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Know Your Feelings and Desires: Targeted Emotional Education as a Vehicle for Improving Safe Sex Health Messages

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Targeted Emotional Education as a Vehicle for Improving Safe Sex Health Messages

Sara Picklesimer, Ph.D.

University of Connecticut, 2016

The current research compared the effectiveness of safe sex interventions that utilize an emotional education narrative style (Targeted Emotional Education Modules, or TEEMs) to those that utilize an imperative style. In a 2 (emotional education vs. imperative narrative style) by 2 (high vs. low normative expertise) by 2 (positive vs. negative valence) experimental design, participants were exposed to a safe sex intervention video in which two females discussed condom use or nonuse following a hookup at a party. Condom use attitudes and intentions were assessed immediately following the intervention, and actual condom use was assessed approximately one month later. While TEEMs were not necessarily more effective in promoting condom use attitudes and behaviors long-term, this study did provide support for the effectiveness of brief, cost-effective narrative video interventions. The imperative style promoted affective processing of the message, which triggered an underlying persuasive process that promoted rational processing of the message, followed by message and source evaluation, which finally impacted condom attitudes, intentions, and behaviors. Both message valence and normative expertise of the communicator exerted individual and combined effects on the persuasion process, such that message valence impacted affective processing and perceptions of normative expertise, with normative expertise positively influencing message and source evaluations. Implications for narrative health interventions are discussed based on these findings.

Keywords: Emotional Education, Safe Sex Interventions, Normative Expertise, Message Valence

Know Your Feelings and Desires:
Targeted Emotional Education as a Vehicle for Improving Safe Sex Health Messages

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APPROVAL PAGE

Doctor of Philosophy Dissertation

Know Your Feelings and Desires:
Targeted Emotional Education as a Vehicle for Improving Safe Sex Health Messages

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Chapter 1: Introduction

With the changing relationships of today's sexual landscape, it is no surprise that more young people, particularly college students, are increasingly engaging in casual sex with multiple partners. Though monogamous dating relationships are still prevalent among today's emerging adult population, more college students are postponing commitment in favor of hookups, friends-with-benefits (FWB) relationships, and other forms of casual sex (Fielder, Walsh, Carey, & Carey, 2013). While hookups and FWB encounters can range in intimacy, from kissing to intercourse (Epstein, Calzo, Smiler, & Ward, 2009), Paul, McManus, and Hayes (2000) reported 47% of college men and 33% of college women have had sex with a casual "hookup" partner. More recently, Garcia and Reiber (2008) reported that between 70 and 80% of college students hook up openly, which indicates hooking up is a normal experience.

The increasing prevalence of casual sex among college students is accompanied by the risk of contracting HIV and other sexually transmitted infections (STIs), as well as unplanned pregnancy. Despite the fact that college students are at a relatively high (and increasing) risk of infection (Centers for Disease Control and Prevention, 2014), their condom use is, at best, inconsistent (Rotermann, 2005). In fact, of the approximately 20 million new STIs diagnosed each year in the US, half of them occur among 15-24 year-olds (Centers for Disease Control and Prevention, 2014). Only about 40% of college students report regularly using condoms (Rotermann, 2008; Eisenberg, 2001), however, and 36% of college students reported not using a condom with a new partner, while 50% reported not using a condom during their most recent sexual encounters (Freimuth, Hammond, Edgar, et al., 1992).

There are many public health campaigns and health interventions that target college students with the primary goal of reducing risky behaviors, including risky sexual behaviors. The majority of the campaigns and interventions designed to promote safe sex largely focus on

cognitive and social factors (Albarracin, Johnson, Fishbein, & Muellerleile, 2001). While the decision to use condoms in casual sexual encounters involves a variety of factors including knowledge of risk factors, motivation and comfort in negotiating condom use, and the partner's attitudes toward condom use (Carter, McNair, Corbin, & Williams, 1999; Impett & Peplau, 2003; Wingood & DiClemente, 2000), it is also influenced by emotions associated with condom use. Despite the growing evidence that suggests that emotion plays a key role in the decision to use condoms, much of the existing research neglects emotion as a key variable in the decision-making process, which has important implications for the design of health messages.

By and large, current public health campaigns fail to explore the emotions associated with risky decisions, which is problematic because a growing body of research suggests that emotions are the prevailing influence in most important decisions (Keltner & Lerner, 2010; Ekman, 2007; Gilbert, 2006; Frijda, 1988), and the emotions one associates with a health behavior are directly related to that behavior (Keer, van den Putte, & Neijens, 2012; Kiviniemi, Voss-Humke, & Seifert, 2007; Lawton, Conner, & McEachan, 2009; Walsh & Kiviniemi, 2014). Messages designed to promote healthy decisions, then, could benefit from an emotional education element. Emotional education messages and interventions might be more effective than imperative-style messages because they target specific emotions associated with risky health behaviors in an attempt to help recipients label and anticipate emotional outcomes of a given choice, rather than just offering information, advice, or issuing directives. Emotionally competent individuals tend to be better prepared to handle risky situations (Buck, 2014; Buck 1984), so Targeted Emotional Education Modules (TEEMs) should help prevent risky, impulsive decisions in various contexts, including sexual encounters.

TEEMs are short intervention videos that show people discussing the emotions they experienced in a given situation, which helps viewers learn to label their emotions and anticipate them in similar situations so that they can deal with them appropriately and make a healthy decision. Ferrer, Fisher, Buck, and Amico (2011) found preliminary support for the effectiveness of TEEMs in increasing condom use among college students over time. Research using the TEEMs framework has not yet considered whether the valence of the emotions targeted is important, which could help message designers more strategically focus their efforts to improve healthy decision-making. In a similar vein, normative expertise has been found to be an important moderator of social influence (Hall & Blanton, 2009; Stuart & Blanton, 2003), calling into question the effectiveness of promoting a healthy behavior compared to criticizing an unhealthy behavior. Therefore, valence of the targeted emotions and normative expertise of the communicator may have important implications for TEEMs and other health messages.

The goal of the current project is to test the effectiveness of safe sex interventions that utilize an emotional education narrative style compared to an imperative style. This study conceptualizes an imperative style as one that issues a direct command regarding the desired behavior, such as “Always use a condom.” While both styles can be presented in a narrative format, TEEMs differ from imperative styles in that they do not offer direct statements regarding the desired behavior, and instead, convey the emotions experienced as a result of the behavior in question. These interventions aim to improve condom use behaviors among college students by examining the differential effects of promoting safe sex through positive emotional experiences and discouraging unsafe sex through negative emotional experiences. The current project is guided by research regarding the process of emotional education as framed by the developmental-interactionist theory of communication (Buck, 2013), as well as the influence of

social norms. Special consideration is given to the variable of normative expertise as an important moderator of social influence.

Chapter 2: Developmental-Interactionist Theory of Communication

Spontaneous and Symbolic Communication

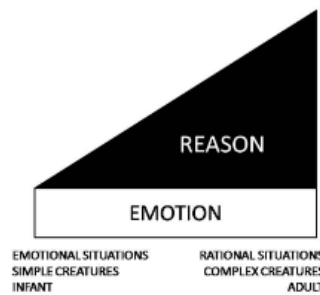
The developmental-interactionist (D-I) theory of communication is particularly relevant to the study of risky decision-making in the specific context of sexual encounters, because it explains the combined influence of rational and emotional processes involved in the transmission of messages. The theory posits that there are two simultaneous streams of communication that interact with and modify each other, and exert equally important, but varying influences across contexts (Buck & VanLear, 2002; Buck 1984). The spontaneous stream can best be understood as a continuous readout of the emotional state of the sender, which is encoded into externally accessible nonverbal cues and expressive displays. According to D-I theory, spontaneous communication is based on biologically-shared signal systems that have evolved to aid in social coordination (Darwin, 1872). The elements are external indicators, or signs, that provide information about the individual's internal state. Over time, these signs become ritualized displays, recognized by other members of the species (Buck, 1981). For example, an individual's face may naturally flush when he or she initiates a conversation about condom use with a new partner. The flush may be accompanied by increased heart rate, perspiration, and other physiological responses that are outside the control of the communicator. The individual may also avoid eye contact or turn their face away from the partner in an unconscious display of nervousness or embarrassment. A keen receiver can easily pick up on the reddening of the face and other expressive cues, as well as the lack of direct eye contact, due to evolved perceptual systems preattuned to the displays of other members of the species (Buck, 1984). Thus, the

receiver is preattuned to pick up on the external cues of avoidance and deduce that the sender is embarrassed or nervous, and respond appropriately. In fact, research in the domain of person perception suggests that nonverbal cues are usually subtle and not always encoded or decoded intentionally or consciously (Harris & Rosenthal, 1985; Ambady & Rosenthal, 1992).

It is important to note that the external signs displayed by the sender are not arbitrary or learned, nor are they propositional. Because an expression is elicited without the control of the sender, and because the expression is an outward manifestation of the internal state of the sender, it cannot be false; otherwise, it would be absent (Buck, 1984). Spontaneous communication, then, is involuntary; that is, elements of the message are sent and received without deliberation or intent. The symbolic stream of communication, on the other hand, involves intentional and propositional messages that are crafted and delivered using symbols that are shared among individuals of a particular culture or social group. These symbols are arbitrary, and so their meaning must be learned. Symbolic communication, then, is characterized by voluntarily and intentionally sending messages using verbal and nonverbal symbols that are recognized and understood by other members of the culture who share a language (Buck & VanLear, 2002; Buck, 1984). For example, the individual described above likely put significant thought into how to broach the topic of condom use, carefully selecting the appropriate words, tone, and timing to ensure the message was interpreted by the partner in the way that she intended. The speaker likely took care to phrase the conversation in a manner that communicated her desire to use a condom, while making sure to communicate trust in and care for the partner. The speaker consciously and deliberately chose the language and nonverbal cues that she knew would be understood by the audience. In other words, she strategically communicated using the verbal and nonverbal symbols she shared with the partner, which are understood in the larger social context.

Human communication is characterized by both symbolic and spontaneous elements, which are reflected in the parallel processes of rational thought and emotional experience. Some interactions may be characterized by purely spontaneous or purely emotional communication, while symbolic processes exert a varying influence across situations (Buck & VanLear, 2002; Buck, 1984). Environmental stimuli may trigger involuntary physiological responses that have the potential to become emotional expressions, but these expressions may be tempered or regulated by rational processing of the situation, or reasoning. For example, a young adult male may experience feelings of sexual arousal and excitement toward a female he meets at a party, but is likely to refrain from expressing those feelings until the appropriate time. Similarly, a female hooking up with a new partner for the first time might feel nervous about having unprotected sex, but also worried that if she suggests using a condom, her partner will reject her, so she decides not to initiate the condom conversation. Figure 1 below depicts the interaction between spontaneous and symbolic processes as it exists on an affect/reason (A/R) continuum (Buck, Anderson, Chaudhuri, & Ray, 2004). The left-most point of the continuum is characterized by pure spontaneous communication, where reason has no influence on communication, and behavior is solely guided by spontaneous emotional processes. Moving further to the right side of the continuum, reason exerts a greater influence on communicative outcomes, but we can see that emotion is never completely absent from our interactions. Emotion exerts a continuous influence on information-processing and behaviors, while reason can vary from a complete lack of influence to dominating decision-making (Buck, 2014).

Figure 1: Affect-Reason Continuum (Buck, 1984).



In fact, affective responses often precede and influence cognitive processes (Kunst-Wilson & Zajonc, 1980). When a spontaneous response to a stimulus is triggered, humans do not always automatically react in an expressive manner. Instead, individuals think about whether or not they want to express the emotion, which might involve evaluating the appropriateness of the response in a given social context. For example, an individual might be prompted to laugh during a funeral if a speaker commits a Freudian slip during the eulogy. Recognizing that laughter and joy during such a somber event would be inappropriate, the individual suppresses the urge to giggle. On the other hand, a close family member of the deceased who is overcome by emotion may weep uncontrollably throughout the funeral, and is likely not consciously evaluating the context or the appropriateness of the expressive display. The former exemplifies the effect of rational and symbolic labeling, which allows the individual to regulate the triggered emotional response, while the latter exemplifies pure spontaneous communication in the relative absence of symbolic labeling and control. Thus, spontaneous responses to environmental cues can help to inform the symbolic labeling and understanding of the stimulus, but both inform judgment and decision-making in various situations, even though one may take precedent over, or modify, the other.

In decision-making contexts, like new sexual encounters, feelings can certainly guide behavior, but do not necessarily control it (Buck & Ginsberg, 1997). Individuals always have some degree of control in decision-making, but impulsive, emotionally driven responses are more likely to occur among individuals who are not properly emotionally educated (Mikulincer, Shaver, Gillath, & Nitzberg, 2005; Buck, 1984). Emotional education is a process by which children learn to identify and label their emotions through interactions with caregivers, which helps them deal with the emotions effectively and express them appropriately in various social situations (Buck, 1984). The following section details the emotional education process and its implications for risky decision-making. I begin by describing pseudospontaneous communication, or the ways in which we learn to regulate emotional expressions according to socially-defined display rules.

Pseudospontaneous Communication

Emotional education. While the distinction between spontaneous and symbolic communication is often reflected in nonverbal and verbal messages, respectively, it is important to note that nonverbal messages can also be propositional and intentional, or pseudospontaneous. Pseudospontaneous communication, then, involves a degree of emotional regulation, which is characterized by the strategic manipulation of nonverbal signals to communicate an intended message or controlling the response to an emotional stimulus to meet social goals (Buck & VanLeer, 2002; Buck, 1984; Garner & Hinton, 2010). The ability to regulate emotional expressions depends, first, on the ability of the individual to accurately identify and label the emotion being experienced (Fischer, Manstead, & Timmers, 1998). This labeling process is learned and fostered primarily through interactions between children and caregivers during the developmental cycle. Young children do not have the cognitive capacity or the experience

necessary to identify, label, and understand their feelings; instead, they act on them impulsively. Common sense and experiential learning tell us that we cannot always immediately act on what we feel because there are social consequences for violating contextual guidelines or norms. Therefore, children have to learn to regulate their responses, and they do so through a process called social biofeedback, which refers to the responses children receive from their caregivers regarding their emotional expressions (Buck, 1984). This feedback helps children identify and label their feelings so, ultimately, they can learn to express themselves in socially appropriate ways.

For example, a child might be building a sand castle with his younger sister, who trips and falls, knocking the castle over. The child might get angry and push his sister for knocking over his sculpture, causing her to cry. A caregiver would ideally step in at this point and tell the boy that she understands that he is angry and upset that the castle fell, but that pushing people is not a nice thing to do. She might tell him that pushing is not what people do when they are angry, and instead, they take a timeout to cool off. This interaction helps the child understand that the feeling he was feeling is termed being angry, but that pushing another person is not an appropriate way to deal with that feeling, and can actually hurt the other person. This interactive process where the child learns to accurately label and deal with his emotions effectively is called emotional education.

When emotional education is effective, it results in emotional competence. Emotional competence is achieved when an individual has learned how to label, interpret, and appropriately express emotions across various situations (Buck, 1984). This involves the learning of display rules, which are culturally-bound guidelines that dictate which behaviors are seen as normal or socially acceptable (Buck, 1984). Wilson, Raval, and Salvina (2012) suggested that as children

develop, they learn the cultural and gender expectations for appraising emotion-eliciting stimuli, as well as normative ways to express or regulate their emotions. While the emotional processes are natural and innate, regulating emotions so that they do not control behavior depends on the individual's ability to engage in symbolic processing of information.

Entertainment programming and education. While emotional education occurs mainly through interactions with caregivers, it is further reinforced through interactions with peers and other role models, including characters in the media. In fact, fictional characters and other media figures provide unique opportunities for emotional education, particularly for topics that are difficult or uncomfortable to discuss with others. Media characters provide viewers with a vicarious learning experience, allowing viewers to see the consequences of a behavior without having to actually experience them (Bandura, 2002). This has important implications for emotional education in the context of risky decision-making. These types of decision-making contexts likely involve behaviors and feelings that individuals are hesitant to discuss with others, like those involved in sexual encounters. Entertainment programming portrays characters that are often similar to viewers and with which viewers can identify. These characters model behaviors in contexts similar to the ones that viewers may experience. Furthermore, viewers are able to experience the positive and negative consequences of the behavior with the character, which could include physical, social, and emotional outcomes. If viewers see a loved television character experience the consequences of unprotected sex, for example, they may anticipate those same consequences for themselves. In particular, viewers who see characters experiencing, displaying, and discussing the emotional outcomes of a decision may be better prepared to anticipate and label those same emotions associated with those choices in their own lives.

Existing research provides evidence for the impact of television programming on viewers' sexual behavior. For example, some characters can be seen experiencing negative social and emotional consequences of casual or unprotected sex (Finnerty-Myers, 2011), providing viewers with an example of what they can expect following the same behavior. Television programs may also provide viewers with a script for how to discuss condom use with a partner (Moyer-Guse, Chung, & Jain, 2011), which is beneficial for those who feel embarrassed or unsure about how to have that conversation. However, media examples of sexual activity primarily show positive outcomes of risky sexual behavior, or no consequences at all (Farrar, 2006). They also fail to portray characters realistically engaging in safe and smart behaviors, like discussing or using condoms (Finnerty-Myers, 2011; Collins, Elliott, Berry, Kanouse, & Hunter, 2003; Farrar, 2006). Nevertheless, entertainment media have been shown to act as an educator for various health behaviors, including organ donation (Morgan, Movius, & Cody, 2009), breast cancer screening (Hether, Huang, Beck, Murphy, & Valente, 2008; Wilkin, Valente, Murphy, Cody, Huang, & Beck, 2007), HIV/AIDS testing (Kennedy, O'Leary, Beck, Pollard, & Simpson, 2004), and safe sex (Finnerty-Myers, 2011; Moyer-Guse & Nabi, 2011; Farrar, 2006). Research on entertainment-education shows that embedding health messages in narrative media can promote knowledge, attitudes, and behavior change (Singhal & Rogers, 1999), often more effectively than more overt health messages (Slater & Rouner, 2002). Embedding messages in a narrative storyline actually inhibits reactance and counter-arguing because viewers are focused on the events as they play out in the storyline (Green & Brock, 2000; Moyer-Guse, 2008; Slater & Rouner, 2002). Additionally, the narrative structure of entertainment programming encourages viewers to become emotionally connected to characters by transporting them into the narrative and promoting identification and empathy (Murphy,

Frank, Moran, & Patnoe-Woodley, 2011). Unfortunately, embedding health messages in entertainment media is difficult, costly, and time-consuming, and evidence of sustained effects on attitudes and behaviors over time is unclear (Moyer-Guse, Chung, & Jain, 2011; Farrar, 2006; Collins et al., 2003).

Targeted Emotional Education Modules (TEEMs) utilize the same principles as entertainment-education, but are brief, cost-effective, and easier to implement and control. In addition, they improve upon more traditional health messages and interventions that only offer imperatives, telling recipients what to do or what not to do, which could result in reactance and counter-arguing (Green & Brock, 2000). TEEMs are intervention videos designed to improve healthy decision-making through emotional education, and have received preliminary support in sustaining condom use among college students (Ferrer et al., 2011). The videos typically portray two characters discussing the emotions felt after engaging in or refraining from a risky behavior. The health messages are embedded within a conversation in a single scene, in which the characters discuss how they felt following a healthy or unhealthy decision, rather than simply providing information or modeling the desired behavior. The specific emotions involved are those actually reported by participants in studies of risky decisions. Viewers see the characters accurately label and express the specific emotions felt, which will, in turn, improve understanding and labeling among viewers of their own feelings in similar situations (Ferrer et al., 2011; Gantt & Agazarian, 2011). TEEMs promote the symbolic processing and labeling of emotional information so individuals can make more desirable choices, rather than acting on their emotions impulsively. The goal of TEEMs, then, is to help viewers anticipate how they will feel in risky situations so they will make healthier choices (Ferrer et al., 2011).

Implementing emotional education elements, such as TEEMS, in health campaigns and interventions has important implications for health practitioners. First, existing evidence suggests that emotions are critical to both information-processing (Clore, Gasper, & Garvin, 2001) and decision-making (Loewenstein & Lerner, 2003). In fact, emotions might actually be *more* influential in decision-making than other social and cognitive factors (Lawton, Connor, & McEachan, 2009; Norton, Bogart, Cecil, & Pinkerton, 2005). Failing to consider the impact of emotions in health decisions is neglecting, perhaps, the most influential factor in decision-making. Second, emotions are particularly influential in sexual decision-making contexts (Buck et al., 2004), the nature of which are usually highly emotional. Though the TEEMs framework can be adapted to target various risky behaviors, casual sexual encounters provide a highly relevant context in which to test its effectiveness among college students. Furthermore, research regarding the decision to engage in safe sex practices can benefit from a program that expands upon the existing literature that focuses primarily on information, risk assessment, and social norms (Albarracin, Johnson, Fishbein, & Muellerleile, 2001), and examines these factors through a socio-cognitive lens, usually associated with the Theory of Planned Behavior (Ajzen, 1991).

It is, however, beneficial to examine the impact of social norms on safe sex decisions, particularly among college students. Hooking up is a normative experience among college students (Garcia, Reiber, Massey, & Merriweather, 2012; Stinson, 2010; Manning, Longmore, & Giordano, 2005), making them a particularly vulnerable population to risky sexual behaviors. Furthermore, recipients of health messages are likely to glean normative information from the message, depending on characteristics of the communicator and the way s/he delivers the message. For example, an individual may discount a message from a communicator who is very different from him or her because of the assumption that the communicator is unfamiliar with the

“way things are” or has little knowledge or insight regarding what is normal behavior in a particular social group (Hall & Blanton, 2009; Druckman, 2001). Knowledge or insight into behavioral norms, or normative expertise, has been found to moderate the effect of persuasive messages on attitudes and behaviors (Hall & Blanton, 2009; Stuart & Blanton, 2003), making it an important variable to consider in the design of health messages. The following section expands upon the influence of social norms on decision-making, specifically in the context of safe sex behaviors, while further elucidating the specific role of normative expertise in health messages.

Chapter 3: Social Norms and Decision-Making

Norms and the Role of Normative Expertise

Descriptive and injunctive norms. An abundance of existing research has demonstrated that perceptions of others’ attitudes and expectations can influence individuals’ own thoughts and behaviors (Festinger, 1950, 1954; Ajzen, 1991; Arnett, 1995; Kallgren, Reno, & Cialdini, 2000). Individuals are motivated by acceptance and approval by others, so they adjust their behavior to meet perceived social expectations, or perceived social norms (Asch, 1957; Sherif, 1936). Perceived norms have been shown to influence both health-related attitudes and behaviors across various domains (McMillan, Higgins, & Connor, 2005; Campo, Cameron, Brossard, & Frazer, 2004; Park & Smith, 2007; Morgan, 2004), including condom use (Bryan, Fisher, & Fisher, 2002; Albarracin et al., 2001). Descriptive norms refer to peers’ actual or perceived behaviors, while injunctive norms refer to peers’ actual or perceived attitudes toward certain behaviors, including approval or disapproval of the behavior (Cialdini & Trost, 1998). In the context of sexual behaviors, the descriptive norms previously examined include the quantity and frequency of sexual behaviors (Buhi & Goodson, 2007), condom use behaviors (Sheeran,

Abraham, & Orbell, 1999), and sexual risk-taking (van de Bongardt, Reitz, Sandfort, & Dekovic, 2015). Meta-analytic findings suggest that sexual activity is more strongly influenced by descriptive norms than injunctive norms (van de Bongardt et al., 2015), so the remaining discussion will focus primarily on descriptive norms.

Research has demonstrated that perceived social norms regarding condom use is an important predictor of individuals' actual condom use behavior. Perceived norms have been found to affect both contraceptive and safe sex behaviors (Svenson, Ostergren, & Merlo, 2002; Mizuno, Kennedy, & Seals, 2000; Galligan & Terry, 1993; Fisher & Misovich, 1990a, 1990b; Kelly, St. Lawrence, Brasfield, Stevenson, Diaz, & Hauth, 1990; DiClemente, Forrest, & Mickler, 1990; Catania, Dolcini, Coates, Kegles, Greenblatt, Puckett et al., 1989). This has been found among both high school and college students where perceived norms for condom use were associated with condom use intentions and rates of condom use (Bryan, Fisher, & Fisher, 2002; Fisher, Misovich, & Fisher, 1992). Furthermore, findings from two meta-analyses (Albarracin et al., 2001; Sheeran & Taylor, 1999) indicate a strong positive relationship between perceived norms and intentions to use condoms. Unfortunately, college students exhibit a tendency to overestimate the prevalence of their peers' sexual activity (Holman & Sillars, 2012; Lambert, Kahn, & Apple, 2003), and these perceived norms influence their own sexual behaviors (Lewis, Lee, Patrick, & Fossos, 2007). Page, Hammermeister, and Scanian (2000) found a positive relationship between perceived prevalence of peers' sexual behaviors and sexual activity among the study participants themselves. On the other hand, Chernoff and Davison (2005) reported that male college students were more likely to report intentions to use condoms in the future when they were told that risky sexual behaviors were uncommon among their peers.

Sources of norms. Normative information comes from a variety of sources, including social networking sites, likely making norm perceptions more difficult to target and control. Zhao, Grasmuck, and Martin (2008) found that Facebook photos uploaded by users provide information about college students' sexual norms. More specifically, Young and Jordan (2013) found that college students who viewed sexually suggestive photos from a college Facebook network estimated that their peers were engaging in more unprotected sex and were having more sex with strangers compared to those who viewed non-suggestive photos. More importantly, the respondents who viewed suggestive photos also reported a higher likelihood of engaging in unprotected sex themselves, and were marginally more likely to have sex with strangers. These findings convey two important ideas. First, social norms can be perceived through still photographs and can influence behaviors without any actual interaction, which would suggest that normative information is communicated, at least partially, nonverbally. Second, when students perceive that their peers are cautious in regards to their sexual activity, they are also more likely to intend to exercise caution themselves. It stands to reason, then, that special consideration should be given to the communicator of a health message, since s/he is likely to communicate normative information, intentionally or unintentionally, through verbal and nonverbal elements. In fact, Donaldson, Graham, Piccinin, and Hansen (1995) argued that individuals can easily infer a communicator's normative beliefs regarding the most appropriate behavior in health-related messages, in addition to deducing the prevalence of that behavior among the target population (Stuart & Blanton, 2003). In particular, Hall and Blanton (2009) argued that individuals tune into a communicator's normative expertise, which they use to guide their own inferences about a particular behavior. Normative expertise refers to "the extent to which a communicator is perceived to have access to truthful information about a behavioral

norm” (Hall & Blanton, 2009, p. 83). In other words, in the same way that recipients of persuasive messages are influenced by speaker characteristics like appearance and credibility, they are also likely to be influenced by cues that indicate normative credibility.

For example, message designers often utilize actors from the target population, individuals with whom recipients are likely to identify and trust, who present themselves as knowledgeable and credible (Petty & Wegener, 1998). To be perceived as knowledgeable regarding a behavior may also involve conveying knowledge about what is normal or typical within the target population. College students are unlikely to be persuaded to refrain from casual sex by a parent, for example, because the parent is not tuned into the norms of the hookup culture on college campuses and, therefore, does not understand the social pressures of that environment. Other college students, however, do have insight into these types of activities, and so may have greater influence on members of the same population. Assuming that health messages target counter-normative behavior (Miller, Taylor, & Buck, 1991), messages that address safe sex among college students could convey that that using condoms is normative, and that refusing to use a condom is relatively uncommon. In fact, compared to participants in a control group, Carnaghi, Cadinu, Castelli, Kiesner, and Bragantini (2007) found that participants who received information regarding safe sex believed that their social environment was supportive of condom use, and were more likely to report intentions to use condoms themselves.

Message framing. Further research, however, has found that message valence can impact normative assumptions, thereby affecting persuasive outcomes (Hall & Blanton, 2009). In everyday conversations, we usually do not notice or comment on behaviors and events unless they are out of the ordinary or abnormal (Stuart & Blanton, 2003). Applying this same principle to persuasive messages, it could be problematic to promote a desired behavior, as the message

may unintentionally communicate that the healthy choice is relatively uncommon. Across three studies that examined different behaviors (steroid use, safe sex, and hand-washing), Hall and Blanton (2009) found normative expertise to moderate the effect of message frame on behavioral outcomes. When participants were exposed to a normative expert who promoted the behavior in question, they perceived that behavior to be uncommon, or counter-normative, compared to those who were exposed to negatively-framed messages in which the communicator criticized the undesirable behavior. For example, Stuart and Blanton (2003) found that college students who read positively framed messages praising condom use perceived condom use to be an uncommon behavior, compared to those who read the message criticizing condom non-use. It seems, then, that communicators who are high in normative expertise may inadvertently promote normative beliefs that suggest that advocated behavior is abnormal, whereas those low in normative expertise can move more freely between positive and negative frames (Hall & Blanton, 2009). These findings suggest that message designers should take caution when framing a message positively because a communicator who is perceived to be “in the know” who promotes condom use may convey the belief that using condoms is out of the ordinary, thereby undermining attempts to discourage risky sexual behaviors.

Emotional framing. Because the current research is focused on the role of emotional education in improving risky decision-making, the primary interest lies in the emotional framing of the message. Is a communicator who uses a condom and expresses positive emotional experiences more or less effective in promoting safe sex than a communicator who does not use a condom and expresses negative emotional experiences? The first of these communicators frames her message positively, promoting condom use behaviors through positive emotional consequences, while the second of these communicators frames her message negatively,

criticizing the lack of condom use through negative emotional consequences. Secondly, how does the normative expertise of the communicator impact viewers' perceptions of condom use and intentions to use them? The research outlined suggests that normative experts should frame their messages negatively to avoid promoting the belief that condom use is out of the ordinary, while message valence matters less for non-experts. The following section will discuss specific emotional experiences surrounding sexual encounters and their influence in the sexual decision-making process.

Chapter 4: Emotions, Sex, and Decision-Making

Emotional experiences and sexual encounters

Emotional valence. It should come as no surprise that the existing literature regarding emotional experiences in sexual encounters has produced conflicting, albeit complementary, findings. Generally, males and females tend to report both positive and negative emotions following casual encounters (Owen, Rhoades, Stanley, & Fincham, 2010; Peterson & Muehlenhard, 2007; Grello, Welsh, & Harper, 2006; Paul & Hayes, 2002; Paul, McManus, & Hayes, 2000). Owen et al. (2010) found that while males and females reported a mix of both positive and negative experiences, women tended to report more negative than positive emotions, and men reported more positive than negative emotions after hooking up. Owen and Fincham (2011), however, found that both men and women reported more positive than negative emotional reactions overall, although men did report slightly more positive experiences than women. Emotional reactions were measured only a day after the hookups occurred, though, so it is possible the emotions changed over time. Other researchers have confirmed this finding, providing support for the notion that hookups are a positive emotional experience for both men and women (Lewis, Granato, Blayney, Lostutter, & Kilmer, 2012; Fielder & Carey, 2010).

Some researchers have provided evidence to the contrary, particularly regarding females' emotional experiences. Hookup behavior has been shown to be positively related to depressive symptoms in women (Grello, Welsh, & Harper, 2006), as well as low self-esteem (Paul et al., 2000) and sexual regret (Eshbaugh & Gute, 2008). Owen and Fincham (2011) argued that women may experience more negative emotions following casual sex because they hope that their hookups will become romantic relationships, a desire that often remains unfulfilled. Furthermore, Paul and Hayes (2002) suggested that women experience pressure from their hookup partners to go further than they want to during hookups, while consistently dealing with our culture's sexual double standard, both of which can contribute to a more negative emotional experience.

Emotions and decision-making. There has been a steadily growing body of research that clearly demonstrates the importance of emotions in decision-making, particularly in the context of health-related behaviors (Keer, van den Putte, & Neijens, 2012; Kiviniemi, Voss-Humke, & Seifert, 2007; Lawton, Conner, & McEachan, 2009; Walsh & Kiviniemi, 2014), and condom use behaviors are no exception. In fact, previous researchers have found that compared to cognitively based beliefs, emotions are stronger and more proximate predictors of condom use behaviors (Walsh, Kiviniemi, & Rajagopal, 2012; Lawton, Connor, & McEachan, 2009; Norton et al., 2005). Affective beliefs tend to be activated more quickly and are, therefore, more accessible in memory than cognitive beliefs (Norton et al., 2005). Additionally, affect regarding condoms is often developed through direct experience with condoms and so is likely more accessible than cognitive beliefs about condoms. Attitudes formed through direct experiences are more accessible (Fazio, Chen, McDonel, & Sherman, 1982; Snyder & Kendzierski, 1982), and attitudes that are more accessible tend to be stronger predictors of behavior (Ajzen, 2001;

Ajzen & Sexton, 1999; Fazio & Williams, 1986). Norton and colleagues (2005) argue that individuals may focus more on their feelings than their thoughts when deciding to use condoms because their direct experience with condoms contributes directly to their feelings about condoms. This suggests that condom use is more emotionally-driven than it is rational.

Specific emotions. Beyond simple considerations of emotional valence, it is evident that individuals may experience a wide range of specific emotions during casual sexual encounters, so it makes sense that they may also feel conflicting emotions about condom use specifically, motivating different behaviors. Norton et al. (2005) found that some people associate condoms with feelings of disgust and ruining the mood, while others associate condom use with comfort, safety, and reassurance. Meta-analytical findings show that men believe that initiating condom use communicates distrust in the partner and lowers intimacy (Norton et al., 2005). These feelings may be justified as Owen and Fincham (2011) found that women perceived that condom use indicated a less serious relational connection or that the partner felt uncomfortable. In their study, women felt more negative and fewer positive emotions following condom use. Additionally, men tend to feel embarrassed when initiating condom use, which lowers their intentions to use condoms in the future (Norton et al., 2005). In fact, when men are worried about feeling embarrassed while using condoms, they are less likely to use them (Norton et al., 2005).

Anticipated emotions. While direct emotional experiences can influence decisions in the situation as it is occurring, feelings linked to health behaviors may also include anticipated affect and affective expectancies related to behavioral outcomes (Hynie, MacDonald, & Marques, 2006). Individuals tend to hold affective associations for a variety of health behaviors, including condom use (Walsh et al., 2012). Anticipated emotions related to a decision should guide the

individual's future behavior (Wang, 2011; Hynie, MacDonald, & Marques, 2006), leading them to engage in the behavior that allows them to avoid anticipated negative emotional consequences (Baumeister, Vohs, DeWall, & Zhang, 2007). Anticipated emotions have been found to be stronger predictors of behavior than other commonly studied influences, specifically those associated with the Theory of Planned Behavior (Sandberg & Connor, 2008). While Fishbein and Ajzen (2010) argue that emotions influence behavioral intentions indirectly through attitudes, norms, and efficacy, meta-analytical results have shown that anticipated emotions predict behavioral intentions over and above these three variables (Sandberg & Connor, 2008). Anticipated emotional responses have been found to directly and positively predict intentions to discuss condom use with a partner (Wang, 2013), as well as intentions to use condoms (Connor, Graham, & Moore, 1999; Richard et al., 1995). In fact, Norton et al. (2005) found that anticipating positive emotions, including pleasure, when using condoms was related to long-term condom use behavior.

The majority of the research related to anticipated emotions regarding health behaviors, however, has focused on negative emotional outcomes. For example, Wang (2011) found that anticipated guilt mediated the impact of attitudes and norms, directly predicting intentions to register as organ donors and discuss organ donation with family members. Regarding safe sex behaviors, anticipating regret about possible outcomes is a stronger predictor of intentions to use condoms and actual condom use than the elements of TPB (Bakker, Buunk, & Manstead, 1997; Richard, de Vries, & van der Pligt, 1998). Additionally, college students who were instructed to think about how they would feel after having unprotected sex reported stronger intentions to use condoms compared to students who were told to think about how they feel about unprotected sex, in general (Richard, van der Pligt, & de Vries, 1996). Furthermore, students who reported

greater intentions to use condoms also expected more negative emotions resulting from unprotected sex, and subsequently reported higher rates of actual condom use.

Self-conscious (Social) emotions. Self-conscious emotions are perhaps the more commonly studied types of emotions in the context of health behaviors. Compared to the basic emotions which have physiological bases (e.g. happiness, sadness, fear), self-conscious (Tracy, Robins, & Tangney, 2007) or social emotions (Buck, 2014) are psychologically complex as they require the ability to engage in self-evaluation (Robins & Schriber, 2009). Keltner and Buswell (1997) argue that self-conscious emotions evolved to aid in social coordination as they are often linked to obtaining social goals, like fitting in or performing well. These emotions allow the individual to evaluate how successful he or she is in terms of achieving the relevant goal or meeting social standards, a skill that does not emerge until later in the developmental cycle (Barrett, 2005; Tangney, 1999). In other words, an individual might recognize that his/her behavior is good or bad, or (in)consistent with social expectations, when these emotions are experienced (Buck, 2014).

The majority of the research on self-conscious emotions focuses on pride, hubris, shame, guilt, and embarrassment (Buck, 2014; Tracy & Robins, 2006). Self-conscious emotions can be distinguished based on the attributions of the behavior to specific or global aspects of the self (Tracy & Robins, 2006). Global attributions refer to positive or negative evaluations of the self as a whole; for example, shame involves a negative evaluation of the self (“I am a bad person”) and hubris involves a positive evaluation of the self (“I am a good person”). Specific attributions, on the other hand, involve positive or negative evaluations of a specific behavior or interaction. Guilt is thought to be the result of a negative behavioral evaluation (“I did a bad thing”), while pride is experienced when the behavior is evaluated positively (“I did a good

thing”). Buck (1988) argues that these emotions do not necessarily require complex cognitive skills; rather, they emerge naturally as a result of attachment or bonding motives. According to this view, individuals are motivated to be loved by others and to follow or exceed the expectations of others. These two social motives parallel the global and specific attributions outlined above: the need to be loved by others reflects a global self-evaluation, while the need to follow expectations (e.g. conform) reflects specific behavioral guidelines. What both conceptualizations have in common is an evaluation of self through social comparison.

Negative self-conscious emotions are likely particularly influential in social comparison situations where individuals want to be perceived as competent social actors, which involves knowing and abiding by the implicit social norms guiding the situation or interaction. This makes sense as negative emotions may act as an indicator for how one is performing in terms of achieving a particular goal (Carver & Scheier, 1990). One goal that is typically salient across interactions is to be accepted by one’s peers, which means engaging in similar behaviors and conveying similar attitudes. Negative self-conscious emotions signal to the individual that s/he has done something wrong and that one’s self or one’s behavior may be judged negatively by others (Hynie, MacDonald, & Marques, 2006). In fact, people report experiencing guilt and shame when their behavior elicits a negative social response, such as violating social norms or shared values (Parker, 1998; Gilbert, 1997; Tangney, 1991). A number of researchers agree that self-conscious emotions are what drive conformity to social expectations because they are so closely linked to perceived social evaluations (Eisenberg, 2000; Manstead, 2000; Hoffman, 1983). Hynie, MacDonald, and Marques (2006) argue that self-conscious emotions may mediate the impact of norms and attitudes on intentions by calling the individual’s attention to potential negative reactions from others if s/he does not conform to their own or others’ expectations.

Self-conscious emotions may be particularly relevant to sexual behaviors among college students for a number of reasons. First, risky sexual behaviors are normative among college students (Garcia et al., 2012; Stinson, 2010; Manning, Longmore, & Giordano, 2005), so individuals may consider how others will judge their behaviors should they violate perceived social norms. College students worry about appearing more “nerdy” or cautious than their peers, increasing their perceived risk of rejection (Sanderson & Yopyck, 2007). Pressure to conform to risky sexual norms is especially problematic because college students tend to overestimate the number of partners and rate of sexual activity of their peers, while underestimating peers’ condom use (Scholly, Katz, Gascoigne, & Holck, 2005). So the concern for acceptance by others may trigger certain emotions, which guide a host of condom (non)use behaviors. For example, one may feel embarrassed for refraining from sex with a new partner, or anticipate feeling embarrassed in initiating condom use, particularly if they think the partner will judge them negatively. In fact, both male and female college students worry about being rejected by their partner if they do not conform to the norms of risky sexual behavior (Fisher, 1988). The stakes for negative social consequences are perhaps even higher if the partner is perceived to be popular and likely to tell others about the encounter, inviting judgment from the larger social group. The result is a normative script where individuals avoid discussing condoms altogether because of the potential discomfort and social repercussions. This concern is so strong that many college students would prefer to forego sex entirely than have a conversation about condoms (Williams, Kimble, Covell, Weiss, Newton, Fisher, & Fisher, 1992; Fisher & Misovich, 1990). Additionally, concern about losing or offending one’s partner has been found to inhibit condom use (Misovich, Fisher, & Fisher, 1997; Miller, Bettencourt, DeBro, & Hoffman, 1993). On the other hand, individuals may consider social consequences of a different kind, where they are

negatively judged by others for engaging in risky behaviors. For example, an individual might anticipate feeling ashamed for hooking up with an unfamiliar partner if s/he expects close others to disapprove of that behavior. An individual may also feel guilty for not using a condom, potentially putting themselves and their partner(s) at risk for infection. Women, in particular, may experience varied emotions due to the conflicting social messages they receive. While they may feel pressure to engage in hookups to please men, women also report feeling confused and guilty after the fact because they have violated stereotypical gender norms (Paul et al., 2000; Edgar & Fitzpatrick, 1993).

Research suggests that people are motivated to avoid experiencing negative emotions like guilt and shame (Carver & Scheier, 1990), meaning our capacity to experience these emotions is adaptive (Eisenberg, 2000; Parker, 1998; Gilbert, 1997; Baumeister, Stillwell, & Heatherton, 1994). People learn that some situations and behaviors are considered undesirable by others, or they come to associate certain behaviors with guilt and shame experiences (Carver & Scheier, 1990). Hynie and MacDonald (2001) found that anticipating guilt and shame that would result from not using condoms was positively related to condom use intentions. Additionally, guilt and shame fully mediated the effect of both norms and attitudes on condom use intentions and actual condom use during the following week. These findings were confirmed by Hynie, MacDonald, and Marques (2006), who also found that the stronger the anticipated negative affect was, the higher the intentions to use condoms were.

To summarize, a growing body of research has continued to demonstrate that emotions have a strong and direct effect on decision-making in a variety of health contexts, particularly those involving sexual encounters. Furthermore, the existing research reiterates the point that the decision to use condoms is heavily influenced by emotions, not only rational processes. Perhaps

most relevant to the current study, however, is the influence of anticipated emotions on condom use behaviors. Research findings suggest that anticipating positive emotional outcomes resulting from condom use, as well as negative emotional outcomes from the lack of condom use can promote future condom use intentions and behaviors, over and above the influence of attitudes, norms, and efficacy. It stands to reason, then, that health messages that communicate potential emotional consequences of condom use or non-use will show message recipients what they can expect to feel in similar situations, thereby allowing them to more accurately label and anticipate their own future emotional outcomes and use that information to make healthier choices.

The effect of emotional education messages is likely to be qualified by normative influences within the messages. Based on existing research, communicators who are perceived to have knowledge or insight into a behavioral norm – or who are perceived to be normative experts – may be more effective in promoting the desired behavior in question when they frame their messages negatively. In other words, a communicator who is perceived to have insight into normative college student behaviors, specifically those surrounding the hookup culture and common sexual practices (like using condoms), is more likely to encourage condom use among similar others when s/he conveys the negative consequences associated with not practicing safe sex. Communicators who are perceived to be low in normative expertise, on the other hand, may be able to utilize positive or negative appeals in their messages. In the case of emotional education messages in this study, positively valenced messages refer to the expression of positive emotional experiences associated with using condoms and negatively valenced messages refer to the expression of negative emotional experiences associated with failure to use condoms. The next section explores the utility of mediated health messages, with a specific focus on how they can be used as health intervention materials.

Targeted Emotional Education Modules as health interventions

Media influences on sexual behaviors. Sexual health is a widespread concern among college students and emerging adults, as they comprise the population most vulnerable to infections and other health concerns (CDC, 2014). Unfortunately, sex is an uncomfortable topic of discussion for people of all ages, making useful sex education and sexual scripts difficult to come by. Many young people turn to the media for information about sex; the media, then, become particularly influential in showing young audiences how to behave and what they can expect during sexual encounters. Television programming and other media content communicate normative information regarding appropriate and inappropriate sexual behaviors (Brown, Halpern, & L'Engle, 2005; Brown, Steele, & Walsh-Childers, 2002). Media characters often model sexual interactions, which provide scripts for how people should behave in sexual encounters (Hust, Brown L'Engle, 2008). Unfortunately, there is a deficit of healthy sexual behaviors modeled in the media – like condom negotiation and use – decreasing the likelihood that viewers adopt healthy sexual behaviors (Hust, Brown, L'Engle, 2008). Furthermore, there is very little sexual health content in the media that targets adolescents; less than 1% of the popular media for this age group portrayed healthy sexual behaviors (Hust, Brown, L'Engle, 2008). These findings are particularly relevant to college students because this is the media they are consuming as they transition into college life, so these are the scripts they bring with them.

Perhaps part of the reason that individuals have a difficult time discussing safe sex and engaging in related behaviors can be attributed to the way in which these behaviors are portrayed in the media. While sex is addressed across media platforms, it is rarely done so in a way that promotes sexual health, according to a content analysis conducted by Hust, Brown, L'Engle (2008). Sexuality and sexual health are often portrayed as funny or embarrassing, especially

among content geared toward young people. This is likely to discourage them from asking appropriate questions as fear of embarrassment may keep young people from seeking sexual health information (Guzman, Schlehofer-Sutton, Villanueva, Dello Stritto, Casad, & Feria, 2003). In addition, content often portrays sex as a goal for males, while females are portrayed as being responsible for the consequences or the prevention of them (e.g. pregnancy, contraception, STI prevention) (Hust, Brown, L'Engle, 2008). Losing one's virginity is often a goal among male characters, an action that will make them popular and revered by their peers. Condoms, however, are rarely discussed, and when they are, they are often used as a comedic device rather than for protection.

This type of content normalizes embarrassment and confusion, causing young people to fear the same experiences should they seek information from others. This is problematic because research shows that communicating about condoms is a crucial first step toward practicing safe sex (Troth & Peterson, 2000; Whitaker, Miller, May, & Levin, 1999). Discussing condom use with sexual partners, friends, and peers has a substantial influence on individuals' actual condom use (Solomon & Dejong, 1989), and talking to friends about condom use is particularly important for college students because friends strongly influence one another; peers can be very influential in motivating one another to end high-risk behaviors (Rittenour & Booth-Butterfield, 2006). Unfortunately, many individuals avoid conversations about condoms because of the perceived potential for negative feedback (Strader, Beaman, & McSweeney, 1992).

As intimated, entertainment media may provide viewers with sexual scripts and opportunities for learning physical, social, and emotional consequences of sexual activities, but this programming may further normalize risky behaviors or lead to confusion if the portrayals are misleading or incomplete. Furthermore, as discussed earlier, the entertainment-education

research suggests that embedding health messages in television content may have a brief impact on knowledge and attitudes, but inconsistent effects on behavioral intentions and actual behaviors (Moyer-Guse, Chung, & Jain, 2011; Farrar, 2006; Collins et al., 2003). Additionally, entertainment-education messages are difficult to implement, regulate, and evaluate making them a costly and risky option for health practitioners. It is clear that we need an option for disseminating health information that effectively utilizes the beneficial elements of entertainment media (e.g. narrative format, interesting characters), but provides viewers with an accurate script for modeling healthy sexual behaviors.

Targeted Emotional Education Modules (TEEMs). Targeted Emotional Education Modules (TEEMs) provide a viable supplement to existing health messages, specifically those that exist in the media. The videos in the current study focus on condom use following a casual sexual encounter with a new partner. The communicators in TEEMs videos are seen discussing the health behavior in question, including the emotions felt during and after the experience. In the current study, the characters' conversation is presented within a larger narrative, in which one character converses with her friend over coffee about meeting a guy at a party the night before. The events of the evening are revealed during the conversation, as are the resulting emotional experiences. The potential benefit of this conversation to viewers is two-fold: viewers see two college students communicating about condom use and they also see the character describing and labeling her emotional experiences. In regards to the former, watching two characters similar to the viewers discussing an encounter that is also familiar to them provides viewers with a script for condom conversations among friends. Additionally, viewers receive normative information as the details of the encounter are revealed, and as the other character responds to the disclosure. Theoretically, viewers will see that it is not only normal to engage in casual sex, but also to

discuss the encounter, including condom use, with friends. Ideally, the conversation modeled by the characters communicates that it is normative to seek information and advice from others, hopefully dispelling the idea that such conversations are embarrassing. Furthermore, viewers see the character experience and label her emotions following her sexual encounter and her decision to use a condom (or not). The labeling of these emotions should help viewers label their own emotions, which should help them anticipate the emotional outcomes of a similar situation. Viewers can use this information to make more informed decisions about condom use, and perhaps even where to seek further information.

TEEMs are intervention videos designed to draw viewers into the storyline, much like entertainment-education narratives, while showing the emotional consequences of health decisions. Buck and Powers (2007) argue that videos are an appropriate format for interventions because individuals seek out videos for emotional education in everyday life. More specifically, video-based interventions have been successful in increasing condom use intentions and behaviors (Sanderson & Yopyck, 2007; Sanderson, 1999). Based on the research reviewed for the current study, it seems that the majority of intervention videos span at least 30 minutes and utilize some combination of information and emotion (see Ferrer, 2009; Sanderson & Yopyck, 2007; Sanderson, 1999). Other researchers, however, have demonstrated that minimal interventions can impact sexual behavior among college students as well (Janssen, de Wit, Hospers, Stroebe, & Kok, 2004; Scholes et al., 2003; Jaworski & Carey, 2001). Brief interventions videos, like TEEMs, are especially useful in targeting college students because they can be presented efficiently and in a variety of formats. College students are familiar with watching brief videos on websites like YouTube, so presenting health information in a similar format should be natural for them. Furthermore, TEEMs focus primarily on the emotions

associated with health decisions, making them a viable supplement to other types of health appeals that focus primarily on presenting information, including facts and figures regarding risk assessment, condom use, and testing for HIV and other STIs (see Sanderson & Yopyck, 2007 for an example). Intervention materials that include emotional approaches usually do so alongside other socio-cognitive approaches (Sanderson & Yopyck, 2007; Ferrer, 2009), making it difficult to disentangle the impact of each. An additional goal of the current study, then, is to compare emotional education interventions that focus on condom use to more imperative intervention messages that are presented in a similar narrative format.

Chapter 5: Pilot Study

The current project set out to examine the effectiveness of an emotional education intervention in promoting attitudes, intentions, and behaviors related to condom use among college students. More specifically, the goal of this study is to demonstrate the benefit of TEEMs as a supplement to more traditional health interventions that utilize imperative techniques that offer advice or issue directives as to what the acceptable behavior should be. Because emotions are stronger predictors of behavior than other influences (Walsh, Kiviniemi, & Rajagopal, 2012; Lawton, Connor, & McEachan, 2009; Norton et al., 2005), and anticipated emotions have direct influence on behavior (Loewenstein & Lerner, 2003), it makes sense that video-based interventions that help viewers identify, label, and anticipate emotions associated with sexual decisions should be effective in promoting desirable behaviors that are motivated by those emotional experiences.

It is possible, however, that condom use could be motivated by the anticipated positive emotional consequences of using a condom *or* the desire to avoid the anticipated negative emotional consequences of not using a condom. The majority of the existing research focuses on

and demonstrates the impact of anticipated negative emotions on intentions to use condoms. Therefore, the following hypothesis was proposed:

H1: Negatively valenced intervention messages will have a stronger protective effect on condom attitudes and intentions than positively valenced intervention messages.

Prior research indicates that normative expertise is an important moderator of social influence, particularly in messages targeting health behaviors (Hall & Blanton, 2009; Stuart & Blanton, 2003). Typically, communicators who are high in normative expertise will be more effective at promoting condom use when they frame their messages negatively, so as not to unintentionally suggest that condom use is out of the ordinary or uncommon among the target population. Communicators who are low in normative expertise, on the other hand, are able to frame their messages positively or negatively with less worry. Prior examination of this moderation hypothesis has shown that normative expertise does interact with the message frame or valence (exhibited through condom use or non-use). In an early examination of TEEMs videos only, normative expertise moderated the effect of message valence on condom use attitudes and intentions (Picklesimer, 2015). When the communicator was high in normative expertise, the negatively valenced message produced greater attitudes toward condoms and intentions to use condoms. When the communicator was low in normative expertise, the positively valenced message produced greater attitudes and intentions to use condoms. Mean differences between positively and negatively valenced messages in the high expertise conditions were not statistically significant, however, so these results should be interpreted with caution. Additionally, normative expertise exhibited a main effect on intentions: condom use intentions were greater when the communicator was high in normative expertise regardless of message valence. These results were found among male participants only; the conditions did not

differentially impact females' attitudes or intentions. Based on significance testing, these findings suggest that a female who is not in tune with social norms regarding sexual activity among college students is more persuasive among males when she talks about using a condom and the associated positive emotional outcomes of that decision. An examination of the means, however, suggests that a female who is in tune with social norms regarding sexual activity is also persuasive when she talks about not using a condom and the associated negative emotional outcomes, which is in line with previous research regarding the moderating role of normative expertise. Based on existing theoretical evidence, the following hypotheses regarding the main and interaction effects of normative expertise were proposed:

H2: Communicators who are high in normative expertise will have a stronger protective effect on condom attitudes and intentions than those who are low in normative expertise.

H3: Normative expertise will moderate the effect of message valence on condom use attitudes and intentions, such that negatively valenced messages will have a stronger protective effect when the communicator is high in normative expertise.

The central focus of the current project is to provide evidence for the effectiveness of emotional education interventions, particularly compared to more traditional imperative styles. Ferrer and colleagues (2011) found support for the effectiveness of interventions with an emotional education component in promoting and sustaining condom use among college students, but additional research needs to be conducted to further substantiate these findings. Given that a growing number of researchers are finding that anticipated emotions predict attitudes and intentions above and beyond other socio-cognitive elements, the following hypothesis is proposed:

H4: TEEMs will be more effective in promoting condom attitudes and intentions than imperative messages targeting safe sex among college students.

Finally, it is possible that males and females will regard the experimental stimuli differently, as the video shows two female characters discussing a casual sexual encounter. Females may find the character to be more similar to them, resulting in more positive evaluations of the source and the message; however, Sanderson and Yopyck (2007) found female communicators to be more persuasive in video interventions than males. Furthermore, the consequences of unprotected sex are different for males and females, as are the responsibilities for acquiring and using a condom. Males are generally perceived to be responsible for acquiring and using the condom, and females are responsible for other forms of contraception (e.g. birth control). While both males and females can contract STIs, making condom use important for both, females are more likely to suffer greater consequences should an unplanned pregnancy result from unprotected sex. Therefore, the following research question is posed:

RQ: Does a safe sex message regarding condom use impact males' and females' condom attitudes and intentions differently?

Method

Participants

A sample of 825 undergraduate students (57% female, 43% male) from a large northeastern university participated in this experiment, following approval from the institution's review board. Participants ranged in age from 18-29, ($M = 19.34$, $SD = 1.31$), and were predominantly from the United States (92%). The majority of the participants were either single (62.8%) or in a monogamous sexual relationship (26.3%), followed by dating and having casual sex with multiple people (8.3%), in a monogamous relationship without sex (2.2%), casually

dating without sex (.4%), and one individual in the sample was married. Most of the participants reported having zero (25.2%) or one (34.1%) sexual partner in the last year, but 7.3% of the sample met the criteria for risky sexual behavior, with five or more sexual partners over the past year (Finnerty-Myers, 2011; Turchik & Garske, 2009). Following the demographic questions, participants were randomly assigned to eight conditions corresponding to the intervention messages described below. All students received course credit for participating.

Design and procedure

A 2 (message style) x 2 (message valence) x 2 (normative expertise) post-test with follow-up experimental design was used to examine the effects of positive and negative emotions and normative expertise in both emotional education and imperative safe sex interventions on condom use attitudes and intentions. Participants were randomly assigned to view one of eight videos. Two emotional education videos promoted condoms using either high or low normative expertise actors, and the other two criticized lack of condom use with either high or low normative expertise actors. The four imperative videos differed in the same manner. Each video was created using the same two female actors. While there are potential limitations to using female-only characters, Sanderson and Yopyck (2007) found female communicators of safe sex messages were more persuasive than male communicators; both male and female participants who viewed a female communicator reported more consistent condom use in the following three months. Therefore, male and female participants in the current study should not respond differently to the safe sex messages as a result of viewing female characters.

Before viewing the video, participants were asked to respond to a number of demographic items, and to indicate their relationship status and number of sexual partners over the past year. Participants were then presented with the video stimulus, followed by measures of

perceived normative expertise, rational and affective processing, emotional response, post-message attitude toward condoms, and intentions to use condoms. An online survey website was used to present the stimuli and collect the data.

Materials

Eight intervention videos were created that portray two average female college students talking in a coffee shop about a party the night before. Each video was presented to participants as a scene in an upcoming independent film to avoid sensitization to the purpose of the study. As the conversation unfolds, viewers learn that one of the characters met a male student from a different school at the party and ended up going home with and having sex with him.

There are two primary manipulations across the four emotional education videos and the four imperative videos. In the high normative expertise conditions, the main character conveys insight into typical college student behaviors on campus at two points in the conversation. First, she discusses popular bars in the area, and mentions feeling comfortable at the party and having a good time, which communicates that she is in tune with the behaviors of the student body and hangs out at popular places. Later, she discusses her prior experiences “hooking up with” different partners, suggesting that she has experience with casual sex and related behaviors. In the low normative expertise conditions, the same character conveys that she felt uncomfortable at the party, she does not go out very often, and she often has a hard time understanding how other college students have the time to do so. She also indicates that she has only had sex with two previous boyfriends, making this her first casual sexual experience. The second manipulation changes the decision to use or not use a condom, and the valence of the message that results from that decision. When a condom was used, the character speaks positively of her decision and encourages condom use in the future. When a condom was not used, the character speaks

negatively, criticizing the lack of condom use. The only other manner in which the videos differed involves the approach or style of the intervention message. In the emotional education videos, the character expresses positive emotions when a condom was used, including relief and pride that she used a condom, as well as excitement at the spontaneity of the encounter. Overall, the character communicates an air of satisfaction. When a condom was not used, however, the character expresses shame and disappointment in herself, as well as frustration with the partner. She mentions feeling anxious after the encounter, and discusses the compulsion to shower when she got home because she felt “icky.” In the imperative videos, the character does not use any emotion words, instead offering advice to the other character. When a condom was used, the character tells her friend that she made a smart decision and suggests that she always do the same. When a condom was not used, the main character describes the decision as foolish and advises her friend to always use a condom.

Measures

Perceived normative expertise. Perceived normative expertise was measured as a manipulation check. Hall & Blanton (2009), utilized two items to gauge the character’s insight into sexual behaviors that occur among her peers and at parties on campus. The items include “How knowledgeable do you think this character is about common sexual practices on her campus?” and “How knowledgeable do you think this character is about the romantic and sexual behaviors that occur during and after parties on her campus?” Responses were measured on a seven-point Likert scale, ranging from *Not at all Knowledgeable* (1) to *Extremely Knowledgeable* (7).

Rational and affective processing. Previous research has examined both rational and affective processing as an indicator of involvement in consumer purchase intentions (Chaudhuri,

1993) and involvement in dramatic narrative film (Stifano, 2012). Chaudhuri and Buck (1993) created a six-item measure to assess both affective and rational dimensions of involvement, which is the measure that was adapted to fit the purposes of the current study. Three items assess rational processing: “The scene is thought-provoking,” “The scene is intellectually stimulating,” and “The scene made me think.” Three items assess affective processing: “The scene is emotionally engaging,” “The scene is moving,” and “The scene made me feel something.” All responses were measured on a seven-point Likert scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (7). Both measures exhibited good (and identical) reliability ($\alpha = .86$).

Emotional responses. Emotional responses to the stimuli was assessed using the Emotional Gratifications (EGRATS) scale (Strizhakova, Kang, & Buck, 2007). Participants were asked to indicate how often they experienced each of 35 emotions while viewing the scene. Emotions include Powerful, Ashamed, Sexy. All responses were measured on a seven-point Likert scale, ranging from *Never* (1) to *Always* (7).

Attitudes toward condoms. Attitudes toward condom use were measured using a 12-item Likert scale adapted from the Contraceptive Attitude Scale (Kyes, 1998). Responses were measured on a seven-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (7). Example items include “I believe that it is wrong to use condoms” and “I would not become sexually involved with a person who did not want to use condoms.” The measure exhibited good reliability ($\alpha = .89$).

Intentions to use condoms. Intentions to use condoms were measured using a four-item Likert scale that the researcher adapted per the recommendations of Ajzen (2002) and Wong & Capella (2009). Responses were measured on a seven-point Likert scale, ranging from Very

Unlikely (1) to Very Likely (7). Participants were asked to indicate the likelihood of engaging in a variety of behaviors related to condom use during the next four months. Example items include “During the next two months, if you engage in sexual intercourse, how likely is it that you will insist on using a condom with your sexual partner under any circumstances” and “During the next two months, if you engage in sexual intercourse, how likely is it that you will seek further information about condom usage and contraception online?” Responses were measured on a seven-point Likert scale, ranging from *Very Unlikely* (1) to *Very Likely* (7). The measure exhibited acceptable reliability ($\alpha = .75$).

Disposition toward risky behaviors. Ten items were created to measure general risk-taking behaviors, and were included at the end of the survey. Three of the items refer to risky sexual behaviors, which provide a baseline measure of current sexual experience, attitudes, and behaviors. The other seven items are included as foil items to prevent familiarization with the purpose of the study. Example items include “I frequently engage in casual sex with different partners” and “I have used recreational drugs on numerous occasions.” The measure exhibited acceptable reliability ($\alpha = .75$).

Results

Homogeneity of subgroups

To ensure homogeneity across all conditions, one-way analysis of variance was conducted across continuous demographic variables, and a chi-square test for homogeneity was conducted across categorical variables. Conditions did not significantly differ on demographic variables, such as participants’ sex [$\chi^2 (7) = 11.33, p = .13$], nationality [$\chi^2 (7) = 8.05, p = .33$], level of religiosity [$F (7, 805) < 1, p = .55$], relationship status [$F (7, 814) < 1, p = .60$], or number of sexual partners over the past year [$F (7, 813) < 1, p = .45$].

Factor analysis

An exploratory factor analysis was conducted to examine the factor structure underlying responses to the EGRATS scale, which examined the emotional reactions to the stimulus materials. The principal components analysis with varimax rotation yielded four discrete factors: Sex and Power ($\alpha = .97$), Negative Social and Individualistic ($\alpha = .94$), Sympathy ($\alpha = .78$), and Curiosity ($\alpha = .76$). There were 18 sex and power emotions, including sexy, erotic, and aggressive, as well as positive emotions related to love, satisfaction, and happiness. Eleven negative emotions were comprised of social emotions including shame, guilt, and embarrassment, and individualistic emotions including hatred, nervous, and scornful. Sympathy and curiosity were each comprised of three items, including sympathy, interest, and pity, and curious, inquisitive, and compassionate, respectively. The Kaiser-Meyer-Olkin measure of sampling adequacy was .97, and Bartlett's test of sphericity was significant [$\chi^2 (595) = 23136.00$, $p < .01$].

Exploratory factor analyses were also conducted to examine the potential factor structure underlying the condom attitudes and intentions measures. A principal components analysis with varimax rotation yielded three factors within the condom attitudes measure: Personal Attitudes (six items, $\alpha = .89$), Beliefs (four items, $\alpha = .82$), and Drawbacks (two items, $\alpha = .62$). The first factor was comprised of personal attitudes toward condoms, including "I feel more relaxed during intercourse if a condom is used" and "I would insist on using a condom even if my partner did not want to use one." The items in the beliefs factor were value-laden statements, including "I believe it is wrong to use condoms" and "Partners should talk about condom usage before having intercourse." Lastly, the drawbacks focused on negative impacts on intimacy and pleasure, and included "Condoms make sex seem less intimate" and "Condoms make intercourse

seem too planned.” The Kaiser-Meyer-Olkin measure of sampling adequacy was .91, and Bartlett’s test of sphericity was significant [χ^2 (66) = 4900.23, $p < .01$]. The same analysis yielded two factors within the condom use intentions measure: Partner Intentions (two items, $\alpha = .77$) and Information Intentions (two items, $\alpha = .83$). Partner intentions focused on negotiating condom use with the partner and included “Insisting on using a condom with your partner under any circumstances” and “Discussing whether or not to use a condom with your partner before engaging in intercourse.” Information intentions focused on seeking information or advice from others outside the relationship, including “Talking to someone (friend or family member) about how to ‘bring up’ the condom conversation with a partner” and “Seeking further information about condom usage and contraception online.” The Kaiser-Meyer-Olkin measure of sampling adequacy was .62, and Bartlett’s test of sphericity was significant [χ^2 (6) = 1103.23, $p < .01$]. Further analyses indicated that it was not necessary to examine condom attitudes as distinct factors, so attitudes were treated as a unidimensional measure. The two intentions factors were distinctly related to variables of interest, however, and were treated as separate constructs in future analyses.

Hypothesis testing

First, a t-test was conducted to ensure that the normative expertise manipulation was successful and regarded as intended. The normative expertise manipulation variable was effect coded, with high normative expertise coded as 1 and low normative expertise coded as -1. Results revealed that the normative expertise manipulation was successful: participants in the high normative expertise conditions ($M = 4.63$, $SD = 1.27$) did perceive the communicator to be higher in normative expertise [t (816) = 4.94, $p < .01$] than participants in the low normative

expertise conditions ($M = 4.16$, $SD = 1.45$). Further, Cohen's effect size value ($d = .34$) indicated a moderate practical significance.

Next, to test the hypotheses and examine possible sex differences, a univariate analysis of variance was conducted to examine the main and interaction effects of participant sex, message style, message valence, and normative expertise on attitudes toward condoms and intentions to use condoms. Message valence, message style, and participant sex were also effect coded: Positive message valence (the communicator used a condom) was coded 1, negative message valence (the communicator did not use a condom) was coded -1; the TEEM message was coded 1, the imperative message was coded -1; and male sex was coded 1, female sex was coded -1. Results from the GLM procedure yielded a significant four-way interaction effect on attitudes toward condoms [$F(1, 815) = 5.37$, $p < .05$, partial $\eta^2 = .01$], and a significant three-way interaction effect among sex, message style, and normative expertise on behavioral intentions [$F(1, 806) = 3.97$, $p < .05$, partial $\eta^2 = .01$]. The significant interactions suggest that the messages affected males and females differently, answering the research question; therefore, data was analyzed for males and females separately.

The first hypothesis predicted negatively valenced intervention messages would have a stronger protective effect on condom attitudes and intentions than positively valenced messages. This hypothesis was not supported; negatively valenced messages were not significantly more effective than positively valenced messages in influencing condom attitudes among males [$F(1, 343) < 1$, $p = .76$] or females [$F(1, 457) < 1$, $p = .66$], or intentions among males [$F(1, 345) = 2.58$, $p = .11$] or females [$F(1, 461) < 1$, $p = .52$].

The second hypothesis predicted communicators who are high in normative expertise would have a stronger protective effect on condom attitudes and intentions than those who are

low in normative expertise. This hypothesis was not supported; normative experts were not significantly more effective than non-experts in influencing condom attitudes among males [$F(1, 343) < 1, p = .37$] or females [$F(1, 457) < 1, p = .72$], or intentions among males [$F(1, 345) = 2.41, p = .12$] or females [$F(1, 461) < 1, p = .47$].

The third hypothesis predicted normative expertise would moderate the effect of message valence on condom use attitudes and intentions, such that negatively valenced messages would have a stronger protective effect when the communicator is high in normative expertise. This hypothesis was not supported; the interaction between message valence and normative expertise did not significant impact attitudes among males [$F(1, 343) < 1, p = .44$] or females [$F(1, 457) < 1, p = .74$], or intentions among males [$F(1, 345) = 1.13, p = .29$] or females [$F(1, 461) = 1.72, p = .19$].

The fourth hypothesis predicted TEEMs would be more effective in promoting condom attitudes and intentions than imperative messages. This hypothesis was not supported; TEEMs were not significantly more effective than imperative messages in influencing condom attitudes among males [$F(1, 343) < 1, p = .34$] or females [$F(1, 457) < 1, p = .66$], or intentions among males [$F(1, 345) < 1, p = .85$] or females [$F(1, 457) < 1, p = .42$].

While the proposed hypotheses were not supported, additional analyses show relationships between the experimental manipulations and other variables that link the manipulations to condom attitudes and intentions. First, a three-way interaction between normative expertise, message valence, and message style on condom attitudes was found among males in the sample [$F(1, 343) = 4.46, p < .05$, partial $\eta^2 = .01$], suggesting that females did not respond significantly differently to the manipulations, but males in the sample did. When the communicator was high in normative expertise, males held more positive attitudes toward

condoms after viewing an imperative video, regardless of whether or not the communicator used a condom. Specifically, when the communicator was a normative expert and used a condom, males held more positive attitudes after viewing the imperative message ($M = 5.10$, $SD = .94$) compared to the TEEM ($M = 4.86$, $SD = 1.09$); the same pattern was found when the normative expert did not use a condom and delivered an imperative message ($M = 5.04$, $SD = .92$) compared to a TEEM ($M = 5.03$, $SD = 1.29$). When the communicator was low in normative expertise and used a condom, males held more positive attitudes toward condoms when the communicator delivered an emotional education message ($M = 5.10$, $SD = .74$) compared to the imperative message ($M = 4.83$, $SD = 1.07$). When the communicator was low in normative expertise and did not use a condom, however, the imperative message ($M = 5.07$, $SD = .98$) was more effective than the emotional education message ($M = 4.63$, $SD = 1.19$). Across conditions, males responded more positively toward the imperative message than the TEEM, except for those who viewed a non-expert who used a condom. It is interesting to note that females in the sample responded in a nearly opposite manner. Across conditions, females responded more positively toward the TEEM than the imperative message, except for those who viewed a normative expert who did not use a condom: when the communicator was high in normative expertise and did not use a condom, the imperative message ($M = 5.78$, $SD = 1.04$) produced more positive attitudes toward condoms among female respondents than the TEEM ($M = 5.53$, $SD = .91$). The one thing that males and females do agree on, then, is that low expertise communicators who use a condom are more effective in promoting attitudes toward condoms when they deliver an emotional message.

Second, a three-way interaction between participant sex, normative expertise, and message style was found on condom use intentions [$F(1, 806) = 3.97$, $p < .05$, partial $\eta^2 = .01$].

Further examination of condom use intentions revealed that it was more useful to examine the intentions as two factors, one related to advice- and information-seeking from third parties and one related to discussing and using condoms with the partner. The three-way interaction was likely driven by intentions related to advice- and information-seeking [$F(1, 806) = 5.29, p < .05$, partial $\eta^2 = .01$]. Across conditions, the means for discussing and using condoms with the partner were above the midpoint on the scale, and did not differ significantly, suggesting the manipulations did not significantly differentially impact intentions to discuss condom use with a partner. In regards to seeking information outside the relationship, the manipulations did significantly differ in their impact on intentions, but the means were relatively low, below the scale midpoint. Again, males and females showed an opposite pattern in response to the manipulations. Females who viewed a low expertise communicator reported greater intentions to seek information and advice when the message was emotional ($M = 3.64, SD = 1.89$) compared to imperative ($M = 3.48, SD = 1.96$); when the communicator was high in expertise, females reported greater intentions when the message was imperative ($M = 3.45, SD = 1.83$) compared to emotional ($M = 3.33, SD = 1.89$). On the other hand, males who viewed a low expertise communicator, reported greater intentions when the message was imperative ($M = 3.17, SD = 1.64$) compared to emotional ($M = 2.75, SD = 1.60$); but when the communicator was high in expertise, males reported greater intentions when the message was emotional ($M = 3.43, SD = 1.85$) compared to imperative ($M = 2.94, SD = 1.76$). It is important to note that females' intentions to talk to the partner and seek information and advice from third parties followed the same pattern, which was not true among males. Males had similar intentions across message style conditions to talk to the partner and seek additional information when the communicator was low in normative expertise; when the communicator was high in expertise, however, the

imperative message promoted talking with the partner, while the TEEM promoted seeking additional information and advice.

Third, rational processing of the message was found to correlate with the manipulations, a number of the emotional responses, and the dependent variables of interest, suggesting it might be an important mediator, helping to clarify the relationships between the manipulations and the outcome variables. Further analyses showed a main effect of message valence on rational processing of the message [$F(1, 822) = 7.25, p < .01$, partial $\eta^2 = .01$], but this was qualified by a four-way interaction among participant sex, normative expertise, message valence, and message style [$F(1, 822) = 3.54, p < .05$, partial $\eta^2 < .01$]. Males and females were examined separately, which revealed that significant differences only appeared among female participants. Among females, a significant three-way interaction among normative expertise, message valence, and message style was found to impact rational processing [$F(1, 469) = 5.96, p < .05$, $\eta^2 = .01$]. The TEEM promoted rational processing of the message in two conditions: when the communicator was low in normative expertise and a condom was not used ($M = 4.41, SD = 1.31$) and when the communicator was high in normative expertise and a condom was used ($M = 3.96, SD = 1.41$). On the other hand, the imperative message promoted rational processing when the communicator was low in normative expertise and used a condom ($M = 4.14, SD = 1.47$) and when the communicator was high in normative expertise and did not use a condom ($M = 4.28, SD = 1.60$). This latter result is consistent with existing research regarding the moderating role of normative expertise, which suggests that normative experts should frame their messages negatively, while non-experts have more freedom to move between frames.

It is important to note that across all conditions, rational processing increased when the communicator did not use a condom, except among males who viewed a TEEM with a low

normative expertise communicator. Among these participants, rational processing improved when a condom was used. While the mean differences between conditions were not significant among males, it is worthwhile to note that this group responded opposite of the rest of the participants in the sample.

Lastly, the emotional response factors all correlated positively and significantly with rational processing of the message (Sex and Power: $r = .36, p < .01$; Negative: $r = .36, p < .01$; Sympathy: $r = .55, p < .01$; and Curiosity: $r = .44, p < .01$). Additionally, all emotional factors were correlated significantly and negatively with attitudes toward condoms (Sex and Power: $r = -.31, p < .01$; Negative: $r = -.18, p < .01$; Sympathy: $r = -.08, p < .05$; and Curiosity: $r = -.12, p < .01$). Together, these findings suggest that the more participants felt following the video, the more they thought about the video, but the less positively they viewed condoms. Furthermore, while intentions to discuss and use condoms with a partner were negatively related to Sex and Power Emotions ($r = -.17, p < .01$) and Negative Emotions ($r = -.09, p < .05$), intentions to seek information and advice from a third party were positively related to all emotion factors (Sex and Power: $r = .20, p < .01$; Negative: $r = .20, p < .01$; Sympathy: $r = .15, p < .01$; and Curiosity: $r = .19, p < .01$).

Additional analyses were conducted to examine how the manipulations impacted emotional responses. Results from a univariate GLM procedure revealed that participant sex [$F(1, 760) = 49.88, p < .01$, partial $\eta^2 = .06$] and message style [$F(1, 760) = 4.68, p < .05$, partial $\eta^2 = .01$] had significant main effects on Sex and Power emotions. Males ($M = 2.59, SD = 1.31$) reported experiencing more Sex and Power emotions than females ($M = 1.97, SD = 1.07$), and the imperative messages ($M = 2.37, SD = 1.25$) produced more of these emotions than the TEEM ($M = 2.18, SD = 1.16$).

Similar analyses revealed a main effect of participant sex [$F(1, 791) = 5.78, p < .05$, partial $\eta^2 = .01$] and message valence [$F(1, 791) = 20.25, p < .01$, partial $\eta^2 = .03$] on the Negative emotional responses, as well as a two-way interaction between message valence and message style [$F(1, 791) = 4.98, p < .05$, partial $\eta^2 = .01$]. After viewing the videos, males ($M = 2.59, SD = 1.28$) felt more negative emotions compared to females ($M = 2.37, SD = 1.20$), and participants felt more negative emotions when the communicator did not use a condom ($M = 2.68, SD = 1.22$) compared to when she did use a condom ($M = 2.28, SD = 1.22$). Message style moderated the effect of message valence, such that when a condom was not used, the TEEM ($M = 2.76, SD = 1.26$) promoted more Negative emotions than the imperative message ($M = 2.60, SD = 1.19$); when a condom was used, however, the imperative message ($M = 2.40, SD = 1.30$) led to more Negative emotions than the TEEM ($M = 2.16, SD = 1.14$).

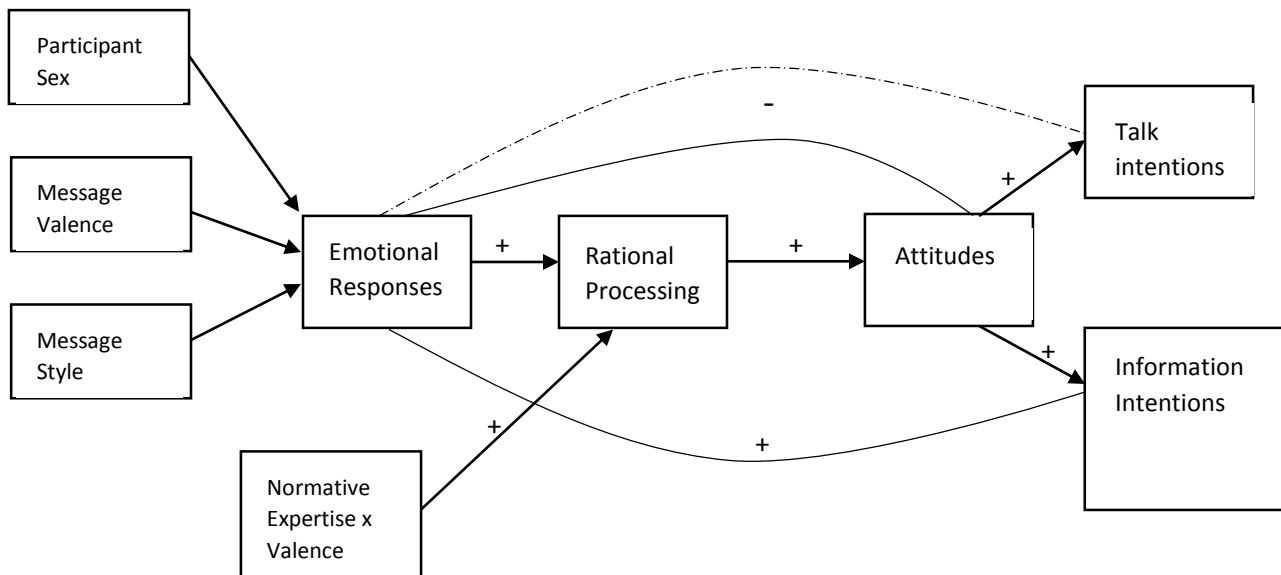
Furthermore, a main effect of participant sex [$F(1, 820) = 10.38, p < .01$, partial $\eta^2 = .01$] and message valence [$F(1, 820) = 19.24, p < .01$, partial $\eta^2 = .02$] were found to impact the Sympathy emotions. After viewing the video, females ($M = 3.83, SD = 1.35$) felt more Sympathy emotions than males ($M = 3.53, SD = 1.28$). Likewise, the communicator who did not use a condom ($M = 3.89, SD = 1.28$) produced more Sympathy emotions than the communicator who used a condom ($M = 3.48, SD = 1.34$). Additionally, a two-way interaction between participant sex and message style [$F(1, 820) = 5.07, p < .05$, partial $\eta^2 = .01$] emerged, but was qualified by a four-way interaction among all manipulations [$F(1, 820) = 7.31, p < .01$, partial $\eta^2 = .01$]. Among female participants, the TEEM produced more Sympathy emotions except among those who viewed a low normative expertise communicator who used a condom; in this condition, the imperative message ($M = 3.89, SD = 1.31$) led to more Sympathy responses than the TEEM ($M = 3.45, SD = 1.40$). Among male participants, the imperative message produced

more Sympathy emotions except among those who viewed a normative expert who did not use a condom; in this condition, the TEEM ($M = 3.76$, $SD = 1.10$) led to more Sympathy responses than the imperative message ($M = 3.70$, $SD = 1.21$).

Finally, a main effect for participant sex was discovered for Curiosity emotions [$F(1, 805) = 13.39$, $p < .01$, partial $\eta^2 = .02$]. After viewing the video, males ($M = 3.04$, $SD = 1.38$) reported more Curiosity compared to females ($M = 2.68$, $SD = 1.35$).

These findings show that while it is unclear how each manipulation impacts the dependent variables of interest, each manipulation does have an important individual or combined influence on the overall processing of the message. Considering these findings in relation to the existing literature regarding information processing, a model was tested to examine this process in more detail. Based on the relationships identified above, the following model was tested:

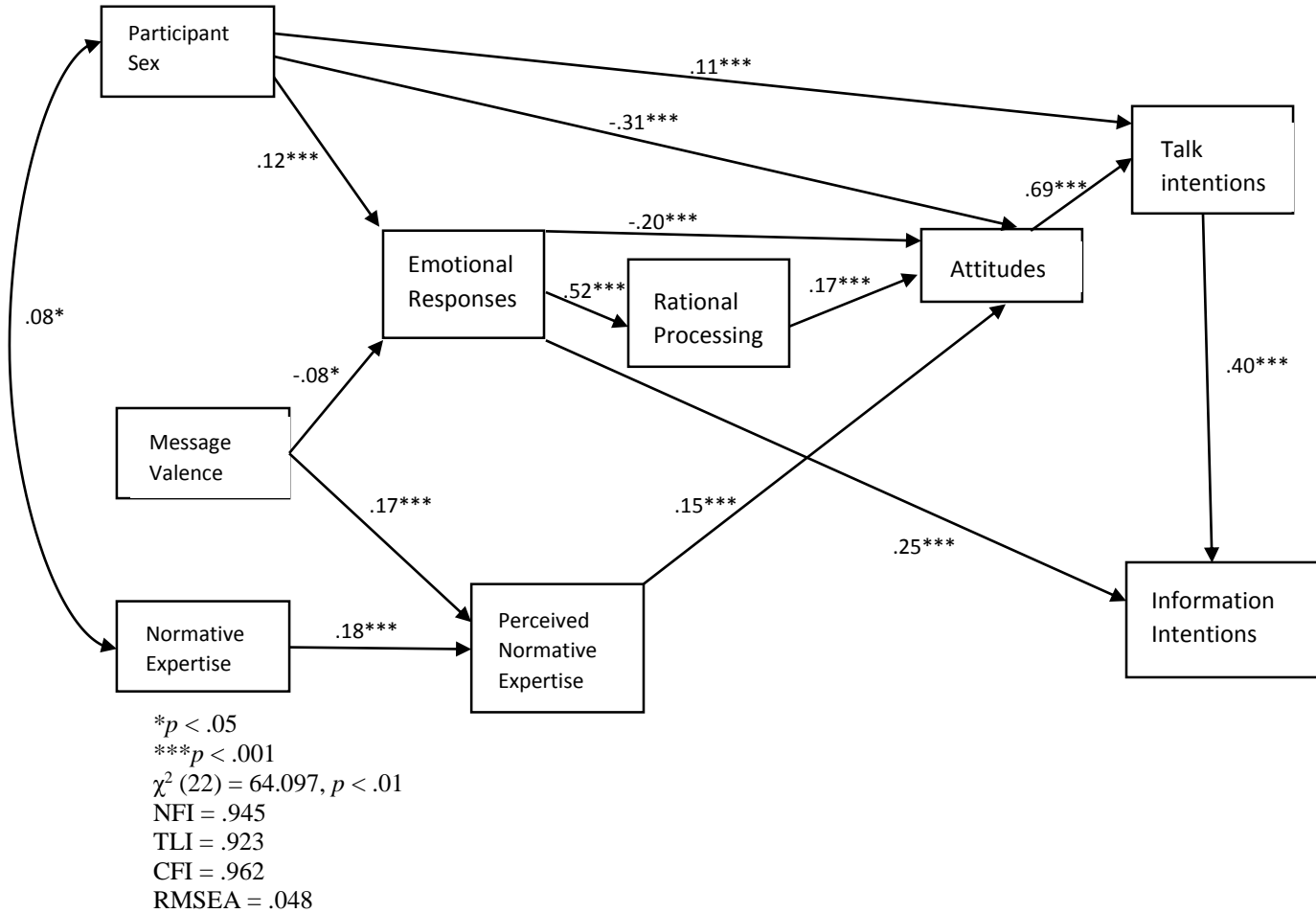
Figure 2. Pilot study hypothesized model



Using IBM SPSS Amos (Version 22), a path analysis was conducted using maximum likelihood estimation. Results indicated that message style did not impact emotional responses

to the message, so that path was subsequently removed. The interaction between normative expertise and message valence did not significantly impact rational processing or any other variables in the model, but perceived normative expertise alone was predicted by positive message valence (the character used a condom) and subsequently predicted attitudes toward condoms. Both male sex and negative message valence (the character did not use a condom) predicted emotional responses, which subsequently positively predicted rational processing of the message and information-related intentions and negatively predicted attitudes toward condoms. Furthermore, emotional responses had no direct effect on partner-related intentions; this relationship was instead fully mediated by rational processing of the message and attitudes toward condoms, confirming analyses described above. To improve model fit, two direct paths were added from participant sex to attitudes toward condoms and partner-related intentions. Consistent with much of the existing research, female sex predicted more positive attitudes toward condoms; male sex predicted increased partner-related intentions, however, which is consistent with the analyses described previously. Lastly, a path was added from partner-related intentions to information-seeking intentions, which makes good theoretical sense, as those who are likely to talk to their partner about condom use may also seek information and advice from third party sources. Therefore, the final model and relevant fit indices are as follows:

Figure 3. Pilot study revised model.



Pilot Study Discussion

The four hypotheses proposed in the pilot study predicted direct effects of the manipulations on the key dependent variables, condom attitudes and intentions. Additional analyses revealed a more complex process, in which effects were mediated by emotional responses to the stimuli and rational processing of the message. Furthermore, message style did not significantly impact any of the mediating or outcome variables, nor did it interact with any of the other manipulations. Therefore, addressing the limitations of the pilot study is necessary in

explaining the relationships that were uncovered, as well as identifying elements to improve upon in the current study.

The first limitation involves a failure to measure participants' perceptions of the message valence and message style manipulations. A manipulation check was conducted to ensure that participants regarded the normative expertise manipulation as intended, and that perceived variable did, in fact, directly predict attitudes toward condoms. Thus, participants who perceived the character to have insight into the norms regarding sexual behavior and condom use reported more positive attitudes toward condoms. Interestingly, positive message valence predicted perceptions of normative expertise as well, suggesting that viewing a communicator who used a condom promoted perceptions of normative expertise. Normative expertise did not interact with message valence as predicted, but perceptions of message valence were not measured.

Therefore, the current study will include a measure of message fame perceptions, which will allow for the creation of an interaction term using two truly continuous variables, rather than examining the interaction of the manipulations. Additionally, the manipulation check will ensure that participants understood that the character felt negative emotions when not using a condom and felt positive emotions when using a condom. The association of condom (non)use with the emotions conveyed by the communicator is crucial to interpreting the message in the manner it was intended.

Similarly, the current study will also include a measure of message style perceptions. Message style did not directly impact the key outcome variables or any mediating variables in the pilot study. It is possible that this manipulation was not strong enough to induce variance in the responses. In both the TEEM and the imperative videos, the condom use message was embedded in a conversation within the narrative. Both messages were the same except the

communicator explicitly discussed her emotions in the TEEM (e.g. I'm frustrated), and she explicitly issued a directive in the imperative (e.g. Always use a condom). Regardless of whether emotions or directives were explicitly stated, the health message was embedded in an entertainment narrative and it is likely that emotion was communicated, rendering the difference between the two styles negligible. So in addition to improving the ability to examine direct and interaction effects, measuring perceptions of the message style will allow for the ability to detect whether or not the participants tuned into the difference between the TEEM and the imperative message.

A second limitation of the pilot study was the cross-sectional design, which only allowed for the measurement of condom attitudes and intentions immediately following exposure to the stimulus. While behavioral intentions have been shown to be reliable predictors of actual behavior (Ajzen, 1991), there are some cases in which intentions and behaviors do not always match. For example, Farrar (2006) found that while individuals reported similar intentions to use condoms after exposure to entertainment programming in which condom use was portrayed or not, they did not actually engage in safer behaviors at follow-up. On the other hand, Moyer-Guse, Chung, and Jain (2011) found that exposure to entertainment programming that portrayed STI testing discussions and behaviors did not improve intentions to engage in those behaviors, but did improve actual discussions about STIs and screening behaviors at follow-up. Individuals may have intentions to engage in safer behaviors, but fail to follow through in the actual moment, as in the first example, or there could be a sleeper effect in which the message impacts future behaviors, but not necessarily anticipated intentions. The current study aims to reconcile this discrepancy by measuring condom attitudes and intentions following exposure to the stimulus and actual condom use behaviors one month after exposure.

Additionally, message style did not have an effect on attitudes or intentions in the pilot study. It is possible that while there were no differences between the TEEM and the imperative message immediately after exposure to the message, these styles could differentially impact condom use behaviors over time. Participants may not necessarily remember the arguments made in the imperative message, but remember the emotions expressed by the communicator. If emotional education was effective in the TEEM, then, participants should be able to anticipate the emotions associated with condom (non)use, thereby influencing actual condom use behaviors. In fact, in their longitudinal comparison of safe sex interventions with and without an emotional education element, Ferrer and colleagues (2011) found that condom use improved among those who were exposed to the intervention that included an emotional education element, but only at six months. Differences among the interventions were not significant at baseline or three months following exposure. Therefore, one of the primary goals of the current study is to examine long-term differences between the TEEM and the imperative message on actual condom use behavior.

A third limitation of the pilot study involves the measurement of both condom attitudes and intentions. Condom-related attitudes and intentions likely consist of different dimensions, and these dimensions can differentially impact decision-making. For example, an individual might hold an attitude that condoms decrease the intimacy and spontaneity of sex, while also holding the attitude that condoms are effective at preventing pregnancy and STIs. While the latter attitude is positively valenced, perhaps promoting condom use, the former is a commonly reported attitude and reason for not using condoms (Norton et al., 2005). Similarly, there are various behaviors related to condom use, including acquiring condoms, discussing and negotiating condom use with a partner, and actually using condoms. Many individuals report not

using condoms because they fear discussing condom use with a partner (Williams et al., 1992; Fisher & Misovich, 1990), while others fail to use condoms because they were not readily available at the time of the encounter (Bryan, Fisher, & Fisher, 2002). Therefore, to address these potentially conflicting attitudes and behaviors, two new measures are included in the current study. These measures are described in further detail in the methods section below.

One final limitation that potentially obscured results in the pilot study involves a lack of understanding of participants' perceptions of the norms regarding sexual behaviors, as well as perceptions of their own normative expertise. Based on previous research, it was assumed that participants in the pilot study sample perceived risky sexual behavior to be normative, but without measuring these perceptions, it is impossible to be sure. Additionally, there may be different perceived norms for condom use with casual partners and romantic partners, which could influence participants' attitudes, intentions, and behaviors related to condom use. The current study employed a measure of condom use norms and motivation to comply with those norms regarding condom use in romantic and casual relationships. Furthermore, as college students, participants might perceive themselves to be normative experts with accurate insight into behavioral norms regarding sex and condom use. In fact, they might perceive themselves to be better experts than the communicator in the video, which could lead them to discount the safe sex message altogether. Therefore, in an attempt to account for this potential confound, the current study included a measure of the participants' normative self-expertise. All measures are discussed in detail in the methods section below.

Chapter 6: Current Study

The current project set out to improve upon the limitations of the pilot study in an attempt to disentangle the effects of message narrativity or style, message valence, and normative expertise in narrative health interventions in promoting attitudes, intentions, and behaviors

related to condom use among college students. The goal of both studies has been to demonstrate the benefit of TEEMs as a viable alternative to health messages that offer advice or issue directives regarding a particular health behavior, as evidence suggests that emotions are stronger predictors of behavior than other influences (Walsh, Kiviniemi, & Rajagopal, 2012; Lawton, Connor, & McEachan, 2009; Norton et al., 2005). The goal of TEEMs are to help viewers identify, label, and anticipate emotions associated with sexual decisions so they can use that emotional information to make healthier decisions, rather than acting on the emotions impulsively. Based on the results from the pilot study, it is assumed that emotional responses to the stimuli promote rational processing of the message, which in turn, promotes healthy attitudes and behaviors. In other words, the more participants felt after viewing the message, the more they thought about the message. Ideally, this process leads to actual condom use behaviors.

It is likely that condom use is motivated by anticipated negative emotions, or the desire to avoid the negative emotional consequences of not using a condom. The majority of the existing research focuses on and demonstrates the impact of anticipated negative emotions on intentions to use condoms, and preliminary analyses support prior research findings. Prior testing of the intervention videos showed that negatively valenced messages were not necessarily more effective in directly promoting attitudes toward condoms or intentions to use condoms, but they were more effective at promoting rational processing of the messages among all participants across all conditions except one (explained below). Rational processing was found to be a significant, albeit small predictor of attitudes toward condoms ($\beta = .17, p < .01$), so it is possible that message valence indirectly impacts condom attitudes through rational processing of the message. In other words, viewers tended to think more when they saw a message in which a female communicator did not use a condom in a sexual encounter. Perhaps viewers thought

about the social, emotional, and health consequences associated with not using a condom, or perhaps they thought about their own similar experiences and the condom use decisions previously made or will make in the future. Furthermore, preliminary analyses revealed that males are more likely to experience negative emotions after watching the intervention videos, while females were more likely to experience emotions related to sympathy and pity. The current study hopes to provide further support to the existing theoretical evidence that suggests that anticipating negative outcomes has a greater effect on attitudes and behaviors toward condom use. Therefore, the first hypothesis is as follows:

H1: Negatively valenced intervention messages will have a stronger protective effect on condom attitudes, intentions, and behaviors than positively valenced intervention messages.

Normative expertise has previously been found to be a moderator of social influence, particularly in messages targeting health behaviors (Hall & Blanton, 2009; Stuart & Blanton, 2003). Communicators who are high in normative expertise tend to be more effective at promoting condom use when they frame their messages negatively, so as not to unintentionally suggest that condom use is uncommon among the target population. Communicators who are low in normative expertise are able to frame their messages positively or negatively with less worry. When examining TEEMs videos only, normative expertise did, in fact, moderate the effect of message valence on condom use attitudes and intentions among males (Picklesimer, 2015). When the communicator was high in normative expertise, the negatively valenced message produced greater attitudes toward condoms and intentions to use condoms. When the communicator was low in normative expertise, the positively valenced message produced greater attitudes and intentions to use condoms. In the same study, normative expertise exhibited a main effect on intentions, such that condom use intentions were greater when the communicator was

high in normative expertise regardless of message valence. When examining TEEMs videos in relation to imperative videos, however, normative expertise did not interact with message valence, but it did interact with message style. A three-way interaction revealed that regardless of message valence, all participants reported greater information- and advice-seeking intentions (seeking information online and talking to someone about how to bring up condom use) when the communicator was low in normative expertise, except for males who viewed a TEEM; males who viewed an emotional education message were more likely to seek information and advice about condoms when the communicator was high in normative expertise, which is consistent with the findings described above.

While the findings regarding the moderating role of normative expertise are not quite consistent, it does seem that it plays an important role in the persuasive process. Further research is needed to fully understand the role of normative expertise, and the current study seeks to untangle these inconsistencies. Results from analysis of variance suggest that for the majority of participants, a lack of expertise appears to be persuasive. Perhaps seeing a female character who is not aware of what is normal or typical for a sexually active college student prompts most viewers to seek information and advice because they do not want to be like her. In other words, college students want others to perceive them as being “in the know,” so they are more motivated to gather information to ensure that happens. Furthermore, males may be especially persuaded when the communicator uses a condom and expresses positive emotional outcomes associated with that decision. Results from path analysis, however, show a direct effect of normative expertise on attitudes toward condoms among all participants. While there are evident inconsistencies, this study aims to test existing theory. Theoretical evidence suggests that communicators who are high in normative expertise are more persuasive when the message is

framed negatively. Therefore, the following hypotheses regarding main and interaction effects are proposed:

H2: Communicators who are high in normative expertise will have a stronger protective effect on condom attitudes, intentions, and behaviors, than those who are low in normative expertise.

H3a: Normative expertise will moderate the effect of message valence on condom use attitudes and intentions, such that negatively valenced messages will have a stronger protective effect when the communicator is high in normative expertise.

To the author's knowledge, the only existing research examining the relationship between normative expertise and message style is the pilot study. The pilot study suggests that low expertise communicators influence intentions to use condoms among all participants except males who viewed a TEEM. This interaction did not have an impact on attitudes, however. Because of these inconsistencies, a non-directional hypothesis is proposed:

H3b: Normative expertise will moderate the effect of message style on condom use attitudes and intentions.

The primary focus of the current project is to provide evidence for the effectiveness of emotional education interventions, particularly compared to more imperative styles. Ferrer and colleagues (2011) found support for the effectiveness of interventions with an emotional education component in promoting and sustaining condom use among college students, but additional research needs to be conducted to further substantiate these findings. Preliminary analyses of the current intervention materials show that the TEEMs videos were not necessarily more effective at directly promoting condom use than the imperative videos. TEEMs promoted more positive attitudes toward condoms among females compared to imperative videos, but the

difference was not substantial. Among males, the imperative messages were actually more effective at promoting attitudes toward condoms. Additionally, males tended to think more rationally after viewing the imperative messages compared to the TEEMs. It seems, then, that females who provided a concrete advisory statement about using condoms had a greater influence on males' rational processing and condom attitudes. Perhaps this is because direct statements and giving advice are characteristic of masculine communication styles (Wood, 2011), resulting in more positive attitudes. More generally speaking, though, there are a couple of plausible explanations for the lack of definitive superiority of TEEMs over imperative messages. First, both messages were presented in the same narrative format, with two females discussing a party where one of them hooked up with a guy she met there. Embedding messages in narratives has been shown to promote involvement in the message while lowering reactance and counter-arguing (Green & Brock, 2000), so the health message might be equally persuasive across those two conditions. In other words, the character may not need to discuss the emotional outcomes resulting from condom use or non-use because they were communicated implicitly or something viewers picked up nonverbally. A second possible explanation revolves around the lack of knowledge of the long-term effects of the videos on persuasive outcomes. Condom attitudes and intentions were only measured immediately following exposure to the stimuli. It is possible that TEEMs have a lasting effect on behaviors, as people tend to forget the arguments made in the imperative messages, but remember the emotions from the TEEMs. Ferrer et al. (2011) found this to be the case: participants who were exposed to a safe sex intervention that included an emotional education element were more likely to use condoms at three and six month follow-ups compared to those who did not receive the emotional education component of the intervention. A goal of the current project, then, is to examine the potential differential

effects of the intervention videos on future condom use behaviors. In fact, when looking at behavioral intentions, normative expertise interacted with message style among male participants. When the communicator was high in normative expertise, the TEEM promoted information and advice-seeking intentions, but when the communicator was low in normative expertise, the imperative message promoted these intentions. As previously discussed, the low expertise communicator promoted intentions among all participants across all conditions except among males who viewed a TEEM. In fact, males reported highest advice and information-seeking intentions when they viewed a TEEM with a high expertise communicator. Although the existing findings do not clearly show the TEEMs to be more effective at promoting condom use, it is evident that the emotional education messages are being processed differently than the imperative messages as they interact with the other manipulations (normative expertise, message valence, participant sex). Furthermore, examining long-term effects of TEEMs may further elucidate how they differ from imperative messages. Therefore, the following hypothesis is proposed:

H4: TEEMs will be more effective in promoting condom attitudes and behaviors over time than imperative messages targeting safe sex among college students.

Finally, it is possible that males and females will regard the experimental stimuli differently, as the video shows two female characters discussing a casual sexual encounter. Results from the pilot study show that this is, in fact, the case. Therefore, the following research question is posed:

RQ: Does a safe sex message regarding condom use impact males' and females' condom attitudes, intentions, and behaviors differently?

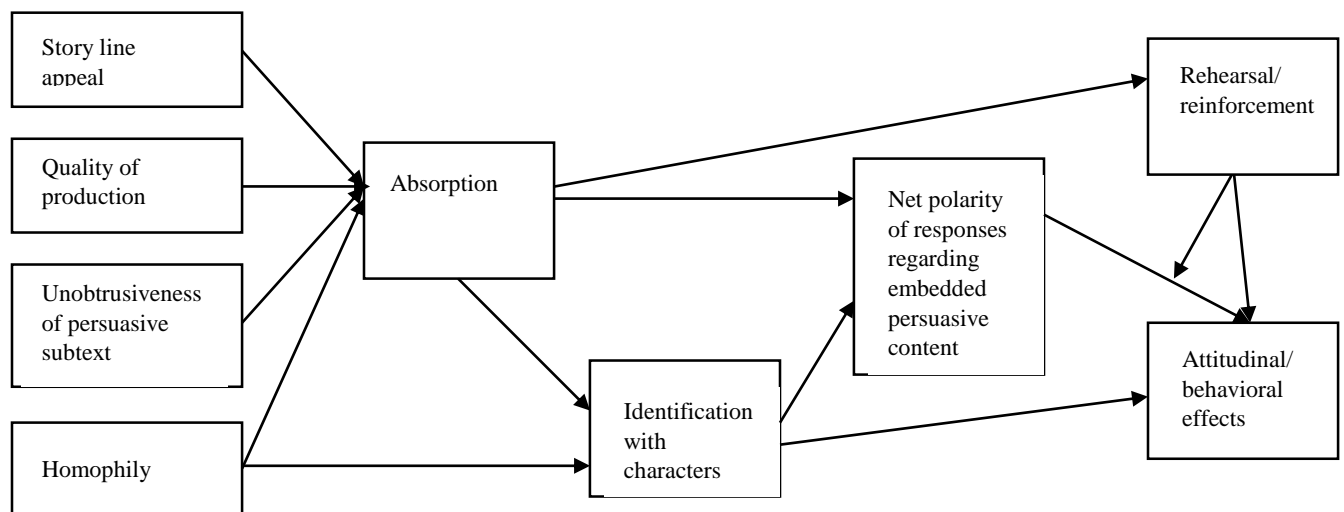
Though it is important to examine the effects of each manipulation individually, it is evident that their impacts on condom attitudes and behaviors cannot be fully understood in isolation. Preliminary analyses show sizeable significant relationships between the manipulations and a number of emotional responses to the stimuli. Emotional responses were also significantly related to rational processing, as well as condom attitudes and intentions. Specifically, emotion promoted both rational processing and advice and information-seeking intentions, but negatively influenced attitudes toward condoms and intentions related to discussing condom use with a partner and others. It seems that the more emotionally involved people are in the message, the more they want to learn about condom negotiation and use, but the less they want to talk about it. Perhaps this is because some of the emotions experienced are partner-related, so individuals seek information from unbiased and impersonal sources.

Emotional responses to the test stimuli were previously measured and factor analyzed using the Emotional Uses and Gratifications (EGRATS) scale (Strizhakova, Yang, & Buck, 2007). The data for the pilot study produced four factors: sex and power emotions, negative emotions, sympathy emotions, and curiosity emotions. These emotions were measured in response to the stimulus rather than in reference to condoms, specifically. The sex and power emotions included positive individualistic (confident, satisfied) and prosocial emotions (love, nurturing), but were predominantly characterized by emotions related to sex and power (sexually aroused, aggressive). The negative emotions loaded together on a single factor and included both negative individualistic (hatred, anger) and prosocial emotions (guilt, shame). Sympathy emotions include pity and interest, and curiosity emotions include inquisitive and compassionate. All emotion factors were positively related to both rational processing and advice and information-seeking intentions, and negatively related to attitudes toward condoms. Only the

reptilian and negative emotions had a direct negative relationship with intentions to discuss condom use with relevant others.

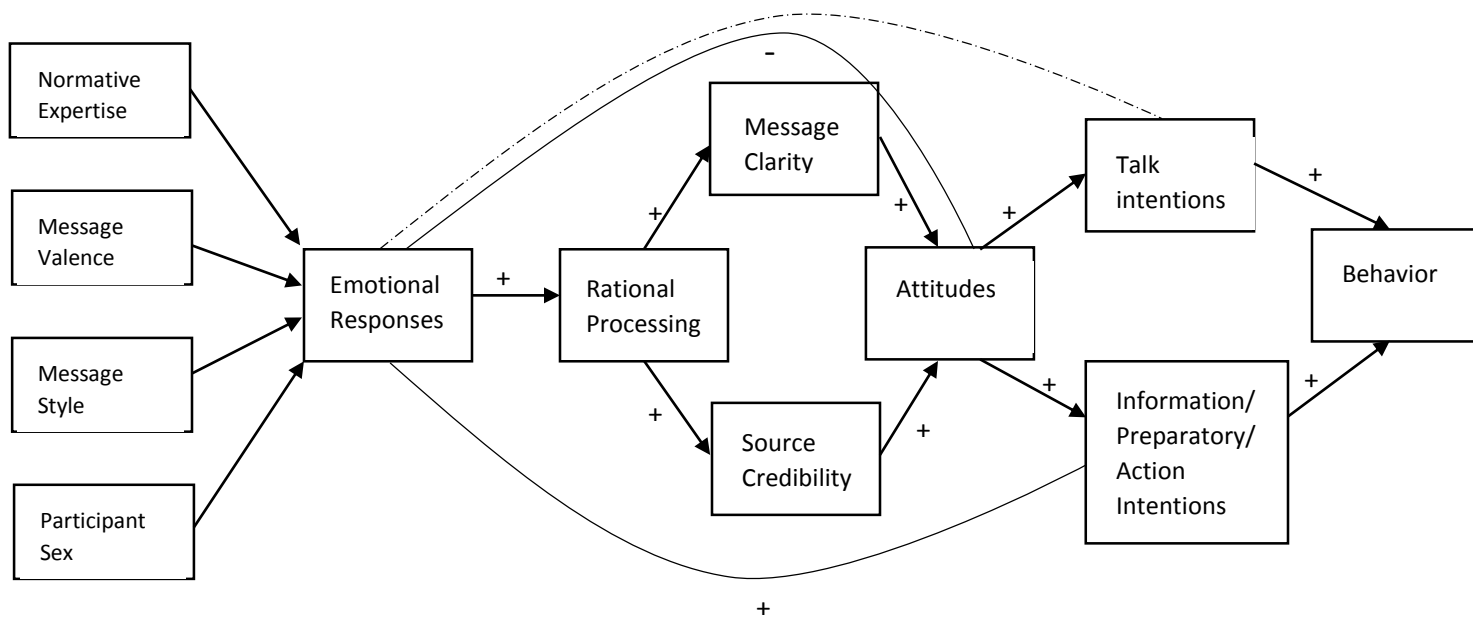
The emotional response factors described above were impacted differently by the various manipulations in the stimuli, as well, and likely mediate the impact of the stimulus on rational processing. Slater and Rouner (2002) proposed a theoretical model for the processing and outcomes of persuasive content in embedded messages. Although the variables in their model differ from the variables examined in the current project, the model provides a foundation for structuring the relationships among the variables described above. Slater and Rouner's (2002) model (shown below) identifies a number of independent variables, presumably controlled by the researcher, which then impact absorption or involvement with the narrative. Involvement is then predicted to impact the polarity of responses to the persuasive content, which finally impacts attitudes and behaviors. An underlying process revolves around identification with the characters, which is presumed to mediate the relationship between similarity of the characters to the viewers and attitudes and behaviors.

Figure 4. Theoretical Model for the Processing and Effects of Persuasive Content Embedded in Narratives (Slater & Rouner, 2002).



The current project seeks to understand the influence of normative expertise, message valence, and message style on attitudes and behaviors related to condom use. These relationships are assumed to be mediated by emotional and rational processing (what Slater and Rouner refer to as absorption or involvement), which has received preliminary evidence from the analyses described earlier. Preliminary analyses showed a small relationship between rational processing and condom attitudes, which suggests this relationship could be mediated by evaluations of the message and the source. Rational processing of the message likely involves perceptions of message clarity and source credibility, which are key predictors of attitudes (Chen & Chaiken, 1999; Beatty & Springhorn, 1977). Based on this theoretical evidence and an examination of existing correlations among variables of interest, the following model is proposed:

Figure 5. Hypothesized model.



Method

Participants

A sample of 575 undergraduate students (52% female, 48% male) from a large northeastern university participated in the first wave of this experiment, following approval from the institution's review board. Participants ranged in age from 18-24, ($M = 19.26$, $SD = 1.16$), and were predominantly from the United States (90%). The majority of the participants were either single (67.1%) or in a monogamous sexual relationship (25.7%), followed by dating and having casual sex with multiple people (4.2%), in a monogamous relationship without sex (2.3%), casually dating without sex (.5%), and one individual in the sample was married. Most of the participants reported having zero (33.3%) or one (34.4%) sexual partner in the last year, but 6.3% of the sample met the criteria for risky sexual behavior, with five or more sexual partners over the past year (Finnerty-Myers, 2011; Turchik & Garske, 2009). Following the demographic questions, participants were randomly assigned to eight conditions corresponding to the intervention messages described below. All students received course credit for participating.

Only 211 participants returned for the follow-up survey administered one month after initial data collection, resulting in significant attrition. Attrition did not differ across conditions, [$\chi^2(7) = 10.31$, $p = .17$], so it is unlikely that the stimuli impacted participation in follow-up survey. Of these participants, 52% were males and 48% were females. Most of the returning participants were single (69.3%) or in a monogamous sexual relationship (26.4%), followed by dating and having casual sex with multiple partners (1.9%), in a monogamous relationship without sex (1.9%), and casually dating without sex (.5%). Most of the returning participants did not have sex with a romantic (62.2%) or casual partner (82.4%) between the two waves of data

collection, though 37.8% said they did have sex with a romantic partner and 17.6% said they did have sex with a casual partner. To account for the missing data of those that did not return for the follow-up survey, missing values were substituted with the mean score on the relevant variables.

Design and procedure

A 2 (message style) x 2 (message valence) x 2 (normative expertise) post-test with follow-up experimental design was used to examine the effects of positive and negative emotions and normative expertise in both emotional education and imperative safe sex interventions on condom use attitudes, intentions, and behaviors. The procedure and design for the current study were very similar to the procedure and design used in the pilot study. Participants were randomly assigned to view one of eight videos. Two emotional education videos promoted condoms using either high or low normative expertise actors, and the other two criticized lack of condom use with either high or low normative expertise actors. The four imperative videos differed in the same manner. Each video was created using the same two female actors. As previously discussed, there are potential limitations to using female-only characters, but Sanderson and Yopyck (2007) found female communicators of safe sex messages to be more persuasive than male communicators.

Before viewing the video, participants were asked to respond to a number of demographic items, and to indicate their relationship status and number of sexual partners over the past year and over the past three years. Participants were then presented with the video stimulus, followed by three manipulation checks, and measures of rational processing, emotional response, message clarity, source credibility, post-message attitude toward condoms, and intentions to use condoms. This portion of data collection occurred in the middle of the spring

semester, between March 17 and April 3, 2016. A follow-up survey was conducted one month later to capture actual condom use behaviors. Approximately four weeks passed between the first time point of the first round of data collection and the first time point of the second round of data collection, which occurred between April 17 and April 28, 2016. Previous studies similar in nature have collected data at baseline and at one month (Fisher, Fisher, Misovich, Kimble, & Malloy, 1996; Sikemma, Winett, & Lombard, 1995; Rhodes & Wolitski, 1989) or two months (Tulloch, McCaul, Miltenberger, & Smyth, 2004; Jaworski & Carey, 2001; Fisher, Fisher, & Rye, 1995; Fisher, Fisher, Williams, & Malloy, 1994), so this timeline is reasonable. An online survey website was used to present the stimuli and collect the data.

Materials

The same eight intervention videos used in the pilot study were presented to participants in the current study as well; the videos portrayed two average female college students talking in a coffee shop about a party the night before. Each video was presented to participants as a scene in an upcoming independent film to avoid sensitization to the purpose of the study. As the conversation unfolds, viewers learn that one of the characters met a male student from a different school at the party and ended up going home with and having sex with him.

There are two primary manipulations across the four emotional education videos and the four imperative videos: high vs. low normative expertise and positive valence vs. negative valence. In the high normative expertise conditions, the main character discusses popular bars in the area, and mentions feeling comfortable at the party and having a good time, which communicates that she is in tune with the behaviors of the student body and hangs out at popular places. Later, she discusses her prior experiences “hooking up with” different partners, suggesting that she has experience with casual sex and related behaviors. In the low normative

expertise conditions, the same character conveys that she felt uncomfortable at the party, she does not go out very often, and she often has a hard time understanding how other college students have the time to do so. She also indicates that she has only had sex with two previous boyfriends, making this her first casual sexual experience.

The second manipulation changes the decision to use or not use a condom, and the valence of the message that results from that decision. When a condom was used, the character speaks positively of her decision and encourages condom use in the future. When a condom was not used, the character speaks negatively, criticizing the lack of condom use. The only other manner in which the videos differed involves the approach or style of the intervention message. In the emotional education videos, the character expresses positive emotions when a condom was used, including relief and pride that she used a condom, as well as excitement at the spontaneity of the encounter. Overall, the character communicates an air of satisfaction. When a condom was not used, however, the character expresses shame and disappointment in herself, as well as frustration with the partner. She mentions feeling anxious after the encounter, and discusses the compulsion to shower when she got home because she felt “icky.” In the imperative videos, the character does not use any emotion words, instead offering advice to the other character. When a condom was used, the character tells her friend that she made a smart decision and suggests that she always do the same. When a condom was not used, the main character describes the decision as foolish and advises her friend to always use a condom.

Measures

Manipulation Checks

Perceived normative expertise. Perceived normative expertise was measured as a manipulation check. Hall & Blanton (2009), utilized two items to gauge the character’s insight

into sexual behaviors that occur among her peers and at parties on campus. To allow for reliability estimation, the current study added a third item. The items included “How knowledgeable do you think this character is about common sexual practices on her campus?”, “How knowledgeable do you think this character is about the romantic and sexual behaviors that occur during and after parties on her campus?”, and “How knowledgeable do you think this character is about the social behaviors that occur on her campus?” Responses were measured on a seven-point Likert scale, ranging from *Not at all Knowledgeable* (1) to *Extremely Knowledgeable* (7). The measure exhibited good reliability ($\alpha = .84$).

Perceived normative self-expertise. Participants were also asked to assess their own insight into sexual practices among their peers, as well as the related behaviors that occur during and after parties on campus. The three items from above were adapted to refer to the participants’ knowledge rather than the character’s. The measure exhibited good reliability ($\alpha = .86$).

Message valence. Participants were asked four questions regarding their perception of the valence of the message to ensure that message valence was understood as intended. The items included “The main character in the video used a condom during the encounter she described,” “The main character in the video felt good (bad) about the encounter she described,” and “The main character in the video did not seem to feel good or bad about the encounter she described.” Responses were measured on a seven-point Likert scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (7). After eliminating the last item, which detracted from the measure’s reliability, the three-item measure exhibited good reliability ($\alpha = .86$).

Message style. Participants were asked three questions regarding their perception of the narrative style of the message to ensure that message style was understood as intended. Items

included “The conversation in the video focused on the emotions the main character experienced during the encounter she described,” “The main character in the video told her friend what to do (i.e. use a condom) if she is ever in a similar situation,” and “The main character in the video seemed to be giving advice to her friend regarding sexual encounters.” Responses were measured on a seven-point Likert scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (7). The first item severely lowered the measure’s reliability and was subsequently removed. The two-item measure exhibited good reliability ($\alpha = .85$).

Dependent Variables

Social norms. Perceived social norms were measured according to the recommendations provided by Fishbein and Ajzen (2010). Four items assessed perceived norms regarding condom use among college students in a relationship and four items assessed perceived norms regarding condom use among students who engage in casual sex. Participants were asked to respond to items indicating whether people like them do or do not use a condom. Responses were measured on a seven-point Likert scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (7). Example items included “Other people like me use condoms during sex with a romantic partner/casual partner,” “Most of my friends use condoms during sex with a romantic partner/casual partner.” Both measures regarding condom use norms with a romantic partner ($\alpha = .90$) and condom use norms with a casual partner ($\alpha = .87$) exhibited good reliability. Three additional items assessed motivation to comply with these norms. Responses were measured on a seven-point Likert scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (7) and an example item included “I want to do what other people like me do.” The motivation to comply measure also exhibited good reliability ($\alpha = .84$). The full measure, including all three dimensions, also exhibited good reliability ($\alpha = .88$).

Rational and affective processing. While rational processing is of primary interest in the current study, previous research has examined both rational and affective processing as an indicator of involvement in consumer purchase intentions (Chaudhuri, 1993) and involvement in dramatic narrative film (Stifano, 2012). The same six-item measure created by Chaudhuri and Buck (1993) from the pilot study, was used to measure rational and affective processing in the current study. Three items assessed rational processing: “The scene is thought-provoking,” “The scene is intellectually stimulating,” and “The scene made me think.” This measure exhibited good reliability ($\alpha = .80$). Three items assessed affective processing: “The scene is emotionally engaging,” “The scene is moving,” and “The scene made me feel something.” This measure also exhibited good reliability ($\alpha = .81$). All responses were measured on a seven-point Likert scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (7).

Emotional responses. Emotional responses to the stimuli were assessed using the Emotional Gratifications (EGRATS) scale (Strizhakova, Kang, & Buck, 2007). Participants were asked to indicate how strongly they experienced each of 35 emotions while viewing the scene. The full measure exhibited good reliability ($\alpha = .96$). Following an exploratory factor analysis (described in detail later), four factors emerged; the first three factors were very similar to the pilot study, while the last factor differed from the pilot study. The Sex and Power factor consisted of 14 items, and included emotions like sexy and satisfied. This factor exhibited good reliability ($\alpha = .95$). The Negative factor consisted of 12 items, and included emotions like ashamed and guilty. This factor exhibited good reliability ($\alpha = .93$). The Sympathy and Interest factor consisted of six items, including pity and curious. This factor exhibited acceptable reliability ($\alpha = .77$). Finally, the Admiration factor consisted of three items: admiration, envy,

and jealousy. The factor exhibited good reliability ($\alpha = .81$). All responses were measured on a seven-point Likert scale, ranging from *Not at All* (1) to *Very Much* (7).

Message clarity. Perceptions of message clarity were measured with five items, which asked participants to consider the extent to which they agreed with each statement about the main character's message. Example items include "The main character's message was well articulated in the video", "The main character communicated her ideas clearly", and "The main character's message was easy to understand." All responses were measured on a seven-point Likert scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (7). The measure exhibited good reliability ($\alpha = .90$).

Source credibility. Source credibility was assessed on three dimensions, using scales adapted from McCroskey and Teven (1999) and McCroskey and McCain (1974): trustworthiness, competence, and likeability. Trustworthiness was measured using a six-item, seven-point semantic-differential scale. Items were anchored by bipolar adjectives, which included: Honest – Dishonest, Untrustworthy – Trustworthy, and Honorable-Dishonorable. This measure exhibited good reliability ($\alpha = .84$). Competence was measured using a five-item, seven-point, semantic differential scale. Items were anchored by bipolar adjectives, which included: Unintelligent – Intelligent, Unreliable – Reliable, Competent – Incompetent. This measure exhibited good reliability ($\alpha = .87$). Likeability was measured with six items, and responses were measured on a seven-point Likert scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (7). Example items included "I think the main character in the video could be a friend of mine" and "I would like to have a friendly chat with the main character." This measure also exhibited good reliability ($\alpha = .87$).

Attitudes and beliefs about condoms. Attitudes and beliefs about condoms were assessed using the Attitudes toward Condoms (ATC) scale (Brown, 1984). The original scale consisted of 40 items and responses were measured on a seven-point Likert scale, ranging from *Strongly Disagree* (1) to *Strongly Agree* (7). Following an exploratory factor analysis (described in detail later), five factors emerged, confirming existing research. The first factor was related to embarrassment and consisted of 11 items, including “I see no reason to be embarrassed by the use of condoms” and “I would be comfortable suggesting that my partner and I use a condom.” This measure exhibited good reliability ($\alpha = .89$). The second factor was related to comfort and consisted of 11 items, including “Condoms are uncomfortable” and “Using a condom makes sex less enjoyable.” This measure exhibited good reliability ($\alpha = .89$). The third factor was related to the interruption of sexual activity and consisted of seven items. Items included “Use of the condom is an interruption of foreplay” and “Having to stop to put on a condom takes all the romance out of sex.” This measure exhibited good reliability ($\alpha = .84$). The fourth factor was related to arousal and excitement. This factor consisted of six items, including “I think proper use of a condom can enhance sexual pleasure” and “Many people make use of the condom as an erotic part of foreplay.” This measure exhibited acceptable reliability ($\alpha = .74$). The final factor was related to safety and reliability of condoms and consisted of five items. Example items included “I think condoms are an excellent means of contraception” and “Condoms seem unreliable.” This measure exhibited acceptable reliability ($\alpha = .71$).

Intentions to use condoms. Items used to assess condom use intentions were compiled from a variety of measures (Misovich, Fisher, & Fisher, 1998; Ajzen, 2002; Wong & Capella, 2009; Dilorio, 2009; Wang 2013) that assess varying dimensions of condom use. Participants were asked to indicate the extent to which they would be likely to engage in a number of

behaviors in the next month. Responses were measured on a seven-point Likert scale, ranging from *Very Unlikely* (1) to *Very Likely* (7). Following an exploratory factor analysis (described in detail later), three factors emerged. The first factor was related to direct communication with the partner and consisted of five items. Example items included “During the next month, if you engage in sexual intercourse, how likely is it that you will insist on using a condom with your sexual partner under any circumstances?” and “During the next month, if you engage in sexual intercourse, how likely is it that you will initiate the topic of safer sex with my potential partner?” This measure exhibited good reliability ($\alpha = .85$). The second factor was related to information and advice seeking from other sources. This factor consisted of four items, including “During the next month, if you engage in sexual intercourse, how likely is it that you will seek further information about condom usage and contraception online?” and “During the next month, if you engage in sexual intercourse, how likely is it that you will talk to someone (friend or family member) about how to “bring up” the condom conversation with a partner?” This measure exhibited good reliability ($\alpha = .86$). The final factor was related to the accessibility of condoms and originally consisted of three items. To improve reliability, one item was removed. The two items included “During the next month, if you engage in sexual intercourse, how likely is it that you will carry a condom with you if you think an encounter may lead to sexual intercourse” and “During the next month, if you engage in sexual intercourse, how likely is it that you will purchase condoms” and exhibited acceptable reliability ($\alpha = .71$).

Condom use behaviors. Unlike all other variables, condom use behaviors were only assessed during the follow-up. The same items used to measure condom use intentions were used to measure condom use behaviors, with the addition of two items that plainly asked

participants if they used a condom with a romantic partner or a casual partner each time they had sex.

Disposition toward risky behaviors. Ten items were created to measure general risk-taking behaviors, and were included at the end of the survey. Three of the items referred to risky sexual behaviors, which provided a baseline measure of current sexual experience, attitudes, and behaviors. The other seven items were included as foil items to prevent familiarization with the purpose of the study. Example items included “I frequently engage in casual sex with different partners” and “I have used recreational drugs on numerous occasions.”

Results

Homogeneity of subgroups

To ensure homogeneity across all conditions, one-way analysis of variance was conducted across continuous demographic variables, and a chi-square test for homogeneity was conducted across categorical variables. Conditions did not significantly differ on demographic variables, such as participants' sex [$\chi^2 (7) = 5.29, p = .62$], nationality [$\chi^2 (7) = 2.55, p = .92$], level of religiosity [$F (7, 567) < 1, p = .83$], relationship status [$F (7, 565) < 1, p = .72$], or number of sexual partners over the past year [$F (7, 559) = 1.06, p = .39$].

Factor analysis

An exploratory factor analysis was conducted to examine the factor structure underlying responses to the EGRATS scale, which examined the emotional reactions to the stimulus materials. It was assumed the scale would consist of the same four factors as in the pilot study, so the number of factors to extract was fixed to four. The analysis did, in fact, confirm four underlying factors, but they differed slightly from the pilot study. The principal components analysis with oblique rotation yielded four discrete factors: Sex and Power ($\alpha = .95$), Negative

Social and Individualistic ($\alpha = .93$), Sympathy ($\alpha = .77$), and Admiration ($\alpha = .81$). The Kaiser-Meyer-Olkin measure of sampling adequacy was .96, and Bartlett's test of sphericity was significant [$\chi^2 (595) = 13374.89, p < .01$]. There were 14 sex and power emotions, including sexy, erotic, and pleasure, as well as positive emotions related to love, satisfaction, and happiness. Twelve negative emotions were comprised of social emotions including shame, guilt, and embarrassment, and individualistic emotions including hatred, nervous, and scornful. Sympathy was comprised of six items related to sympathy and interest, including compassionate, pity, curious, and inquisitive. Lastly, there were three emotions related to admiration, including envy, jealousy, and admiration.

An exploratory factor analysis was also conducted to examine the factor structure underlying condom attitudes. The original measure was comprised of five factors related to embarrassment, comfort, interruption of the sexual activity, arousal and excitement, and safety and reliability. First, it is important to note that a number of items in the attitude measure were recoded so that higher scores indicated more positive attitudes toward condoms across all five factors. Specifically, higher scores on the embarrassment and interruption factors indicate less embarrassment related to condom use and decreased beliefs that using condoms interrupts sex. It was assumed the scale would consist of the same five factors, so the number of factors to extract was fixed to five. A principal components analysis with oblique rotation confirmed these five factors within the condom attitudes measure (see Measures for reliabilities). The Kaiser-Meyer-Olkin measure of sampling adequacy was .94, and Bartlett's test of sphericity was significant [$\chi^2 (780) = 10352.17, p < .01$].

To examine the factor structure underlying the condom use intentions measure, an exploratory factor analysis was conducted, and factors were extracted based on an Eigenvalue

greater than one. A principal components analysis with oblique rotation yielded three factors related to direct communication with the partner, seeking information and advice from third party sources (friends, family, the Internet), and accessibility (buying and carrying condoms). The Kaiser-Meyer-Olkin measure of sampling adequacy was .87, and Bartlett's test of sphericity was significant [$\chi^2(66) = 3249.72, p < .01$].

Manipulation checks

First, a series of one-way ANOVAs were conducted to ensure that the message valence, normative expertise, and message style manipulations were successful and regarded as intended, and to examine any potential interactions between the manipulated variables. The manipulation variables and participant sex were effect coded in the same manner as in the pilot study (positive message valence, high normative expertise, TEEMs, and male sex were coded 1, and their counterparts were coded -1). Results revealed that the message valence manipulation was successful: participants in the positive valence conditions ($M = 5.35, SD = 1.19$) understood that the communicator used a condom and felt better [$F(1, 573) = 907.25, p < .01, \eta^2 = .61$] than the communicator who did not use a condom ($M = 2.30, SD = 1.20$). The normative expertise manipulation was also successful: participants in the high normative expertise conditions ($M = 4.64, SD = 1.20$) did perceive the communicator to be higher in normative expertise [$F(1, 573) = 53.89, p < .01, \eta^2 = .29$] than participants in the low normative expertise conditions ($M = 3.91, SD = 1.20$). Lastly, the message style manipulation was successful: participants in the imperative message conditions ($M = 5.37, SD = 1.55$) regarded the communicator as issuing more directives [$F(1, 573) = 382.92, p < .01, \eta^2 = .40$] than the communicator in the TEEMs conditions ($M = 2.88, SD = 1.50$). Specifically, these analyses indicate that a) participants who viewed a positively valenced message understood that the main character used a condom and

experienced associated consequences, while participants who viewed a negatively valenced message understood that the character did not use a condom and experienced associated consequences; b) participants in the high normative expertise conditions perceived the main character to be higher in normative expertise than those in the low normative expertise conditions; and c) participants who viewed a TEEM perceived that the main character expressed emotions, while those who viewed the imperative message perceived that the main character told her friend what to do in similar situations.

Additionally, the valence manipulation [$F(1, 573) = 4.57, p < .05, \eta^2 = .01$] and the message style manipulation [$F(1, 573) = 4.74, p < .05, \eta^2 = .01$] exhibited significant effects on perceived normative expertise. Specifically, the main character was perceived to be more of a normative expert when she used a condom ($M = 4.39, SD = 1.24$) than when she did not use a condom ($M = 4.16, SD = 1.25$). The main character was also perceived to be more of a normative expert when the message was imperative ($M = 4.39, SD = 1.23$) than when the message was a TEEM ($M = 4.16, SD = 1.26$). These results could suggest potential interaction effects of message valence and message style on perceptions of normative expertise. These interactions are examined below.

Hypothesis testing

To test the four hypotheses and examine possible sex differences in responses to the manipulations, a number of univariate analyses of variance were conducted using the GLM procedure to investigate main and interaction effects of message valence, normative expertise, and message style on affective and rational processing, attitudes toward condoms, and condom use intentions and behaviors. Results from the GLM procedures yielded only main effects. Participant sex impacted attitudes toward condoms [$F(1, 510) = 26.30, p < .01, \text{partial } \eta^2 = .05$],

with females ($M = 5.14$, $SD = .85$) reporting more positive attitudes toward condoms than males ($M = 4.77$, $SD = .72$). There were no direct effects of the manipulations on condom use intentions, but there was a significant main effect of participant sex on condom use behaviors [$F(1, 210) = 6.75$, $p < .01$, partial $\eta^2 = .03$], with males ($M = 3.57$, $SD = 1.44$) reporting more condom use behaviors than females ($M = 3.05$, $SD = 1.28$).

Because there were no significant interactions among the manipulations, and because participants regarded the manipulations as intended, standard multiple regression was utilized to test each of the hypotheses. The perception variables were entered together as predictor variables to examine their effects on condom use attitudes, intentions, and behaviors. The models for condom use attitudes related to interruption of the sexual activity [$F(3, 571) = 2.69$, $p < .05$, $R^2 = .01$], arousal [$F(3, 571) = 3.25$, $p < .05$, $R^2 = .02$], and safety [$F(3, 571) = 2.91$, $p < .05$, $R^2 = .02$] were significant; the models for condom use attitudes related to embarrassment [$F(3, 571) = 2.06$, $p = .10$] and comfort were not significant [$F(3, 571) = 1.26$, $p = .29$]. The models for partner [$F(3, 571) < 1$, $p = .49$] and information intentions [$F(3, 571) = 1.51$, $p = .21$] were not significant, but the model for access intentions was significant [$F(3, 571) = 3.63$, $p < .05$, $R^2 = .02$]. The models for all behaviors were also not significant: partner [$F(3, 571) < 1$, $p = .54$, $R^2 = .04$], information [$F(3, 571) < 1$, $p = .69$], access [$F(3, 571) < 1$, $p = .84$]. Standardized regression coefficients were examined within each of the models. The first hypothesis predicted negatively valenced intervention messages would have a stronger protective effect on condom attitudes and intentions than positively valenced messages. This hypothesis was not supported; perceptions of the message valence did not significantly impact condom use attitudes or intentions.

The second hypothesis predicted communicators who are high in normative expertise would have a stronger protective effect on condom attitudes and intentions than those who are low in normative expertise. This hypothesis was partially supported; perceived normative expertise did significantly predict condom attitudes related to embarrassment ($b = .10, p < .05$), interruption ($b = .12, p < .01$), arousal ($b = .11, p < .05$), and safety ($b = .13, p < .01$), but not any of the intentions factors.

Hypothesis 3a predicted normative expertise would moderate the effect of message valence on condom use attitudes and intentions, such that negatively valenced messages would have a stronger protective effect when the communicator is high in normative expertise. This hypothesis was partially supported; the interaction between message valence and normative expertise significantly impacted attitudes related to arousal [$F(1, 563) = 5.81, p < .05, R^2 = .01, \beta = .10$] and safety [$F(1, 563) = 4.39, p < .05, R^2 = .01, \beta = .09$], as well as access intentions [$F(1, 563) = 5.87, p < .05, R^2 = .01, \beta = .10$]. Hypothesis 3b predicted normative expertise would moderate the effect of message style on condom use attitudes and intentions. This hypothesis was not supported; the interaction between message style and normative expertise did not significantly impact any of the attitudes or intentions factors.

The fourth hypothesis predicted TEEMs would be more effective in promoting condom attitudes and behaviors over time than imperative messages. This hypothesis was partially supported; TEEMs were not significantly more effective than imperative messages in influencing condom attitudes at baseline or follow-up. They were, however, more effective in promoting condom access intentions at baseline ($b = .10, p < .05$), but none of the other intentions factors or behaviors at follow-up.

Similar to the pilot study, the proposed hypotheses were not supported because the manipulations did not have direct effects on outcome variables of interest, but had direct or indirect effects on a number of mediating variables, such as emotional responses, rational processing, message clarity, and source credibility. The perception variables were entered together as predictors variables in a standard multiple regression to examine their impact on rational processing. The model for rational processing was significant, and the perception variables explained 3% of the variance [$F(3, 571) = 5.32, p < .01, R^2 = .03$]. Perceived normative expertise significantly and positively impacted rational processing of the message ($b = .12, p < .01$), while perceived message valence negatively impacted rational processing of the message ($b = -.12, p < .01$), suggesting that normative experts and not using a condom promote thinking about the message.

The perception variables were also entered together as predictors in a standard multiple regression to examine their impact on emotional responses. The model and perception variables were not significant for emotional responses to the message. This makes sense as the variety of emotional responses are likely impacted differently by the manipulation perceptions and also likely differentially impact outcome variables of interest. Therefore, the impact of the perception variables on affective processing was examined using the same analyses described above. The model was significant and the perception variables explained 3% of the variance [$F(3, 571) = 5.68, p < .01, R^2 = .03$]. Specifically, perceived message style ($b = .10, p < .05$) and perceived normative expertise ($b = .09, p < .05$) significantly and positively impacted affective processing, while perceived message valence ($b = -.12, p < .01$) significantly and negatively impacted affective processing. This suggests that normative experts, emotional messages, and negatively valenced messages (not using a condom) promoted emotional engagement in the message. To

improve the relationship between rational processing and attitudes in the pilot study, message clarity and source credibility variables (competence, trustworthiness, and likeability) were added to the model in the current study, as previously discussed. Therefore, the proposed model was tested, with both emotional responses and affective processing in the model. Model testing will be discussed in the following section.

Model testing

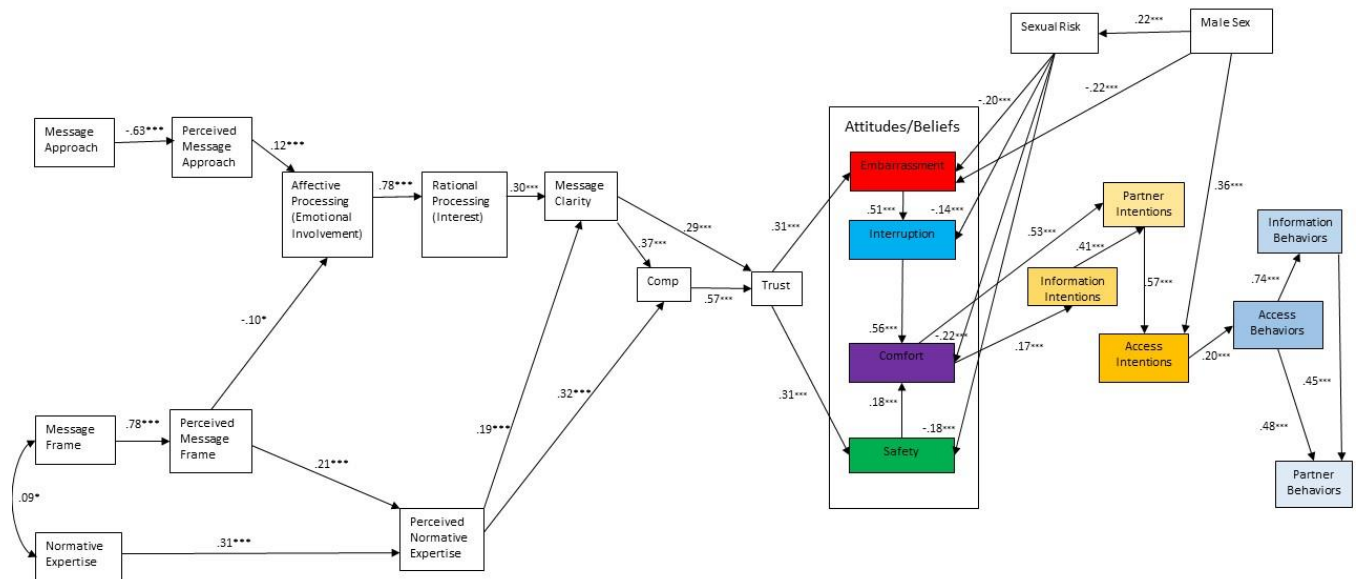
The hypothesized model was tested using Amos (Version 22), using maximum likelihood estimation. First, participant sex had a significant negative effect on all the embarrassment attitude factor, indicating that females feel less embarrassed about condom use and negotiation compared to males. Additionally, sexual risk taking was added to the model, as it was found to have a significant relationship with participant sex and with attitudes toward condoms at baseline and follow-up. Males tended to be riskier than females, which could perhaps explain their decreased attitudes toward condoms. Furthermore, sexual risk taking also had a significant negative effect on attitude factors, indicating that riskier individuals hold more negative attitudes toward condoms.

Second, emotional response factors (EGRATS) negatively impacted model fit, as well as model parsimony, so general affective processing (or emotional involvement) (Chaudhuri & Buck, 1993) was added to the model in its place. Additionally, rational processing (or interest) directly impacted perceived message clarity, but not perceived source credibility. Instead, message clarity predicted competence, trustworthiness, and likeability. Both competence and trustworthiness directly impacted four of the five attitudes/beliefs about condoms factors (embarrassment, interruption, comfort, and safety). Likeability was trimmed from the model as it did not show a significant effect on condom attitudes, and model fit was negatively impacted

until it was removed from the model. The arousal attitude factor was also trimmed from the model as it did not exhibit a significant relationship with any of the variables in the model. See Figures 6 and 7 for all path coefficients.

Though it was assumed that the condom attitude factors would predict the intentions factors, further examination of the relationships among those factors indicated that comfort attitudes were the strongest predictors of condom use intentions. Additional analyses show that attitudes related to embarrassment predicted attitudes related to interruption of the sexual activity, which then predicted attitudes related to comfort. Furthermore, attitudes related to the safety and reliability of condoms also predicted attitudes related to comfort. Comfort attitudes then directly predicted partner intentions and information intentions, suggesting that the more comfortable participants felt about condom use, the more they intended to engage with their partners about condoms and the more they intended to seek information and advice from third parties. Partner intentions then predicted access intentions, or intentions to purchase and carry condoms. Access intentions subsequently predicted access behaviors, which then predicted both partner and information behaviors. Finally, information behaviors predicted partner behaviors. Perceived message valence negatively impacted affective processing, suggesting that participants felt more when the main character did not use a condom. On the other hand, perceived normative expertise positively predicted perceptions of message clarity and source credibility, suggesting that normative expertise improves message and source evaluations. See Figures 6 and 7 for all path coefficients. It is also necessary to note that perceived message style positively impacted affective processing, suggesting that participants felt more when the main character was perceived to be giving advice, which runs counter to expectations.

Figure 6. Model 1.



* $p < .05$

*** $p < .001$

$\chi^2 (218) = 571.576, p < .01$

NFI = .903

TLI = .927

CFI = .937

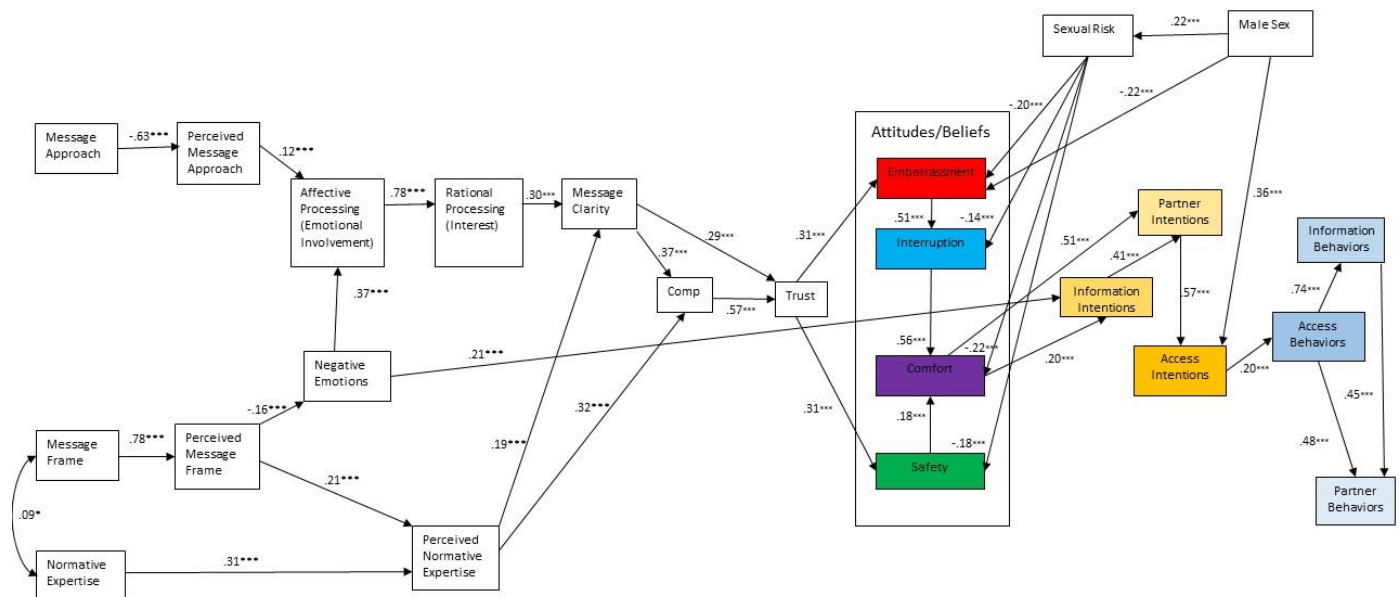
SRMR = .058

RMSEA = .053, pclose = .160

Of note is the small effect of perceived message valence on affective processing (emotional involvement). It was assumed that emotional response factors mediated this effect, so those variables were added back into the model to examine their impact on affective processing. Model fit did not improve when these variables were added, but there was evidence that perceived message valence is mediated by negative emotional responses. Negative emotional responses also had a significant direct effect on intentions to seek information and advice about condoms from third parties. The negative emotional response factor was added back into the model to examine its relationship with message valence and affective processing.

Model fit was negatively affected, but the inclusion of negative emotions in the model provides a more complete picture of the process and perhaps supports existing research that indicates that anticipating negative emotions promotes intentions to practice safer sex.

Figure 7. Alternate model.



* $p < .05$

*** $p < .001$

$\chi^2 (239) = 674.872, p < .01$

NFI = .889

TLI = .914

CFI = .925

SRMR = .067

RMSEA = .056, pclose = .018

It is important to note that participants in this sample were not very risky, sexually. In addition to the low numbers of casual partners, participants in the sample scored below the midpoint on the measure of sexual risk-taking ($M = 2.94, SD = 1.43$). Furthermore, they reported relatively positive attitudes toward condoms (embarrassment: $M = 5.72, SD = .94$, interruption: $M = 4.95, SD = 1.09$, comfort: $M = 4.56, SD = 1.10$, safety: $M = 5.14, SD = 1.00$,

arousal: $M = 4.06$, $SD = 1.00$) and intentions to use them (partner: $M = 4.80$, $SD = 1.51$, information: $M = 3.42$, $SD = 1.63$, access: $M = 4.45$, $SD = 1.82$). Participants also perceived condom use to be a normative behavior overall ($M = 4.90$, $SD = 1.04$), moreso with casual sexual partners ($M = 5.53$, $SD = 1.24$) than romantic partners ($M = 4.73$, $SD = 1.51$).

Furthermore, in the follow-up survey, participants were asked if they had sex with a romantic or casual sexual partner in the previous month between data collection points. Among those who had sex with any type of partner, condom use intentions were greater than actual condom use behaviors. Those who had sex with a casual sexual partner reported greater intentions to use condoms (partner: $M = 4.86$, $SD = 1.17$, information: $M = 3.59$, $SD = 1.71$, access: $M = 5.00$, $SD = 1.74$), as well as actual condom use behaviors (partner: $M = 3.52$, $SD = 1.48$, information: $M = 3.52$, $SD = 1.53$, access: $M = 4.26$, $SD = 1.44$) at follow-up compared to those who had sex with a romantic partner (partner intentions: $M = 4.09$, $SD = 1.61$, information intentions: $M = 2.86$, $SD = 1.68$, access intentions: $M = 4.15$, $SD = 2.04$; partner behaviors: $M = 2.77$, $SD = 1.52$, information behaviors: $M = 2.96$, $SD = 1.44$, access behaviors: $M = 3.49$, $SD = 1.78$). Even more specifically, when participants were asked to what extent they used a condom each time they had sex during the past month, those who had sex with a casual partner ($M = 4.24$, $SD = 2.29$) used a condom more often than those who had sex with a romantic partner ($M = 3.52$, $SD = 2.03$). Taken together, these results suggest that participants in this sample see condom use with a casual partner as more normative than with a romantic partner, and they were more likely to intend to use and actually use condoms with a casual partner than with a romantic partner.

Current Study Discussion

The original four hypotheses predicted direct effects of the manipulations on condom attitudes, intentions, and behaviors. Not surprisingly, none of these hypotheses were supported,

confirming findings from the pilot study, which revealed a more complex process. With the addition of message clarity and source credibility, a process model was tested to examine potential mediating variables. The final model indicated that message style and message valence impacted affective processing of, or emotional engagement in, the message. Specifically, perceiving the main character as giving advice about condom use promoted affective processing, as did perceiving the main character as not using a condom and experiencing negative consequences of that decision. Positive message valence also increased perceptions of normative expertise, suggesting that using a condom promotes perceptions that the main character is in tune with the social norms regarding sexual behaviors; in other words, it appears as though using a condom during a sexual encounter is perceived to be a normative behavior. Affective processing then promoted rational processing (interest) of the message, which confirms existing research that emotions often precede rational thought in decision-making (Kunst-Wilson & Zajonc, 1980). Rational processing predicted message clarity, which subsequently predicted source competence and trustworthiness. Both message clarity and source competence were predicted by increased perceptions of the main character's normative expertise. Normative expertise, then, promoted positive evaluations of the source and the message, indicating that normative expertise acts as a type of normative credibility. Source trustworthiness promoted attitudes related to embarrassment and safety. While safety attitudes directly promoted comfort attitudes, embarrassment attitudes indirectly impacted comfort attitudes, as they were mediated by interruption attitudes. Comfort attitudes then directly and positively promoted both partner and information intentions. Partner intentions then predicted access intentions, which subsequently predicted access behaviors. Access behaviors predicted both information and partner behaviors, and information behaviors impacted partner behaviors.

In contrast to the pilot study, emotional responses to the video were not affected by the manipulations, and they were weaker predictors of rational processing compared to affective processing. For this reason, affective processing was entered in the model and the emotional response factors were examined as potential mediators. The only emotional response factor that added predictive power to the model was the negative emotion factor. While the addition of the negative emotional response variable negatively affected model fit, it made theoretical and practical sense to examine negative emotions as they relate to affective processing and behavioral intentions. Negative emotions significantly predicted affective processing, indicating that the negatively valenced messages, in which the main character did not use a condom, promoted similar negative emotions in viewers. Therefore, negative emotional responses promoted emotional engagement in the narrative, mediating the previously described relationship between message valence and affective processing.

Furthermore, negative emotions have previously been found to directly predict intentions to use condoms (Sandberg & Connor, 2008). Of the other three emotion factors, negative emotions were the only ones that exhibited an impact on any of the intention factors. Existing research has shown that people are motivated to engage in behaviors that allow them to avoid negative emotional consequences (Baumeister et al., 2007). In the current study, negative emotions directly affected information intentions, or those related to seeking information and advice from sources outside the relationship (e.g. friends, family, the Internet). There are a few possible explanations for this. First, it is possible that experiencing negative emotions related to lack of condom use predicted information intentions because engaging with sources outside the relationship is the best way to avoid further negative emotional consequences. For example, individuals might fear rejection from the partner or anticipate embarrassment if they talk to the

partner about condom use or refuse to have intercourse without a condom, which would explain the lack of relationship with partner intentions. Similarly, individuals might anticipate feeling embarrassed or unsure about purchasing condoms and having them available, which would explain the lack of relationship to access intentions. Seeking information online or talking to a trusted friend about condom use, however, may not result in the same negative consequences. Second, and relatedly, the behavior modeled in the videos was conversation with a trusted friend about condom use. The main character relayed a story of hooking up with someone with which she did not have an existing relationship, and admitted to not using a condom during that encounter. The main character's friend did not respond negatively, and the main character was not punished in any way for disclosing, which could lead viewers to believe that there are limited, if any, negative consequences for discussing sexual behaviors and condom use with others. Therefore, I argue that negative emotions are an important predictor of emotional engagement in the narrative and at least one dimension of condom use intentions, which means negative emotions may be important in both the encoding and decoding of a narrative message.

One of the more interesting and important takeaways from the current study is the need for future researchers to examine varying dimensions of attitudes, intentions, and behaviors. While source trustworthiness was positively related to all five underlying factors of condom attitudes and beliefs, the largest relationships were with attitudes related to embarrassment and safety. Furthermore, those factors impacted only partner intentions and information intentions, the latter of which directly influenced access intentions. Not surprisingly, access intentions predicted access behaviors, which then predicted both partner and information behaviors. It seems, then, that the different attitude factors operate as a process as well, with embarrassment,

interruption, and safety attitudes only influencing intentions through comfort attitudes. This will be explored further below.

First, it is important to note that attitudes related to arousal (e.g. condom use as a part of foreplay) were not significantly impacted by source trustworthiness, nor did they have an effect on condom use intentions, so that factor was dropped from the model. Attitudes related to comfort consistently and positively predicted intention related to discussing and negotiating condom use with a partner, as well as intentions related to seeking information and advice from individuals outside of the relationship, suggesting that perceived comfort is an important consideration in the decision to use condoms. Comfort attitudes were influenced by the remaining three attitude factors, which is a key finding to understanding how different attitudes and beliefs related to condom use influence intentions and behaviors. Attitudes related to embarrassment positively predicted attitudes related to the interruption of the sexual activity, which suggests that the less individuals felt embarrassed by the use condoms, the less they believed condoms interrupted the sexual activity. In other words, beliefs that condoms interrupt the sex act seem to be brought about by beliefs that condom use is embarrassing. Attitudes related to interruption then positively predicted comfort attitudes, suggesting that the less individuals felt that condoms interrupt the sex act, the more comfortable they believed condoms to be. Comfort attitudes were also directly predicted by attitudes related to the safety and reliability of condoms, which indicates that believing condoms to be a safe and reliable form of contraception impacted perceptions of comfort as well. The fact that comfort attitudes acted as the direct link through which the other attitude factors influenced condom use intentions suggests that comfort attitudes act as a secondary evaluation of the condom. It is only after individuals

believe condom use to be less embarrassing and interruptive, but safe and reliable, that they believe them to be comfortable.

Intentions to engage with both the partner and with sources outside the relationship were predicted by comfort attitudes, which indicates that when individuals feel comfortable negotiating and using condoms, they are also more likely to report intentions to discuss and use condoms with their partner, as well as seek information and advice from third party sources, like a friend, family member, or online sources. Intending to engage in these behaviors predicts intentions related to the access or availability of condoms. When people intend to gather information and negotiate condom use with the partner, then, they are more likely to intend to purchase and carry condoms with them, and use them when they are available.

In terms of actually engaging in the various behaviors related to condom use, access intentions were the only significant predictors of actual behaviors. Access intentions directly predicted accessing condoms over the course of the month between baseline and follow-up. Access behaviors then predicted negotiating and using condoms with the partner, as well as seeking information and advice from others. This is an important finding for future researchers as it indicates that the availability of condoms might be a key motivator for actually using them. If individuals have no intentions to access condoms, then it is possible that they will fail to discuss or use them with a partner, or seek further information about them. In other words, intentions to access condoms could be an important first step toward other behaviors related to using condoms, a step that should not be overlooked in the future measurement of behavioral intentions. This could also explain why some previous researchers (e.g. Farrar, 2006) have failed to find a direct association between intentions and behaviors; individuals may have the best of intentions to practice safer sex, but without access to condoms, it is unlikely they will discuss or

use them. Additionally, information behaviors also directly predicted partner behaviors, which indicates that seeking information and advice from others outside the relationship is an important step between accessing condoms and negotiating condom use with a partner. In other words, it is likely that individuals purchase condoms and obtain information about condom use from others before communicating about them or using them with a partner.

In sum, the findings from the current study suggest that future researchers should take care to examine a variety of factors related to condom use attitudes, intentions, and behaviors. It appears that intending to access condoms and actually accessing condoms is the driver of actual condom use behaviors, so perhaps future researchers should target attitudes that increase the likelihood of those intentions and behaviors. Of note is the process of condom use intentions in influencing behaviors. While comfort attitudes directly promoted intentions to engage with the partner about condoms, those attitudes also indirectly influenced partner intentions through information intentions. Perhaps individuals intend to seek further information from others to prepare for condom negotiation with the partner. Intentions to negotiate condom use with the partner then influences intentions to access condoms. This process is nearly opposite for actual condom use behaviors, though. Intentions to access condoms leads directly to engaging in behaviors to make condoms available, which then influences actual information seeking and negotiation with the partner. It seems, then, that once individuals intend to engage with the partner and seek information, they also intend to do things like purchase condoms. Intending to purchase condoms leads to that actual behavior, which seems to be the first step in actually using condoms with a partner.

While every effort was made in the current study to account for the limitations of the pilot study, there are still a number of areas for future research. First, a convenience sample of

college students participated in this study, limiting the generalizability of the results to other populations. In addition, the majority of the participants were likely first year students, as they were recruited from a required introductory level communication course. It is possible that they have not engaged in many casual sexual encounters, rendering them less at-risk compared to other populations. In fact, many of the participants were single or in a monogamous sexual relationship at the time of the study, and condom use with a casual partner was perceived to be a relatively normative behavior. Future researchers should take steps to examine these types of interventions among more at-risk populations. On the other hand, it is possible that responses were impacted by social desirability and participants were not entirely forthcoming about their attitudes, intentions, behaviors, and perceptions regarding sex and condom use. To avoid sensitizing participants to the nature of the study, data were only collected following exposure to the stimuli, so it is not possible to compare safe sex attitudes and behaviors pre-test to posttest. Therefore, it is also not clear if the stimuli impacted a change in prior attitudes and behaviors. Future researchers, then, should examine pre-test perceptions of condom use norms, attitudes, intentions, and behaviors to isolate the experimental stimuli as the causal variable. Doing so will also provide further information regarding potential social desirability issues in the self-report data.

A second limitation of the current study is the collection of attitudinal and behavioral data at two time points, immediately following exposure to the message and at one month follow-up. While doing so provided support for the effectiveness of the messages over a short amount of time, it is important for future researchers to examine the lasting effects of these types of interventions. The impact of the messages could dissipate over time, and without true longitudinal measures, results of the current study should be interpreted with caution.

Furthermore, Ferrer et al. (2011) found that condom use improved six months following an emotional education intervention, but did not significantly improve at the three-month follow-up. It is possible, then, that the TEEMs are exhibiting a sleeper effect, wherein the impact on behavior is delayed.

A third limitation that should be addressed is the use of two female characters in the stimulus materials. While Sanderson and Yopyck (2007) found females to be more effective communicators in safe sex videos among both males and females, future researchers can improve upon this design by examining male communicators, as well as cross-sex pairs.

A fourth limitation in the current study is the failure to measure perceived argument quality. Argument quality has previously been identified in the persuasion literature as a key variable in influencing attitudes and behaviors, and as a variable that commonly interacts with source credibility (Pornpitakpan, 2004). Stoltenberg and Davis (1988) found that argument quality had the greatest effect on attitudes and behaviors when the source was perceived to be highly credible. Furthermore, Heron (1997) found that argument quality had a significant effect on persuasive outcomes when the source was perceived to be high in expertise, but was less important when the source was perceived to be low in expertise. The current study found that perceived normative expertise, though a different type of expertise, increased perceptions of message clarity and source competence. Perhaps if argument quality had been measured and included in the model, it would have interacted with perceived normative expertise to directly influence attitudes toward condoms. Argument quality was not measured in the current study because it was assumed that the characters in the narrative would not be perceived as communicating arguments, but rather telling a story. Future researchers should include measures

of argument quality, however, as this could be a key variable in promoting attitudes and behaviors.

Lastly, the message style variable predicted affective processing of the message, but not in the manner that was expected. Theoretically, the expression of emotions in the TEEMs messages should have promoted affective engagement in the narrative since the imperative messages replaced direct emotional expressions with directives, such as “Don’t do what I did, always use a condom.” Instead, the more participants perceived the character to be giving advice, the more affectively engaged they were. A possible explanation for this revolves around the resolution of the narrative. In the imperative conditions, the main character does not label her emotions, but still expresses certain emotions through her tone of voice and facial expressions. When she has completed her story, she ends it by declaring, “Whatever you do always use a condom. Just be smart whenever you hook up with someone.” This final declaration punctuates the end of the narrative and provides a clear resolution or ending to the story. In the TEEMs videos, however, the main character clearly discusses how she feels after the encounter, but the scene trails off. There is no clear punctuation to conclude the narrative, which could pull viewers out of the story, negatively impacting their emotional engagement in the narrative. Prior research has demonstrated that emotional engagement suffers when a narrative is disrupted (Stifano, 2010). Therefore, future researchers should take care to provide the appropriate structural elements of a narrative to ensure viewers remain fully engaged in the story.

Chapter 7: General Discussion

The primary goal of this research program was to improve upon our limited understanding of the effects of safe sex health messages that utilize emotional education styles

compared to more traditional messages. Furthermore, this project sought to examine the differential effects of framing health messages positively and negatively by conveying the positive consequences of using a condom and the negative consequences of not using a condom. Additionally, prior research has demonstrated normative expertise to be a key moderator of message frame in health messages (Hall & Blanton, 2009; Stuart & Blanton, 2003), and the current study aimed to replicate these findings. Across two studies, there was little evidence for direct main or interaction effects of message style, message valence, and normative expertise on attitudes toward condoms, intentions to use condoms, or condom use behaviors. Rather, the effects of these manipulations are best understood as the beginning of a more complex process, as indicated across two similar path models. The majority of this discussion will focus primarily on the model from the latter study, as a number of changes were made to improve measurement of various constructs, namely perceptions of the manipulations.

To begin, it is important to note that while the manipulations did not statistically significantly interact, they all exerted individual and combined effects on a number of important variables that showed significant effects on condom attitudes, intentions, and behaviors. Both message style and message valence significantly impacted affective processing. Specifically, participants were more emotionally engaged when they perceived the main character to be offering advice to her friend and when she did not use a condom. Regardless of whether the message was imperative or emotional, when the character did not use a condom, viewers felt more negative emotions (e.g. guilty, disgusted, embarrassed), which was a stronger predictor of affective processing, and also a direct predictor of intentions to use condoms. Furthermore, perceived message valence was related to perceived normative expertise, which was a significant predictor of message clarity and source competence. These findings suggest that when the main

character used a condom, she was also perceived to be a normative expert, or someone who is in tune with norms related to college student life and the romantic and sexual behaviors in which college students engage. A normative expert likely communicates a type of credibility or believability, so it makes sense that this character was perceived to deliver a clear message and be a competent source. What is surprising, however, is the fact that using a condom and delivering a positive message promoted perceptions of normative expertise. It was assumed that condom use was a fairly non-normative behavior among college students, as previous research has shown, but this relationship could suggest otherwise. In fact, the data showed that condom use was perceived to be a normative behavior in this particular sample. It makes sense, then, that a character exemplifying the normative behavior would be perceived as more credible.

Second, affective processing significantly predicted rational processing, which set off a chain of events that eventually impacted condom use attitudes, intentions, and behaviors. This sequence provides support for the importance of targeting emotions in health messages to improve decision-making. The goal of TEEMs, specifically, is to show communicators labeling their emotions so that viewers will learn to label and anticipate the emotions they may experience in a similar situation. Doing so allows the viewer to think rationally about the emotional consequences and use that information to make healthier decisions. Although TEEMs were not more effective than imperative style messages at promoting affective engagement, it is clear that affective engagement is a necessary first step in thinking about the message. In other words, it may be more important that the message makes individuals *feel something*, regardless of whether or not the character issues an imperative statement. The support for eliciting general affect provides support for embedding health messages in narrative storylines. In the current study, participants did not significantly differ in their levels of emotional responses to the TEEM

or the imperative message because both messages were embedded in a compelling narrative. Both narrative styles promoted emotional engagement and elicited emotional responses, thereby rendering each style effective.

One important caveat to this is the mediated effect of message valence on affective processing. Negative emotions seem to hold a little more weight in decision-making as individuals are motivated to avoid them, and so are thereby motivated to avoid the behavior that leads to negative feelings. It can be argued that framing a message negatively so as to elicit negative emotional responses is a good strategy for message designers, as negative emotions promote affective processing and directly influence information-seeking intentions.

Finally, while TEEMs is an important approach to health message design, findings from this study suggest that it might be more useful to focus on messages that promote emotional engagement overall. The vast literature on entertainment-education shows that embedded health messages are often more effective than more traditional messages (e.g. public service announcements) because involvement in the narrative reduces counter-arguing and reactance (Slater & Rouner, 2002; Singhal & Rogers, 1999). The findings from this study support this idea and expand upon it. Entertainment-education narratives are often found in entertainment-programming, and so are costly and difficult to implement and evaluate effectively. Findings from the current study, however, show that brief narratives as short as two-and-a-half minutes, can promote affective engagement in the narrative. As discussed previously, affective engagement is the beginning of a process that leads to attitude and behavior change. Therefore, the current study advances brief TEEMs-style interventions as a useful alternative to traditional health messages and the more complicated entertainment-education messages.

Implications

There are a number of important implications for this research. First, Targeted Emotional Education Modules provide a unique and potentially effective avenue for teaching individuals how to anticipate emotional experiences in risky situations, as well as how to utilize that emotional information to make better, healthier decisions. Because emotions often have a stronger and more immediate influence on decisions, and because emotionally educated individuals are better prepared to handle adverse situations, continued research on the format and effectiveness of TEEMs in decreasing risky behaviors is necessary. Second, because many risky situations may be characterized by both positive and negative emotions, it is important to determine which emotions should be targeted to maximize the effectiveness of the health message. The valence of the message may depend on the normative expertise of the communicator, though that was not the case in the current study. Therefore, further research is needed to investigate potential differences in targeting positive and negative emotions, and prosocial and selfish emotions, and how they interact with normative influences and viewer characteristics. Third, recipients of persuasive messages respond both rationally and emotionally, making it necessary to understand the individual and combined effects of both processes on persuasive outcomes. This research sought to understand how narrative persuasion using different narrative styles (emotional vs. imperative) influences both affective and rational processing, and how these variables further impact attitudes and behaviors. Fourth, attitudes and behaviors are multidimensional, and these dimensions should be examined both individually and jointly. The current study found that the attitude dimensions impacted intentions to use condoms differentially. Furthermore, intending to access condoms was the primary motivator for engaging in a number of behaviors related to condom use, suggesting that the availability and

accessibility of condoms is an important and distinct factor that should be examined specifically in future research. Finally, research on entertainment-education points to the effectiveness of embedding health messages in entertainment programming to promote knowledge, attitudes, and behaviors while decreasing reactance and counter-arguing.

Entertainment-education messages are costly and difficult to implement, and the long-term effects are questionable. Therefore, research on TEEMs is valuable for health practitioners and message designers, because TEEMs provide a brief, cost-effective alternative to entertainment-education messages, that also allow for more accurate measurement of both short- and long-term outcomes.

Of course there are some questions this study cannot answer. The current project focused on the effectiveness of TEEMs in promoting condom use and safe sex among college students. Because emotions influence a variety of risky behaviors (e.g. texting and driving, binge drinking, drug use), it is likely that TEEMs will be effective in other contexts, but the current project does not address the applicability of TEEMs outside of condom use. Furthermore, the current study utilizes a convenience sample of undergraduates, so the generalizability of the findings to other populations is questionable. Finally, the videos used in the current project portray female characters discussing condom use, thereby limiting the perspective of the message. Though Sanderson and Yopyck (2007) found females to be more persuasive in video interventions than males, it is important to include male characters, as well as a cross-sex pair, engaging in a conversation about condom use.

Future research will be able to mitigate these limitations by designing TEEMs that target different types of risky and health-related behaviors and other emotionally-driven contexts, while also considering different types of populations. While college students are a useful general

population for examining behaviors like binge drinking or texting and driving, other populations may be targeted more specifically for different types of behaviors. For example, adolescents may be a more appropriate population for decreasing bullying behaviors, while adult females are a more appropriate audience for TEEMs designed to target behaviors like regular mammograms and screening. Future research should also consider the communicators in the videos and determine what characteristics are important for delivering the message with the most impact. Perhaps male characters should be utilized for decreasing bullying, binge drinking, texting and driving, and other reckless behaviors in which males tend to engage (Kimmel, 2008).

Ultimately, this research is important because it will help individuals make healthier decisions in a variety of contexts, including sexual encounters. Effective emotional education prepares individuals to anticipate and cope with emotional experiences associated with risky behaviors, making them better prepared to handle these situations rather than acting on their emotions impulsively. Existing research supports the importance of emotion in decision making, so researchers can utilize information from the current project to design health messages that target specific emotions associated with specific behaviors, thereby improving the quality and effectiveness of various health campaigns.

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