzlement, anger) and these emotions related to the persuasiveness of the message.

It is likely that the significant results found in the previous literature could be partially attributed to the use of message appeal/advertisement formats that were more effective. The persuasiveness of the original safe sex advertisements was assessed during the expert review phase and the pilot study phase; however, the persuasiveness of the modified versions of the safe sex advertisements was not assessed for use in the main study. As study results indicated, the safe sex advertisements were perceived as different from one another in terms of arousing negative emotion and arousing positive emotion; however, there is limited awareness of the persuasiveness of the advertisements. Future research would benefit from more directly assessing the persuasiveness of the advertisements, in an effort to determine its impact on the emotional responses reported by participants. For instance, the persuasiveness of the advertisement could be assessed with a Likert scale measure, examined for its relationship to emotional responses, and/or used as a co-variate in study analyses in an effort to determine its impact on participants’ emotional responses and other study variables.

Additionally, future research would benefit from assessing the difference between different formats of advertisements (e.g., video format, audio format to determine whether different formats impact participants’ emotional responses. With different advertisement mediums, participants’ responses may have been more intense (i.e., more reported experience of the emotion) and/or more likely to influence condom use attitudes, intentions, and self-efficacy. For example, Tuong, Larsen and Armstrong (2012) conducted a systematic review examining the effectiveness of videos in modifying health behaviors (e.g., HIV testing,
condom use, prostate cancer screening). Tuong et al.’s study used twenty eight studies in the systematic review. Results of the review indicated that video interventions were effective in modifying health behaviors of breast self-examination, prostate cancer screening, sunscreen adherence, self-care in patients with heart failure, HIV testing, treatment adherence, and women’s condom use (Tuong et al., 2012). Tuong et al.’s study indicated that the use of video interventions tend to be effective, in general, in eliciting attitude and behavior change.

In another example, Blas et al. (2010) compared the effect of two different mediums. Blas et al. (2010) examined the effect of HIV-testing motivational videos versus HIV health text on intention to get tested for HIV and the likelihood of HIV testing at the study clinic for Men Who Have Sex with Men (MSM). Results of Blas et al.’s study indicated that participants in the video-based intervention group were more likely to report intentions of getting tested for HIV within the next 30 days and were more likely to go to a clinic for testing than participants in the text-based intervention group (Blas et al., 2010). In Blas et al.’s study, findings seemed to indicate that not only do video advertisements appear effective, but these advertisements appear more effective than print advertisements.

Lastly, Armstrong, Idriss, and Kim (2011) assessed the effect of different mediums on patient comprehension and adherence to sunscreen use. In Armstrong et al.’s study, participants were given either video-based education or pamphlet-based education that described the importance and proper use of sunscreen. The results of Armstrong et al.’s study indicated that participants in the video-based education group reported significantly greater improvement in sunscreen knowledge and greater sunscreen adherence than participants in the pamphlet-based education group (Armstrong et al., 2011). Similar to Blas et al.’s (2010)
study, Armstrong et al.’s (2011) study indicates that video advertisements appear more effective than print advertisements.

The aforementioned studies indicated that the use of a video advertisement medium was more effective than the print advertisement medium in eliciting the desired attitude or behavior. These studies provide evidence that the medium of an advertisement is important in eliciting certain responses in participants (e.g., intention to get tested, women’s condom use). Future research should focus on using a different medium and/or comparing different mediums; in an effort to determine which is most effective in influencing condom use attitudes, intentions and self-efficacy.

While the present study hypotheses were not fully supported, an important finding emerged. Specifically, the safe sex advertisements were found to be significantly different from one another in important ways and these findings were confirmed in both the pilot and main study analyses of the present study. Analyses were conducted to test for the perception differences among the three safe sex advertisements; specifically, to determine whether the advertisements differed with regard to perceptions of the advertisements as being a rational message, negatively emotionally arousing message, or a positive health promoting message. The safe sex advertisements did not differ in terms of participants’ perceptions of the advertisements conveying rational and practical information. From this perspective, all of the advertisements were viewed as practical and informative. This finding was not surprising; particularly, because all of the safe sex advertisements provided information that was informative (e.g., STD statistics, information regarding prevention, information regarding using a condom). Though the advertisements did not differ in terms of perceptions of the advertisements being practical and rational, the advertisements significantly differed in terms
of the other perceptions in the expected directions. The negative emotional advertisement was found to be significantly different than both the rational advertisement and the positive emotional advertisement. In the present study, participants perceived the negative emotional advertisement as more fear-inducing and negatively emotionally arousing than both the rational advertisement and the positive emotional advertisement. In other words, participants perceived this advertisement as negative and associated this advertisement with negative emotions. The positive emotional advertisement was found to be significantly different than both the rational advertisement and the negative emotional advertisement. In particular, the positive emotional advertisement was perceived as more emotionally positive than both the rational advertisement and the negative emotional advertisement. Overall, these findings provided evidence that the advertisements of the current study were effective in portraying different information.

Another relevant finding was that women reported more positive condom use attitudes than men in this study. This finding is consistent with the literature that asserts that women tend to have more positive condom use attitudes than men (Lewis et al., 2009; Sacco et al., 1993). The present study provided more evidence for this sex difference to add to the existing risk prevention literature. Additionally, the present study found that participants in the negative emotional and positive emotional advertisement groups reported more positive condom use attitudes and slightly greater condom use intentions than participants in the rational advertisements group. Similar to the sex differences reported above, this finding is consistent with previous literature that found rational message appeals or advertisements to be least persuasive as compared to other appeals/advertisements (Lee & Davie, 1997; Struckman-Johnson & Struckman-Johnson, 1996). As it pertains to condom use attitudes and
condom use intentions, the present study indicated that the rational advertisement was found to be least persuasive. As it pertains to condom use self-efficacy, however, the study finding is consistent with previous literature that asserts that there is no difference in the persuasiveness or effectiveness among message appeals/advertisements (O’Keefe & Jensen, 2007).

Another interesting result of the current study was the finding that men participants reported greater feelings of hostility, surprise, and joviality than women participants. Research examining emotional responses as it relates to sexual risk prevention messages and/or safe sex messages is limited (Nabi, 2002) and although emotions have been theorized to impact attitudes and behaviors (Das et al., 2003; Dillard & Meijnders, 2002; Dillard & Peck, 2000; Lennon & Rentfro, 2010; Nabi, 2002), this was not illustrated in the present study. With regard to sex differences in emotional responses to the safe sex advertisements, the finding that men participants of the study reported higher responses on the emotional variables of hostility, surprise, and joviality as compared to the women participants could indicate the men participants responded more strongly to the safe sex advertisements than women participants. Despite this sex difference in emotional responses, there was limited impact on the condom use variables. It could be likely that men and women respond differently to sexual risk messages in general; however, this may not translate to differences in safe sex behaviors (e.g., condom use).

Lastly, the negative and positive emotional responses were collectively predictive of more positive condom use attitudes. This finding is particularly interesting because guilt was the only emotion found to be predictive of condom use attitudes. Previous literature indicated that negative emotions (e.g., fear), have been positively correlated with attitude and behavior
change (Das et al., 2003; Lennon & Rentfro, 2010; Nabi, 2002). Though guilt has been found to influence attitudes/behaviors (Dillard & Peck, 2000; Nabi, 2002), the expectation would have been that all of the negative emotions would have been related to condom use attitudes. This finding indicates that guilt may be an important emotion to target for sexual risk prevention. Negative emotional advertisements can typically elicit several emotions, in particular guilt (Dillard & Peck, 2000; Dillard et al., 1996). Focusing the development of future advertisements on targeting the emotion of guilt may be important in sexual risk prevention literature.

It may be important to discuss the present findings in relation to The AIDS Risk Reduction Model (ARRM) theory. The ARRM asserts that in order to change sexual behaviors and avoid HIV infection, individuals engaging in high sexual risk behaviors must perceive that their sexual behaviors are problematic and place them at risk for HIV infection and make a strong commitment to changing one’s behaviors (Catania et al., 1990). The present study attempted to examine factors related to one’s commitment to change their behavior (i.e., condom use intentions) by examining condom use attitudes and condom use self-efficacy as well as other internal (i.e., emotional responses, sex) and external factors (e.g., safe sex message appeals/advertisements) related to one’s commitment to change their behavior. These factors influence one’s progression through the stages of the model (Catania et al., 1990). The current findings suggest that biological sex may be an internal factor that influences one’s commitment to change and progress through the stages of the ARRM. Women were found to have more positive condom use attitudes, which the ARRM theorizes can influence one’s commitment to change a behavior. Additionally, the emotion of guilt may be an internal factor that influences one’s commitment to change. Similar to participants’
sex, guilt was found to be related to more positive condom use attitudes which are theorized to influence one’s commitment to change or engage in a desired behavior (i.e., condom use). Unfortunately, the current study did not provide support for the influence of external factors (i.e., safe sex advertisements) on one’s commitment to change. There was also limited support found for the influence of condom use self-efficacy and condom use intentions. Hopefully, future research will assist in providing further evidence for the influence of these factors.

**Summary of Findings**

The present study examined the impact of different safe sex message appeals and sex on the condom use attitudes, condom use intentions, condom use self-efficacy, negative and positive emotional responses of young adults and explored the influence of negative and positive emotional responses on the condom use attitudes, condom use intentions, and condom use self-efficacy of young adults. Multivariate analyses of variance and a multivariate regression analysis were used to examine the hypothesized relationships. None of the study hypotheses were fully supported; however, other significant findings emerged that were consistent with previous literature. First, the safe sex advertisements of the study were perceived as different from one another. Second, women reported more positive condom use attitudes than men participants. Third, participants who viewed the negative emotional and positive emotional advertisements reported more positive condom use attitudes than those who viewed the rational advertisement. Fourth, guilt was the only emotion found to be related to condom use attitudes. Last, men participants reported higher emotional responses of hostility, surprise, and joviality; suggesting that there may be a tendency for men and women to respond differently to advertisements.
The current findings point to the importance of continued examination of these factors as well as other factors that may influence condom use in young adults. Young adults continue to engage in sexual risk behavior (Centers for Disease Control and Prevention, 2009; Centers for Disease Control and Prevention, 2005; Lewis et al., 2009; Marston & King, 2006; Opt & Loffredo, 2004); therefore, there remains a need for continued exploration. The present findings highlight the importance of safe sex messages and emotional responses on condom use variables; particularly, condom use attitudes. In particular, the present study was able to identify that the variables of biological sex, guilt and negative and positive emotional safe sex advertisements were all positively related to condom use attitudes.

**Limitations and Future Research**

The findings of the present study must be examined in light of methodological limitations. First, the safe sex advertisements need to be considered. Although the advertisements were found to be significantly different from one another, the persuasiveness/intensity of these advertisements may have been problematic to the current study. It is likely that using a different medium for the safe sex advertisements (e.g., video format) would have contributed to more intense emotional responses (i.e., higher reported experiences of the emotion), which may have had an influence on the condom use variables in the study (i.e., a significant relationship with emotional variables). Future research is needed using a different format for the safe sex advertisements, in an effort to determine if differences appear in the emotional responses reported by participants. Additionally, future research would benefit from more directly assessing the persuasiveness of different advertisement formats and relating it to the emotional responses reported by participants; in an effort to determine if different formats of advertisements make a difference in the
participants’ emotional responses to the advertisements. Second, the unequal cell sizes were a limitation of the current study; particularly, with the biological sex variable. The sample of participants was highly represented by women. No specific effort was made to recruit men; however, all undergraduate classes/departments were solicited for participation in the present study. Professors that responded to the solicitation were generally from Psychology, Sociology, and Nursing courses; which tend to have larger female populations. It may have been likely that more sex differences may have emerged if the sample was more equally distributed. This poses a threat to the internal validity of the study; particularly, in terms of confidence in the results about the sex differences in the present study. Future research may focus on recruiting an equal number of men and women participants, if possible and/or make special effort in the recruitment of men. Another limitation of the present study pertains to the statistical conclusion validity of the study; particularly, because of the violations of the normality assumptions by the emotional response variables as well as low statistical power with these variables. Due to the non-normality of these variables, the results of the analysis may be incorrect and/or misleading. Additionally, due to low statistical power, there may have been difficulty detecting significant results. This information suggests that the study findings may not be as reliable as anticipated. Due to these concerns, it reduces the confidence that can be placed in the results of the study. Future research will need to focus on possibly using different measures of emotional responses or possibly measuring emotional responses in a different manner than the present study. The fourth limitation is a possible threat to external validity. The study participants may represent a specific subgroup of young adults (e.g., women college students, Caucasian college students) that may be more informed of the risks associated with unprotected sex, thereby less influenced by the safe sex
advertisements of the study. Thus, this sample might not be representative of all young adults between the ages of 18 to 25. Additionally, the study sample was fairly homogeneous. In particular, the sample consisted of majority Caucasian women participants and was, therefore, not representative of more diverse young adults and men; who may be more likely to engage in sexual risk behaviors (Lewis et al., 2009). The distribution of the study sample consisted of majority woman and this may be attributed to the classes that tended to respond to the study solicitations. The majority of the study participants were from health-related fields (e.g., nursing, sociology, psychology); which tend to be represented by women and thereby explains the large representation of women in this study. As mentioned above, the study participants appear to represent a specific subgroup of young adults. Future research should include a more diverse sample of young adults as well as more effort to include individuals that are currently not enrolled in a university. The fifth limitation is that of sample size. The current sample size of 203 is considered adequate according to the criteria established by Tabachnick and Fidell (2001), who recommend 20 participants for each cell in a MANOVA and $N = 50 + 8m$ for regression analyses. The cell sizes in the 2 x 3 analyses were all over 20; however, the cell sizes were unequal on the variable sex (Women = 154, Men = 29). A larger sample size and more equal cell sizes may have provided more statistical power for the study analyses and limited threats to internal validity.

**Implications**

Despite the aforementioned limitations, the present study represents one of few investigations on the influence of different safe sex messages and emotional responses on condom use attitudes, condom use intentions, and condom use self-efficacy. The present study; particularly, the significant relationships between condom use attitudes and guilt and
condom use attitudes and rational safe sex advertisements, has important implications for those working with adolescent and young adults as well as implications for the development of interventions.

The finding that condom use attitudes are related to feelings of guilt and rational safe sex advertisements has important implications for future research; particularly, continued examination of the impact of safe sex messages. As mentioned previously, future research should be geared towards examining the impact of different formats of safe sex messages and determining their impact on various emotional responses and condom use variables. Future studies could continue to confirm the finding that rational advertisements are related to less favorable condom use attitudes and/or explore whether the format of the advertisement has more of an impact on this finding. Additional research could also focus on examining more diverse populations of adolescents and young adults; in an effort to fully examine sex and ethnic differences on safe sex message appeals/advertisements, emotional responses and condom use. The findings of the present study have important implications for the development of interventions. Many STD/HIV interventions have been developed to increase engagement in safe sex behaviors among adolescents and young adults. However, these interventions have resulted in discrepancies regarding the effectiveness of the HIV/STD prevention interventions in eliciting sexual behavior changes (e.g., increased condom use) and reducing sexual risk behaviors (Kirby et al., 2007). It may be more advantageous for interventions to focus on safe sex messages that are not simply rational and informative; however, those that elicit strong emotional responses either negative or positive. Many interventions have focused on providing information and educational material (e.g., classes, workshops) exclusively (Kirby et al., 2007). With regard to negative emotional responses,
eliciting guilt may be more effective in shifting the attitudes of adolescents and young adults. Effort could be placed on implementing other material (e.g., videos, speakers) that focuses on eliciting guilt and other negative emotions. For instance, having at-risk youth and young adults participate in a seminar that includes speakers discussing the negative consequences of sexual risk behavior (e.g., a speaker infected with HIV/AIDS) may be helpful in eliciting feelings of guilt as well as other negative emotions that may contribute to attitude and behavior change.

With regard to theoretical implications, the present study may have implications for the Aids Risk Reduction Model (AARM) theory. The ARRM focuses on the perception of sexual behaviors as problematic and risky as well as the commitment to changing one’s behaviors (Catania et al., 1990). The present study examined factors related to one’s commitment to change their behavior by examining condom use attitudes, condom use intentions, condom use self-efficacy, and internal (i.e., emotional responses, sex) and external factors (e.g., safe sex message appeals/advertisements) related to one’s commitment to change their behavior. The current findings suggest that biological sex and guilt may be internal factors that influence young adults’ commitment to change and progress through the stages of the ARRM. Future research should continue exploring the internal factors of guilt and sex, to confirm the findings of the current study; particularly with more diverse populations. Additionally, the continued exploration of external factors such as safe sex message appeals/advertisements will determine if this is an important factor to be considered for this theory; particularly, because the present study found limited support for these factors.

Lastly, the present findings suggest that it may be important for mental health providers and/or educators to tap into adolescents’ and young adults’ emotional responses to
when addressing sexual risk behavior. Counselors and educators in mainstream schools, treatment programs, and communities that have not considered the importance of emotional responses to safe sex messages on condom use may find it useful to create interventions specifically targeted at eliciting emotions such as guilt. For example, counseling with an at-risk individual may focus on identifying the underlying emotions that contribute to one’s sexual risk behavior rather than exclusively providing education (e.g., pamphlets, brochures) when addressing sexual risk behavior. It will be important for counselors to identify (a) if the at-risk individual is experiencing guilt about their current sexual behavior, (b) if the at-risk individual experiences guilt before, during, and/or after engaging in sexual acts, (c) how this feeling of guilt impacts their current decision-making process; particularly as it pertains to the decision to use condoms, and (d) how their guilt will affect future decisions pertaining to condom use. It will be essential for counselors to link an at-risk youth’s feelings of guilt to both present and future decision-making, in an effort to influence safe sex decision-making.

Perhaps one of the key preventative steps in addressing sexual risk behaviors is individual intervention (e.g., individual therapy/counseling) and classroom interventions (e.g., school). Individual interventions may be important because people may feel more comfortable discussing their emotions, attitudes, and behaviors in an individual setting, in an effort to maintain privacy. Classroom interventions via schools may be important because this may provide a safe and consistent environment to discuss sexual risk issues among adolescents and young adults.
APPENDIX A

DIRECTIONS AT THE BEGINNING OF THE ONLINE SURVEY
This is an on-line survey investigating your thoughts and feelings about safe sex advertisements and condom use. The purpose of this study is to gain an understanding of your perceptions about safe sex. You will be viewing a safe sex advertisement, providing feedback on your thoughts and feelings about the advertisement, and answering questions about condom use. Participation in this study will take approximately 10 to 15 minutes; however, you are free to discontinue participation at any time, by exiting the survey website. Please thoroughly read the safe sex advertisement. After you finish reading the advertisement, complete the questions. Please provide your honest thoughts and feelings when completing the questions. Thank you.
APPENDIX B

ORIGINAL RATIONAL SAFE SEX ADVERTISEMENT
Each year, there are approximately 19 million new HIV infections. Approximately half of all infections are among individuals aged 15 to 24, although they represent only 25% of the sexually active population.

People have dreamed up a million ways that you can get HIV/AIDS and other STDs, but there are really only a few. You can get HIV/AIDS by sharing needles with an infected person or having unprotected sex with an infected person. AIDS is a killer disease. There is no vaccine, there is no cure. There is no such thing as perfectly safe sex, but there is safer sex. If you need to worry about AIDS, do something about it.

Let’s be frank, if you don’t practice abstinence, practice safe sex. Use only latex condoms and wear the condom from start to finish. Put the condom on before you have any genital contact. Right after ejaculation, hold the condom tight and withdraw. If you do all of these things, condoms can be pretty effective.
APPENDIX C

ORIGINAL NEGATIVE EMOTIONAL SAFE SEX ADVERTISEMENT
Each year, there are approximately 19 million new HIV infections. Approximately half of all infections are among individuals aged 15 to 24, although they represent only 25% of the sexually active population.

Sure you enjoy sex, but don’t be willing to die for it. Sex with a person infected with HIV, the virus that causes AIDS, is a death sentence. There is a good chance you know someone with HIV. People with HIV can look as healthy as anyone else. You can’t tell if someone has the virus just by looking at them. In fact, the person you are going to be with tonight might have HIV. If you have sex without a condom, tonight might be the first night of the end of your life. AIDS is a killer disease.

There is no vaccine, there is no cure. AIDS isn’t just a gay disease, it’s everyone’s disease and everyone who gets it dies. Talk with your partner about AIDS.
APPENDIX D

ORIGINAL POSITIVE EMOTIONAL SAFE SEX ADVERTISEMENT
Each year, there are approximately 19 million new HIV infections. Approximately half of all infections are among individuals aged 15 to 24, although they represent only 25% of the sexually active population.

HIV/AIDS and other STDs can be transmitted by having unprotected sex with an infected person. However, this can be avoided by engaging in safer sex activities with your partner. Brainstorming “safer sex” activities (e.g., masturbation, sexual touch, fantasy, etc.) with your partner can intensify your sexual experience. If you chose to have sex, wear a latex condom with your partner every time. These behaviors will help protect you and your partner from contracting HIV/AIDS and other STDs.

Sex is an enjoyable, natural, and healthy aspect of human life. It is more enjoyable when it is safe.
APPENDIX E
MODIFIED RATIONAL SAFE SEX ADVERTISEMENT
Each year, there are around 19 million new STD/HIV infections. About half of all infections are with young people aged 15 to 24, even though they are only 25% of sexually active people.

You can get HIV and other STDs by sharing needles with an infected person or having unprotected sex with an infected person. There is no such thing as perfectly safe sex, but there is safer sex.

Use latex condoms every time and wear the condom from start to finish. If you don’t practice abstinence, practice safe sex.
APPENDIX F

MODIFIED NEGATIVE EMOTIONAL SAFE SEX ADVERTISEMENT
Each year, there are around 19 million new STD/HIV infections. About half of all infections are with young people aged 15 to 24, even though they are only 25% of sexually active people.

Sure you enjoy sex, but don’t be willing to die for it. People with HIV can look as healthy as anyone else. You can’t tell if someone has the virus just by looking at them. In fact, the person you are going to be with tonight might have HIV. If you have sex without a condom, you can catch HIV and/or other STDs.

Wear Latex Condoms Every Time. Practice Safe Sex.
APPENDIX G

MODIFIED POSITIVE EMOTIONAL SAFE SEX ADVERTISEMENT
Each year, there are around 19 million new STD/HIV infections. About half of all infections are with young people aged 15 to 24, even though they are only 25% of sexually active people.

HIV/AIDS and other STDs can be passed on by having unprotected sex with an infected person. You can avoid this by doing safer sex activities with your partner. Coming up with “safer sex” activities (e.g., masturbation, sexual touch, fantasy, etc.) with your partner can add to your sexual experience. If you choose to have sex, wear a latex condom with your partner every time. These things will help protect you and your partner from getting HIV/AIDS and other STDs.

Sex is an enjoyable, natural, and healthy part of human life. It is more enjoyable when it is safe.
APPENDIX H

MANIPULATION CHECK ITEMS
This scale consists of statements that describe your thoughts about the safe sex advertisement. Please read each of the following statements and write the number that best represents your opinion in the blank beside each question. Use the following scale to record your answers:

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

1. This message is rational. _______
2. This message gives facts in a rational manner. _______
3. We can say that this message is impartial. _____
4. This message gives facts as they really are. _____
5. The information in this message is objectively given. _______
6. We can say that this message objectively informs people. _______
7. I think that this message is based on fear. ______
8. We can say that this message frightens when we see it. ______
9. This message is quite frightening. ______
10. This message is transmitting a negative emotion. ______
11. This message gives an awful feeling. _______
12. We can say that seeing this message is not pleasant. _______
13. We can say that this message gives a positive image of people who practice safe sex. ______
14. I think that this message gives a good image of sexuality. _____
15. This message does not make people who have a sex life feel guilty. _______
16. This message presents the sexual aspect of life positively. _____
17. A positive emotion is transmitted by this message. _____
18. Personally, I would feel good by seeing this message. ______
APPENDIX I

POSITIVE AND NEGATIVE AFFECT SCHEDULE – EXPANDED FORM
This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way right now (that is, at the present moment), after viewing the safe sex advertisement. Use the following scale to record your answers:

1. Very Slightly or Not At All  
2. A Little  
3. Moderately  
4. Quite A Bit  
5. Extremely

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<td>21.</td>
<td>_____ frightened</td>
<td></td>
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<td>5.</td>
<td>_____ guilty</td>
<td>22.</td>
<td>_____ scornful</td>
<td></td>
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<tr>
<td>6.</td>
<td>_____ enthusiastic</td>
<td>23.</td>
<td>_____ alone</td>
<td></td>
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<td>7.</td>
<td>_____ afraid</td>
<td>24.</td>
<td>_____ astonished</td>
<td></td>
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<tr>
<td>8.</td>
<td>_____ joyful</td>
<td>25.</td>
<td>_____ lively</td>
<td></td>
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<tr>
<td>9.</td>
<td>_____ downhearted</td>
<td>26.</td>
<td>_____ jittery</td>
<td></td>
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<tr>
<td>10.</td>
<td>_____ nervous</td>
<td>27.</td>
<td>_____ irritable</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>_____ amazed</td>
<td>28.</td>
<td>_____ loathing</td>
<td></td>
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<tr>
<td>12.</td>
<td>_____ lonely</td>
<td>29.</td>
<td>_____ delighted</td>
<td></td>
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<tr>
<td>13.</td>
<td>_____ disgusted with self</td>
<td>30.</td>
<td>_____ angry</td>
<td></td>
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<td>14.</td>
<td>_____ shaky</td>
<td>31.</td>
<td>_____ ashamed</td>
<td></td>
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<tr>
<td>15.</td>
<td>_____ blameworthy</td>
<td>32.</td>
<td>_____ energetic</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>_____ surprised</td>
<td>33.</td>
<td>_____ blue</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>_____ scared</td>
<td>34.</td>
<td>_____ dissatisfied with self</td>
<td></td>
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</tbody>
</table>
APPENDIX J

SEXUAL RISK SCALE – ATTITUDES SUBSCALE
The following items are intended to measure people’s opinions about the use of condoms (i.e., male and female condoms). Please respond to all questions even if you are not sexually active or have never used (or had a partner who used) condoms. In such cases indicate how you think you would feel in such a situation. Please read each of the following statements and write the number that best represents your opinion in the blank beside each question.

1. Strongly Disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly Agree

1. It is a hassle to use condoms. R
2. People can get the same pleasure from "safer" sex as from unprotected sex.
3. Using condoms interrupts sex play. R
4. The proper use of a condom could enhance sexual pleasure.
5. Condoms are irritating. R
6. I think "safer" sex would get boring fast. R
7. "Safer" sex reduces the mental pleasure of sex. R
8. The idea of using a condom doesn't appeal to me. R
9. Condoms ruin the natural sex act. R
10. Generally, I am in favor of using condoms.
11. Condoms interfere with romance. R
12. The sensory aspects (smell, touch, etc.) of condoms make them unpleasant. R
13. With condoms, you can't really "give yourself over" to your partner. R
APPENDIX K

SEXUAL RISK SCALE – INTENTIONS SUBSCALE
The following items are intended to measure your intentions to practice safe sex (i.e., use condoms). Please respond to all questions even if you are not sexually active or have never used (or had a partner who used) condoms. In such cases, indicate how you think you would feel in such a situation. Please read each of the following statements and write the number that best represents your opinion in the blank beside each question.

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

1. If I were going to have sex, I would take precautions to reduce my risk of HIV/AIDS.
2. “Safer sex” is a habit for me.
3. I intend to follow “safer sex” guidelines within the next year.
4. If I were going to have sex in the next year, I would use condoms.
5. I would avoid using condoms if at all possible. R
6. I am determined to practice “safer sex”.
7. I would try to use a condom when I had sex.
APPENDIX L

THE CONDOM USE SELF-EFFICACY SCALE
These questions ask about your feelings about using condoms (i.e., male and female condoms) in specific situations. Please respond to all questions even if you are not sexually active or have never used (or had a partner who used) condoms. In such cases, indicate how you think you would feel in such a situation. Please read each of the following statements and write the number that best represents your opinion in the blank beside each question.

1. Strongly disagree
2. Disagree
3. Undecided
4. Agree
5. Strongly agree

1. I feel confident in my ability to put a condom on myself or my partner.
2. I feel confident I could purchase condoms without feeling embarrassed.
3. I feel confident I could remember to carry a condom with me should I need one.
4. I feel confident in my ability to discuss condom usage with any partner I might have.
5. I feel confident in my ability to suggest using condoms with a new partner.
6. I feel confident I could suggest using a condom without my partner feeling "diseased".
7. I feel confident in my own or my partner's ability to maintain an erection while using a condom.
8. I would feel embarrassed to put a condom on myself or my partner. R
9. If I were to suggest using a condom to a partner, I would feel afraid that he or she would reject me. R
10. If I were unsure of my partner's feelings about using condoms, I would not suggest using one. R
11. I feel confident in my ability to use a condom correctly.
12. I would feel comfortable discussing condom use with a potential sexual partner before we ever had any sexual contact (e.g. hugging, kissing, caressing, etc.)
13. I feel confident in my ability to persuade a partner to accept using a condom when we have intercourse.
14. I feel confident I could gracefully remove and dispose of a condom when we have intercourse.
15. If my partner and I were to try to use a condom and did not succeed, I would feel embarrassed to try to use one again (e.g. not being able to unroll condom, putting it on backwards, or awkwardness). 

16. I would not feel confident suggesting using condoms with a new partner because I would be afraid he or she would think I've had a homosexual experience.

17. I would not feel confident suggesting using condoms with a new partner because I would be afraid he or she would think I have a sexually transmitted disease.

18. I would not feel confident suggesting using condoms with a new partner because I would be afraid he or she would think I thought they had a sexually transmitted disease.

19. I would feel comfortable discussing condom use with a potential partner before we ever engaged in intercourse.

20. I feel confident in my ability to incorporate putting a condom on myself or my partner into foreplay.

21. I feel confident that I could use a condom with a partner without "breaking the mood."

22. I feel confident in my ability to put a condom on myself or my partner quickly.

23. I feel confident I could use a condom during intercourse without reducing any sexual sensations.

24. I feel confident that I would remember to use a condom even after I have been drinking.

25. I feel confident that I would remember to use a condom even if I were high.

26. If my partner didn't want to use a condom during intercourse, I could easily convince him or her that it was necessary to do so.

27. I feel confident that I could use a condom successfully.

28. I feel confident I could stop to put a condom on myself or my partner even in the heat of passion.
APPENDIX M

DEMOGRAPHIC QUESTIONNAIRE
Demographic Form

Age: ______

Sex (please check one):
Male: ______  Female: ______  If Not Listed, Please Specify: ______

Ethnicity (please check one):
Asian/Asian American: ______
Black/African American: ______
Caucasian/White: ______
Hispanic/Latino(a): ______
Native American: ______
Biracial/Multiracial: ______
If Not Listed, Please Specify: ______

Classification Level (please check one):
Not in School: ______
First Year: ______
College Sophomore: ______
College Junior: ______
College Senior: ______
College Graduate: ______
Graduate/Professional Student: ______

Parental Level of Education (please check one):
Some School: ______
High School Graduate/GED: ______
Vocational/Technical School: ______
2 Year College: ______
4 Year College: ______
Graduate/Professional Degree: ______

Parental/Household Income Level (please check one):
$0 – $25,000: ______
$25,000 – $50,000: ______
$50,000 – $75,000: ______
$75,000 – $100,000: ______
$100,000+: ______

State in which you currently reside: ______

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Relationship Status (please check one):
No serious relationship at this time: _______
Committed relationship, not living together: _______
Committed relationship, living together and not married: _______
Committed relationship, married: _______
Separated (either legally or non-legally): _______
Divorced: __________
Remarried: ______
Widowed: ______

Sexual Orientation (please check one):
Heterosexual: ______
Gay/Lesbian: ______
Bisexual: ______
If Not Listed, Please Specify: __________

Have you ever engaged in sexual intercourse?
Vaginal YES____ NO____
Anal YES____ NO____
Oral YES____ NO____

Who have you engaged in sexual intercourse with (i.e., oral, vaginal, anal)? (please check one):
Only men __________
Mostly men: _______
Equally men and women: _____
Mostly women: _____
Only women: ______

Have you ever had unprotected sex (i.e., sex without using a condom)?
Vaginal YES____ NO____
Anal YES____ NO____
Oral YES____ NO____

Do you believe the use of condoms is morally acceptable? YES____ NO____

Are you currently sexually active? YES____ NO____

In the last 6 months, how many sexual partners have you had? _______

In your lifetime, how many sexual partners have you had? _______
Have you ever been tested for HIV/AIDS? (please check one):
Yes: ______________
No: ______________
I Don’t Know: ___________

Did you ever get the results of the HIV/AIDS test? (please check one):
Yes: ______________
No: ______________
Not Applicable: ___________
APPENDIX N

SUGGESTIONS FOR REDUCING RISK OF HIV/STD INFECTION
*The following was adapted from the CDC National Prevention Information Network (NPIN)*

If you decide to be sexually active, there are ways to reduce your risk of contracting HIV and other STD infections. By engaging in the following behaviors, you can reduce your risk:

- Be in a long-term, mutually monogamous relationship with an uninfected partner
- **Use a new latex condom** for each act of intercourse (i.e., oral, anal, vaginal)
- Get tested for HIV and other STDs before initiating sexual intercourse with a new sex partner
- If infection status is unknown, ask a new sex partner if he or she has an STD, has been exposed to one, or has any unexplained physical symptoms.
- **Do not have unprotected sex if your partner has signs or symptoms of STDs** (e.g., sores, rashes, or discharge from the genital area)
- **Get regular checkups** for STDs (even if you show no symptoms), and be familiar with the common symptoms

The following websites have resources for HIV/STD testing and counseling services anywhere in the United States:


APPENDIX O

QUESTIONS FOR EXPERT PANEL
Please describe your thoughts and feelings about the safe sex advertisements in the spaces below. Please read each of the following questions and write your opinion in the blank following each question. Thank you.

1. Do you believe the advertisements were persuasive (i.e., persuading individuals to use condoms and practice safe sex)? Why or Why not?

2. Do the advertisements appear to represent different persuasive appeals (i.e., rational/neutral, fear-inducing, positive sexuality)?

3. Please rate the extent that the rational advertisement appears to represent a rational or neutral appeal on a scale of 1 – 5 (i.e., 1-Poor Representation, 2-Fair Representation, 3-Good Representation, 4-Very Good Representation, 5-Excellent Representation).

4. Please rate the extent that the negative emotional advertisement appears to represent a fear-inducing appeal on a scale of 1 – 5.

5. Please rate the extent that the positive emotional advertisement appears to represent a positive sexuality appeal on a scale of 1 – 5.

6. Please assess the overall quality of the advertisement (e.g., message, tone, style, attractiveness, clarity)?

7. Please assess the color scheme of the advertisements as reflective of the appeal (i.e., neutral color, positive color, negative color)?

8. What are your thoughts about the race/ethnicity of the individuals in the advertisements? Are they representative of society (i.e., ethnically diverse)?

9. Do you have any suggestions or ways to improve the advertisement?
APPENDIX P

PILOT STUDY OPEN-ENDED QUESTIONS
Please describe your thoughts and feelings about the safe sex advertisements in the spaces below. Please read each of the following questions and write your opinion in the blank following each question. Thank you.

1. Do you believe this advertisement was persuasive (i.e., persuaded you to use condoms and practice safe sex)? Why or Why not?

2. How does this advertisement make you feel (e.g., happy, mad, sad, etc.)?

3. Please assess the overall quality of the advertisement (e.g., message, tone, style)?

4. Please assess the overall relevance of the advertisement topic (i.e., topic importance for your life, your peers, and young adults in general)?

5. Do you have any suggestions or ways to improve the advertisement?
REFERENCES


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VITA

Danyele Renee Shelton was born on August 14, 1983 in Indianapolis, Indiana. She graduated with honors from Blue Springs South High School in 2001. She received an academic scholarship to Tennessee State University in Nashville, Tennessee and graduated Summa cum Laude in 2005 with a Bachelor of Science degree.

She was accepted into the Counseling Psychology doctoral program at the University of Missouri-Kansas City in 2005. While in the program, she was awarded the Minority Doctoral Fellowship during the 2007 – 2008 and 2008 – 2009 academic years. She completed a Masters of Arts in Counseling and Guidance from University of Missouri-Kansas City in 2010. She has a special interest in human sexuality, multicultural counseling, and psychological assessment. Upon completion of her degree requirements, she plans to continue her clinical and assessment work in a university counseling center and/or community mental health setting.