AUDIENCE INVOLVEMENT WITH ENTERTAINMENT-EDUCATION PROGRAMS: EXPLICATING PROCESSES AND OUTCOMES

BY

JESSIE MARGUERITE QUINTERO JOHNSON

DISSERTATION

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Doctoral Committee:

Associate Professor David Tewksbury, Chair
Associate Professor Travis Dixon
Associate Professor Kristen Harrison
Associate Professor Rick Busselle, Washington State University
Dr. Catlainn Sionean, Centers for Disease Control
ABSTRACT

One area of health promotion research rich with potential for both theoretical and empirical investigation is the *entertainment-education* (EE) strategy. Though a growing body of evidence points to the effectiveness of the EE strategy, further investigation is needed to explore the underlying cognitive and affective processes that make EE an effective tool for health persuasion. The goal of this study was to explore the various dimensions of audience involvement with four award-winning EE programs about sexual and reproductive health topics made for primetime television audiences. Audience involvement with EE messages was assessed using Green and Brock’s transportation scale, Busselle and Bilandzic’s (2010) narrative engagement scale, and several measures of processes related to involvement with the EE program characters. These measures include perceived similarity, parasocial interaction, experiential identification, likability, and wishful identification. Findings suggest that audience involvement influences a number of cognitive and affective responses to EE messages including counterarguing, the perception that message-related health topics are personally relevant, state reactance, and program enjoyment. Findings also indicate that some of the dimensions of audience involvement are related to story-consistent changes in participants’ health beliefs, attitudes, and behavioral intentions. The results of this study suggest that audience involvement with EE programs is multifaceted and important to the outcome of exposure to this programming. The EE strategy holds great promise for future health promotion efforts aimed at improving the health and well-being of diverse audiences.
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CHAPTER 1

INTRODUCTION

Though scholars have long recognized the persuasive power of narratives, the burgeoning field of health communication has a relatively short history of exploring the utility of embedding stories with important health information in order to inspire important micro and macro-level health changes. One area rich with potential for both theoretical and empirical investigation is the use of entertainment-education. An intentional, purposeful message design strategy, entertainment-education (EE) is the process of carefully targeting an audience with entertaining stories that feature educational health information in order to promote various health outcomes (Singhal & Rogers, 2004).

EE messages are used in a variety of media texts including radio programs, television programs, and written messages (Singhal & Rogers, 2004). Such messages can be created to appear in a single episode of a television drama series (in a few lines of dialogue between characters, for example) or, alternatively, in an entire radio or television program drama series over the course of several months (Greenberg, Salmon, Patel, Beck, & Cole, 2004). Recent examples of EE television programs include storylines in Grey’s Anatomy about organ transplantation and donation, a recent episode from the George Lopez show that featured information about how to prevent kidney disease, and a multiple-episode storyline in both the Army Wives television program and its fan club website that featured information about traumatic brain injury (Hollywood, Health, and Society, 2010). EE messages span a variety of genres, health and social topics, and media.

The appeal of using stories to engage audiences with important health information is that, unlike more traditional health marketing strategies like public service announcements or paid
advertisements, stories are less likely to limit the extent to which researchers and practitioners can communicate important health information to audiences (substantially more educational information can be written into a 40-minute primetime television program with multiple characters and plotlines than into a 30-second PSA, for example). Beyond adding richness and depth to the presentation of health information, the ways in which audiences process stories also enhances the utility of the EE strategy. As the following review will demonstrate, watching an engaging television program with interesting characters is inherently more entertaining and potentially less likely to invoke negative responses than is exposure to a short advertisement designed with the obvious intent to persuade (Piotrow & de Fossard, 2004; Slater & Rouner, 2002). Though a substantial body of evidence points to the effectiveness of using EE messages to inspire positive health changes (see Singhal, Cody, Rogers, & Sabido, 2004 for a review), researchers have acknowledged that the novelty of the EE strategy necessitates further theoretical and empirical investigation (Greenberg et al., 2004; Moyer-Guse, 2008). In particular, more information is needed to explore how audiences process EE messages in ways that enhance and inhibit favorable health outcomes.

The goal of this study is to build on the existing literature to examine the cognitive and affective processes that underlie audience involvement with carefully constructed EE programs made for primetime television audiences. In order to achieve this end, this study has three main objectives: 1) to provide a comprehensive conceptual and operational explication of how audience involvement with EE programs influences cognitive and affective responses to those programs; 2) to assess the various dimensions of audience involvement with EE messages and the relationships among those dimensions; and 3) to examine the influence of audience involvement on health outcomes.
Objective One: Explicating the Influence of Audience Involvement

Central to building our theoretical and empirical understanding of the EE strategy is an exploration of the underlying processes that make EE messages influential. The first objective of this study is to explicate how audience involvement with EE programs influences the cognitive and affective responses that both facilitate and impede the persuasion. There are three cognitive responses of interest in the present study. First, this study will use two thought-listing procedures to explore the influence of audience involvement on cognitive elaboration. Using the retrospective thought-listing technique to investigate participants’ thoughts provides important information about the cognitions most accessible immediately following exposure to EE programs. Analyzing the viewers’ thoughts about EE programs provides insight about both the cognitions related to the health-related storylines in EE programs and thoughts about the program characters. Moreover, thought-listing data can be used to create an index of involvement wherein more story-related thoughts reflects a higher level of involvement. Second, the thought-listing data will be used to generate an index of counterarguing. Using the thought-listing task to measure the extent to which audiences criticize various elements of EE programs is another useful way to assess the influence of audience involvement with EE programs. Finally, this study will explore the influence of audience involvement on the perception that the health topics featured in the EE messages used in this study are personally relevant. Assessing the influence of audience involvement on personal relevance will provide useful information about the qualities of EE messages that enhance the perception that certain health issues are important.

This study will also provide an assessment of the influence of various dimensions of audience involvement on two affective responses. First, the degree to which different facets of
audience involvement enhance negative affective arousal will be explored. By assessing the influence of audience involvement on state reactance, researchers will better understand how to design messages that inhibit the kinds of negative emotional responses that hamper persuasion. Second, this study will feature an investigation of the extent to which the various dimensions of audience involvement influence enjoyment. Although researchers have long recognized that enjoyment is central to the experience of being entertained, no empirical investigations to date have explored the impact of audience involvement with EE messages on enjoyment. The EE strategy depends on the presentation of entertainment storylines in order to persuade audiences. Exploring how the various dimensions of audience involvement influence enjoyment will therefore yield important information about how to optimize the likelihood that audiences positively evaluate EE messages.

**Objective Two: Assessing Audience Involvement**

Central to building a corpus of research that explores the effectiveness of the EE strategy is the empirical investigation of the dimensions of audience involvement with EE messages and the relationships among those dimensions. Audience involvement with EE messages will be assessed in two ways. First, both Green and Brock’s (2000) transportation imagery scale and Busselle and Bilandzic’s (2010) narrative engagement scale will be used to measure the degree to which audiences become phemenologically involved with the story elements in EE programs. In particular, these scales will be used to evaluate the experience of being involved with EE stories, the ease with which audiences can make sense of EE stories, and the degree to which viewers feel emotionally engaged with those stories. Although transportation has been most frequently used in the EE literature, Busselle and Bilandzic’s (2010) recent introduction of the narrative engagement scale—which can either be used as a composite measure of audience
involvement or as a set of four subscales that assess different facets of story involvement—presents an opportunity to compare the predictive utility of two validated scales designed to audience involvement with EE messages.

The second way that audience involvement will be assessed in this study is by measuring various facets of audience involvement with the characters in EE messages. The presentation of engaging characters with whom the audience can identify is central to the EE strategy (Singhal & Rogers, 2004). Unfortunately, the multifaceted nature of character involvement has often been obscured by the proliferation of conceptual definitions (and the various operationalizations of those concepts) that seek to describe the ways audiences become involved with and make assessments about the characters in EE messages. In addition to clarifying the conceptual and operational distinctions among perceived similarity, parasocial interaction, identification, likability, and wishful identification, the purpose of this study is to explore the influence of these processes related to character involvement on both cognitive and affective responses to EE messages. Ultimately, this investigation is concerned with the influence of these character involvement processes on health outcomes.

Objective Three: Assessing the Influence of Audience Involvement on Health Outcomes

The final objective of this study is to explore how audience involvement influences three key health outcomes: beliefs, attitudes, and behavioral intentions. In particular, this study will seek to explain the underlying processes that influence the effect of exposure to EE messages on story-consistent changes in participants’ beliefs, attitudes, and behavioral intentions. In addition to exploring how audience involvement directly influences these health outcomes, this study will investigate the degree to which the cognitive and affective message responses of interest mediate the influence of audience involvement on the health outcomes of interest. This study will also
explore the degree to which the various cognitive and affective responses to EE messages have a direct influence on participants’ story-consistent health beliefs, attitudes, and behavioral intentions.

**Preview of Study**

Ultimately, it is the goal of this study to advance our understanding of how EE messages are processed and lay important theoretical and empirical groundwork. Ideally, this study will be one upon which future scholars can expand the investigation of how best to engage audiences with important health information in order to inspire health change. The thesis is divided into six chapters. In the second chapter, I provide a literature review of the various theoretical and empirical approaches to audience involvement with stories. I also provide a series of predictions and research questions about the influence of the different facets of audience involvement on the cognitive, affective, and health outcomes of interest. In the third chapter, I discuss the experimental design I used to explore the hypothesized relationships among the concepts of interest, the stimulus, and the ways in which I chose to operationalize the constructs of interest. In the fourth chapter, I detail the results of my analyses. In the fifth chapter, I provide a discussion of the significance of my findings as well as the strengths and limitations of the study. Chapter six provides a summary of this study and its key contributions to the study of the EE strategy. The appendix contains the survey instrument in the study.
CHAPTER 2
LITERATURE REVIEW

Central to the purpose of this study is an examination of the various theoretical frameworks that describe and predict how audiences become involved with the narratives in EE messages, which broadly refer to the story elements like plot, story characters, scenes, and conflicts, within those messages. The study of narrative involvement can be used to enhance our understanding of the processes that make the EE strategy an effective tool for health persuasion. Because audiences process narratives in ways that inhibit the defensive responses most common to overtly persuasive messages, the effectiveness of the EE strategy is contingent upon the unique blend of entertaining story and persuasive health information message features (Dal Cin, Zanna, & Fong, 2004, Moyer-Guse, 2008). Research suggests that the ways audiences process EE messages are different from the processing of overtly persuasive health messages for two key reasons.

First, the latent nature of the persuasive health content in EE messages reduces audience resistance to persuasion. Because EE messages are developed to entertain their audiences, the persuasive health content in those messages is less obvious (Slater, 2002). EE messages are effective precisely because the persuasive subtexts are embedded in entertainment content and, therefore, impede the audience’s awareness of exposure to counter-attitudinal information (Dal Cin, Zanna, & Fong, 2004). Second, the ways in which audiences process the stories in EE messages enhances the likelihood of persuasive message effects. Unlike overtly persuasive health messages, the story elements found in EE messages promote what has often been called a “willing suspension of disbelief” in which audience members abstain from critical viewing or listening in order to enjoy a story (Gerrig & Rapp, 2004, p. 268; Slater and Rouner, 2002). In fact, the notion that audiences suspend disbelief has become somewhat antiquated and has been
replaced by a commonly held assumption that belief is the default modus operandi for processing information (until it becomes necessary, or relevant, to critically scrutinize information) (Gilbert, 1990; Prentice & Gerrig, 1999). The narrative content in EE messages encourages the audience to become involved in story elements rather than engaging in a critical assessment of the persuasive claims that are made in such messages (Slater & Rouner, 2002). Here, further explication of the theoretical underpinnings of audience involvement with narrative content is warranted.

**Audience Involvement with Narratives**

Researchers generally concur that audience involvement with persuasive health messages is the single most important factor that influences all message effects, especially health outcomes. Central to our understanding of the persuasive power of the EE strategy is the examination of the various theoretical approaches that researchers can use to explain how audiences become involved with EE messages. In her examination of audience involvement with an EE radio program, Sood (2002) suggested that there are two dimensions to audience involvement with EE messages.

The critical-cognitive dimension is characterized by a critical reflection of the EE message wherein audiences distance themselves from the text and scrutinize the elements of the text and think about the message itself. The affective-referential dimension, on the other hand, is characterized by involvement with EE story characters (e.g., identification) and thinking about how the story relates to one’s own life. Sood’s framework is useful because it draws attention to the multidimensional nature of audience involvement with EE messages. On the one hand, researchers must consider the degree to which audience involvement with EE messages consists of critical scrutiny to persuasive message claims. Audience involvement with persuasive health
messages has tended to focus on the capacity for those messages to inspire cognitive elaboration (i.e., the degree to which the audience produces message-related cognitions) and counter-arguments (i.e., criticisms) in response to persuasive message claims. Although EE messages do have the capacity to inspire cognitive elaboration and counterarguments, these processes alone are not sufficient to account for the ways in which audiences become involved with EE messages.

As Sood’s (2002) model suggested, we must recognize that audience involvement with EE messages is also comprised of affective and experiential components. Unlike overtly persuasive health messages, EE messages are designed to inspire audience involvement through story elements, not just persuasive health topics. Although it is useful to consider message processing theories that speak directly to the impact of audience involvement with the persuasive health claims in EE messages, theoretical and empirical attention to the processes that are unique to audience involvement with EE stories is also warranted. One such approach employs a mental models framework to audience involvement with EE messages wherein persuasive message outcomes are byproducts of the process of constructing mental models to make sense of story elements (Busselle & Bilandzic, 2008). This approach to audience involvement suggests that the process of exerting one’s cognitive energy to construct mental models stimulates perspective taking, the phenomenological experience of being transported into a story, and ultimately, outcomes like enjoyment and attitude change. To adequately assess the boundaries of narrative persuasion, it is necessary to understand the cognitive, affective, and experiential aspects of audience involvement with EE messages.

**Involvement as cognitive elaboration.** Using Petty and Cacioppo’s (1986) elaboration likelihood model (ELM) to explain audience involvement with the persuasive information in EE
texts is one useful approach to understanding the underlying cognitive processing mechanisms that enhance the capacity for EE messages to inspire persuasive outcomes. According to the ELM, audience involvement with EE texts is a function of the extent to which the message topic is personally relevant (Slater and Rouner, 2002). Message topics that are perceived as personally relevant enhance the degree to which one attends to the central premises and arguments in an EE message (i.e., central processing). When a message features a topic that is deemed irrelevant, individuals pay less attention to the central claims made in that message and instead focus on the less important cues like source credibility, attractiveness, and message elements like lighting, sound, and aesthetics (i.e., peripheral processing) (Petty & Cacioppo, 1986; Petty & Wegener, 1999; Slater & Rouner, 2002).

In the ELM framework, persuasion is moderated by the extent to which audiences are involved with the central claims made in a message. An individual who is highly invested in a message topic will attend more carefully to that message, thereby increasing the likelihood that he or she will both notice and think about persuasive message claims. Involvement, then, is assessed by measuring the degree to which a person produces message-related cognitions. Encounters with messages that are perceived to be problematic elicit counterarguments – disagreements with message claims – which in turn, reduce perceived message persuasiveness. Though this conceptualization of message involvement may be helpful for determining the degree to which audience members engage in systematic processing of overtly persuasive messages, the unique blend of persuasive health information and entertaining stories featured in EE messages has led some researchers to modify the ELM in order to better capture the nature of audience involvement with persuasive messages that use a narrative story structure.
Involvement as experience. Because EE messages are designed to entertain audiences through powerful stories that feature engaging characters, researchers have suggested that it is more accurate to conceptualize involvement in a way that adequately acknowledges the importance of those story elements. From this theoretical perspective, an individual’s involvement with the story rather than the persuasive health topic determines the extent to which an EE message will have persuasive outcomes. According to Slater and Rouner’s (2002) “extended ELM” (E-ELM), issue involvement is replaced by involvement with the narrative and identification with the characters. Rather than conceptualizing involvement strictly in terms of the extent to which the audience produces cognitions related to the persuasive claims made in persuasive messages, involvement with EE messages is a function of engagement with the story elements (Slater & Rouner, 2002). In the E-ELM framework, the emphasis on issue involvement is replaced by the experience of story involvement (Slater & Rouner, 2002).

Though researchers have employed a number of terms to describe the phenomenological experience of becoming involved in a story (e.g. absorption, presence, transportation), most researchers agree that narrative involvement is characterized by becoming so enthralled with a story that one ceases to be aware of oneself, forgets one’s surroundings, and is somehow changed by the experience of being immersed in the experiences of a story character’s actions and emotions (Green & Brock, 2000; 2004; Slater & Rouner, 2002; Slater, 2002). Green and Brock (2000) refer to the experience of being “lost” in a story as transportation. Transportation is measured by assessing cognitive attention to the narrative, emotional involvement with the story and story characters, feelings of suspense, a lack of awareness of surroundings, and mental imagery (Green & Brock, 2004, 2000).
Outcomes Related to the Experience of Audience Involvement with Narratives

Central to the examination of the experience of being involved with EE stories is an investigation of the persuasive effects related to this experience of being highly transported by persuasive stories. As the following review suggests, transportation has the capacity to influence various cognitive and affective responses to EE messages, and subsequently, influence health outcomes.

**Reduced counterarguing.** According to Slater and Rouner (2002), the experience of involvement with stories should inhibit counterarguing because this kind of involvement is fundamentally incompatible with the heightened cognitive demand required for such critical scrutiny. As Moyer-Guse (2009) suggested in her entertainment overcoming resistance model (EORM), transportation into narratives should reduce persuasive resistance by reducing the audience’s capacity to produce counterarguments about persuasive message claims in those narratives. Indeed, Green and Brock’s (2000) early work demonstrated that highly transported individuals were less likely to engage in “false-noting” (a device, akin to counterarguing, used to measure participants’ attention to inconsistencies or partial truths in the story). Although the false-noting procedure is not a precise measure of counterarguing, other attempts to ascertain the relationship between transportation and counterarguing have failed.

Green and Brock (2000) reported that too few responses pertained directly to the persuasive message topic when they attempted to obtain thought-listing data to measure counterarguing. Slater and Rouner (2002) also reported that attempts to collect thought-listing data from participants who were assigned a persuasive story were only minimally successful (less than 3% of the total responses pertained to the persuasive health topic). Slater and Rouner (2000)
suggested that counterarguing is just more rare when audiences are processing persuasive narratives than when they are processing overtly persuasive messages.

More recently, Moyer-Guse & Nabi (2010) demonstrated that, contrary to theoretical predictions, audience reports of transportation into a health-related narrative were positively associated with counterarguing. Because the researchers used close-ended items to measure counterarguments, those items did not allow researchers to distinguish between the types of counterarguments that the audience produced. Moyer-Guse and Nabi suggested that it is possible that an increase in the number of counterarguments was associated with enhanced elaboration of the dramatic narrative because the “targets” of those counter-arguments were characters. In other words, highly transported individuals perceived that they were “arguing” with the characters rather than arguing with the persuasive subtexts in the story. However, more research is needed to explore the relationship between counterarguing and transportation. Open-ended assessments of counterarguing, for example, might allow researchers to examine the targets of those counterarguments with more specificity. In particular, assessing the frequency and nature of counterarguments by measuring open-ended thoughts would allow researchers to ascertain the relationship between transportation and critical thoughts about the persuasive subtexts of an EE story.

Measurement error aside, we have strong theoretical reasons to expect that heightened levels of experiential audience involvement should be related to less counterarguing. Central to the purpose of this study is an examination of the relationship between transportation and counterarguing. To avoid the confounding of the measurement of counterarguing and the nature of the relationship between counterarguing and transportation, an open-ended thought-listing
task will be used to assess audience members’ story-consistent counter-arguments. The following hypothesis will be tested:

H1: Transportation will be negatively associated with counterarguing.

**Enhancing story-consistent beliefs, attitudes, and behavioral intentions.**

Theoretically, we might also expect to find that when the capacity to engage in counterarguing is hampered by the experience of being highly transported into an EE story, audience members will produce more story-consistent beliefs after message exposure. Indeed, in their early studies on the persuasive effect of transportation, Green & Brock (2004, 2000) demonstrated that higher levels of transportation were associated with more message-consistent beliefs. The capacity for transportation to influence health-related message beliefs is especially important to the EE strategy. From a health behavior perspective, one’s health-related beliefs are the cornerstone upon which all health-related behaviors are determined. In addition to replicating empirical evidence that suggests that greater transportation should be associated with story-consistent beliefs, one purpose of this study is to explore the influence of transportation into an EE program on audience members’ health-related beliefs, attitudes, and behavioral intentions. Drawing from the theory of planned behavior framework, we should expect to find that heightened involvement with an EE program influences behavioral intentions to perform a recommended behavior. Behavioral intentions are determined, in part, by one’s beliefs about and attitudes toward a particular behavior (Ajzen, 1991). Therefore, we should find that transportation into an EE program that influences one’s beliefs about a health topic will subsequently influence attitudes and behavioral intentions toward that health topic.

Just as we might expect transportation to have a direct influence on health attitudes, beliefs, and behavioral intentions, it is also reasonable to expect that the degree to which
transportation influences health outcomes will be mediated by counterarguing. In her EORM, Moyer-Guse (2008) suggested that audience involvement with EE messages should enhance story-consistent attitudes and behaviors by reducing the resistance to persuasion. Because transportation is expected to have a negative influence on counterarguing, one important type of resistance to persuasion, we should expect to find that the degree to which a person produces story-consistent counterarguments will influence story-consistent health beliefs, attitudes, and behavioral intentions. Therefore, the following hypotheses will be tested:

H2a: Transportation will be positively associated with story-consistent health beliefs.

H2b: Transportation will be positively associated with story-consistent health attitudes.

H2c: Transportation will be positively associated with story-consistent health behavioral intentions.

H3: Counterarguing will mediate the influence of transportation on story-consistent health-related beliefs, attitudes, and behavioral intentions.

**Enhancing cognitive elaboration.** In addition to exploring the influence of transportation on counterarguing, this study will examine the relationship between transportation and cognitive elaboration. Because researchers have suggested that involvement with stories should reduce critical scrutiny to persuasive message claims and therefore enhance message-consistent beliefs, it is reasonable to expect that highly transported individuals will also produce more general story-consistent thoughts than will non-transported individuals (Slater, 2002). We might also expect to find that story-consistent cognitive elaboration moderates the influence of transportation on story-consistent beliefs, attitudes, and behavioral intentions. The experience of being highly transported into an EE message will enhance the production of story-consistent thoughts, which in turn, will enhance the likelihood that a person’s health-related beliefs,
attitudes, and behavioral intentions will be aligned with the health message to which they were exposed. Therefore, the following hypothesis will be tested:

H4: Heightened levels of transportation will be positively associated with story-consistent cognitive elaboration.

H5: Cognitive elaboration will mediate the influence of transportation on story-consistent health beliefs, attitudes, and behavioral intentions.

**Enhancing personal relevance.** Another outcome of interest is the extent to which heightened levels of transportation influence the perception that a health-related topic in an EE message is personally relevant to the audience. Traditional conceptualizations of audience involvement treat personal relevance as a moderating factor (one that enhances the likelihood of cognitive elaboration about persuasive message claims). However, personal relevance might be more appropriately viewed as an outcome when researchers are interested in investigating the experiential aspects of audience involvement with an EE story. Moyer-Guse (2008) suggested that the audience’s connection with story characters influences the extent to which one perceives that a health topic is personally relevant by enhancing perceived vulnerability. Although the influence of being highly involved with story characters will be explored in more detail below, it is difficult to imagine how the experience of being highly transported would not have the same kind of influence.

It is reasonable to expect that the experience of being transported into a story will also *directly* influence a person’s perception that the health topic featured in an entertaining, highly engaging story is somehow personally relevant. In the present study, the degree to which one’s perception that a health topic is personally relevant mediates the influence of transportation on health outcomes will also be explored. As Moyer-Guse (2008) suggested in her EORM, enhancing the degree to which people perceive that they are personally vulnerable to a health
risk should enhance story-consistent health outcomes. Personal relevance, then, should influence story-consistent health beliefs, attitudes, and behavioral intentions. Therefore, in the present study, the following hypothesis will be investigated:

H6: Transportation will be positively associated with the perception that a story-related health topic is personally relevant.

H7: The perception that a health topic is personally relevant will mediate the influence of transportation on health beliefs, attitudes, and behavioral intentions.

**Reducing reactance.** Just as we might expect transportation to influence a person’s cognitive responses to an EE message, it is also reasonable to expect that the experience of transportation will influence affective responses to EE messages. One affective response that has received a lot of attention in the examination of the EE strategy is **reactance.** In her EORM, Moyer-Guse (2008) suggested that the narrative structure in EE messages reduces the likelihood that individuals will experience psychological reactance, a form of arousal that occurs when one perceives that one’s freedom is being threatened (see also Brehm, 1966). Because EE messages rely on subtle forms of persuasion, unlike overtly persuasive messages, those messages should naturally inhibit reactance. Although Moyer-Guse’s model also posits that EE messages reduce reactance through involvement with EE story characters, it is feasible to expect that the experience of transportation itself might reduce reactance. Heightened levels of involvement with a story that features persuasive health information (but in ways that are subtle and less obtrusive that overtly persuasive health messages) might alleviate the sense that one’s freedom to make health-related decisions is being threatened. The experience of being transported into an EE story might lend itself to the reduction of psychological resistance to persuasive suggestion because such an experience has the potential to heighten positive affect (and therefore, minimize negative affect states that form the basis for reactance) (Green, Brock, & Kaufman, 2004).
Moreover, reducing psychological reactance should also enhance the degree to which a health message influences the audiences’ story-consistent health beliefs, attitudes, and behavioral intentions (Moyer-Guse, 2008). Individuals who experience less state reactance should be more amenable to the persuasive health claims made in EE messages. Reactance, then, should mediate the influence of transportation on health outcomes. Therefore, the following hypothesis will be examined:

H8: Transportation will reduce psychological reactance.

H9: Psychological reactance will mediate the influence of transportation on health beliefs, attitudes, and behavioral intentions.

**Enhancing story enjoyment.** Another important affective response related to the experience of being highly involved with an EE story is *enjoyment*. Nabi and Krcmar (2004) conceptualized media enjoyment as tripartite. Enjoyment, they suggested, is an *attitude* comprised of affective, cognitive, and behavioral dimensions. The affective dimension is comprised of empathy and moods experienced by the audience member; the cognitive dimension is comprised of the judgments that the audience makes about the characters and the story itself; and finally, the behavioral dimension is focused on how the audience member engages in selective attention to the program. Researchers have suggested that transportation may be a strong contributor to media enjoyment (Green, Brock, & Kaufman, 2004). One obvious reason that transportation might predict enjoyment of media content is simply that people like the experience of being deeply engrossed in a story (Busselle & Bilandzic, 2010). A second reason that transportation might inspire enjoyment is that the experience of being transported into a story hampers one’s sense of self-awareness. Consequently, individuals are relieved from the negative mood states they may have had prior to story exposure (Green, Brock, & Kaufman, 2004). One purpose of the present study is to provide empirical evidence of the influence of
transportation into EE programs on audience members’ enjoyment of those programs. The following hypothesis will be tested:

H10: Transportation will be positively associated with enjoyment of EE programs.

Another goal of this study is to ascertain the extent to which enjoyment mediates the influence of transportation on health outcomes. EE researchers spend a great deal of time conducting formative research to create engaging and enjoyable messages. Indeed, researchers recognize that the degree to which media content is enjoyable is central to what defines that content as entertaining (Raney, 2006). Because enjoyment is so central to the EE strategy, it is worthwhile to assess the influence of enjoyment on intended message effects, particularly those health effects that are most relevant to the EE strategy. Therefore, the following research question will be investigated:

RQ1: To what extent does enjoyment mediate the influence of transportation on health beliefs, attitudes, and behavioral intentions?

In summary, one of the major goals of the present study is to explore the influence of audience involvement with EE messages on the both the processes underlying health persuasion and the persuasive outcomes. As researchers move toward a more sophisticated understanding of how audiences become involved with health messages that utilize a narrative structure, it is especially important to examine how the experience of involvement with stories is related to health persuasion. As depicted in Figure 1, this study will examine the relationships among transportation and important cognitive responses to EE messages (cognitive elaboration, counterarguing, and perceived relevance); two affective responses (psychological reactance and enjoyment); and finally, the degree to which those cognitive and affective responses mediate important health outcomes (health beliefs, attitudes, and behavioral intentions).
Although the experience of feeling transported appears both theoretically and empirically significant in our examination of the processes and outcomes related to audience involvement with EE stories, researchers have suggested that the experience of transportation is only one dimension of a more elaborate process of becoming involved with a narrative. According to Busselle and Bilandzic’s (2008) model of narrative comprehension and engagement, audience involvement with a narrative is a process that occurs when one’s cognitions are focused on constructing the necessary mental models to make sense of a narrative. This task of ongoing mental model construction requires complete focus which can be understood as the phenomenological state in which one finds oneself when losing self-awareness (i.e., transportation). This phenomenological experience, according to Busselle and Bilandzic (2010), is just one dimension of a broader construct called narrative engagement.
Narrative Engagement

Although transportation has been identified as one of the primary mechanisms through which EE messages influence their audiences, researchers have suggested that transportation represents only one facet of the experience of involvement with narratives. In their explication of the processes underlying audience involvement with narratives, Busselle and Bilandzic (2010) contend that the experience of being involved with a narrative, what they refer to as *narrative engagement*, is actually comprised of four distinct dimensions: narrative presence, narrative understanding, attentional focus, and emotional engagement. Each of these dimensions of narrative engagement is central to the capacity for narratives to inspire persuasion and influence health outcomes. It seems, then, that an examination of the influence of the experience of involvement with the narratives in EE programs must include an assessment of the four dimensions of narrative engagement (and not just transportation).

Busselle and Bilandzic (2010) suggest that the experience of feeling transported into a narrative occurs because comprehension of stories requires a deictic shift, wherein the audience members replace their sense of time and location from the “real world” to the “story world.” This shift in perspective results in what they call *narrative presence* (the first of the four dimensions of narrative engagement). Like transportation, narrative presence relates to the sensation of losing self-awareness and entering into another world. Whereas the narrative presence dimension of narrative engagement describes the experiential phenomenon of being involved with a narrative, the other dimensions of Busselle and Bilandzic’s narrative engagement construct describe the cognitive and affective dimensions of story involvement. *Narrative understanding*, for example, describes how audiences make sense of and understand a narrative whereas *attentional focus* describes the extent to which audiences are focused on a narrative and
distracted by thoughts unrelated to a narrative. *Emotional engagement*, the fourth dimension of narrative engagement, describes the emotions that audiences have about or toward story characters (experienced as sympathy or empathy).

In addition to providing researchers with a framework for measuring both the cognitive and affective dimensions of audience involvement with a story, Busselle and Bilandzic’s conceptualization of narrative engagement also allows for the investigation of how different dimensions of audience involvement with narratives predict message outcomes. In their empirical validation of the narrative engagement construct, Busselle and Bilandzic (2010) found that all four subdimensions of narrative engagement were significantly and distinctly related to story-consistent attitudes and story enjoyment.

Central to the purpose of the present study is an investigation of how narrative engagement functions in the context of the EE message genre. This study is focused on exploring the degree to which the different components of narrative engagement are related to cognitive, affective, and health outcomes. In particular, one goal of the present investigation is to determine whether transportation or narrative engagement with EE programs better predicts the message outcomes of interest. Theoretically, it is reasonable to expect that narrative engagement with an EE message, like transportation, should reduce (a) counterarguing and (b) psychological reactance and increase (c) story-consistent cognitive elaboration, (d) the perception that a message-related health topic is personally relevant, (e) program enjoyment, and (f) changes in story-consistent beliefs, attitudes, and behavioral intentions. Similarly, the cognitive responses (counterarguing, cognitive elaboration, and perceived relevance) and the affective processes (reactance and program enjoyment) should mediate the influence of narrative engagement on
health beliefs, attitudes, and behavioral intentions (as depicted in Figure 2). Therefore, the following research question will be addressed:

**RQ2:** Does a path model that employs the narrative engagement construct better fit the data for the hypothesized relationships among audience involvement, cognitive and affective responses, and health outcomes, than does a model that employs the transportation construct?

One of the central contributions of Busselle and Bilandzic’s conceptualization of narrative engagement as a multidimensional construct is that researchers can explore the degree to which the unique but interrelated dimensions of narrative engagement predict the cognitive, affective, and health-related message outcomes. Therefore, the following research questions will be investigated:

**RQ3:** Do narrative engagement and transportation have similar relationships with the cognitive and affective responses to EE messages, and story-consistent health outcomes?
Audience Involvement with EE Story Characters

Central to the study of how audiences become involved with EE messages is the examination of how audiences become involved with the characters in those messages. Researchers have long acknowledged that the capacity for stories to affect audience members through the presentation of engaging character depictions is essential to the EE strategy (Singhal & Rogers, 2004). Involvement with story characters has been approached from a number of theoretical perspectives and has often been referred to as identification. The term identification has been used to describe a host of processes related to audience involvement with story characters including 1) the extent to which individuals perceive that they are similar to a story character (e.g., perceived similarity, homophily); 2) the pseudo-relationship that one has with a character (e.g., parasocial interaction); 3) the experience that a person has when he or she becomes engaged in a character depiction; 4) the judgments that audiences make about various character attributes, including the attractiveness and likability of a character; and finally, 5) the degree to which a person desires to emulate a character (Cohen, 2001; Eyal & Rubin, 2003; Hoffner, 1996; Moyer-Guse, 2008).

Despite the tendency to obscure the important conceptual distinctions between these processes, researchers have acknowledged that all of these mechanisms play an important and distinct role in explaining how audiences become involved with story characters (Moyer-Guse, 2008). From this point forward, the term character involvement will be used to refer broadly to these various processes related to audience involvement with EE story characters. One goal of the present study is to conceptualize and test a model of character involvement that incorporates all of these processes that are related to ways in which audiences become involved with EE story characters. This model has two main purposes. First, providing a unified model that
incorporates all of the processes related to involvement with story characters gives researchers clear conceptual and operational definitions to use in their assessments of how audiences interact with and perceive story characters. Second, this model provides a framework for assessing the interrelations among the various character involvement processes. Finally, this model will allow researchers to investigate and explain how each component of character involvement influences persuasive outcomes.

As illustrated in Figure 3, the character involvement model encompasses four successive components. The first component is comprised of antecedents, which are the precursors to all subsequent character involvement processes and include the degree to which a person feels similar to a character and the pre-existing relational attachment that one has with a character. The next component in the character involvement model is experiential involvement, which relates to the experience of becoming emotionally involved with a story character. The third component of the character involvement model is comprised of judgments, which are the evaluations one makes about various character attributes as well as the overall likeability of a character. Finally, the fourth component of the character involvement model is comprised of outcomes, which are the effects of one’s interactions with a character and are related to both the likability of a character and the degree to which a person desires to emulate a character. Each component of the character involvement model, and the hypothesized relationships among those components, will be explored in detail below.
Component One: Antecedents

Perceived similarity. The extent to which people perceive that they are similar to a story character has often been considered a prerequisite for involvement with the story character (and the story itself). Central to the EE strategy is the presence of story characters whom the target audience will finding engaging and personally relevant. Although the concept of perceived similarity has often been measured as a predictor of other concepts related to character involvement (e.g., wishful identification), researchers recognize that the judgment audience members make about the extent to which they share commonalities with a story character is itself a distinct concept important to the study of how audiences become involved with story characters (Hoffner, 1996; Hoffner & Buchanan, 2005; Moyer-Guse, 2008). The measurement of perceived similarity is rooted in Andersen and de Mancillas’ (1978) notion of homophily, which they define as “the degree to which interacting individuals are similar to certain ways, such as attitudes, beliefs, background, education, language, etc.” (p. 169). Although homophily was
used originally to study the extent to which audiences perceived that they were similar to public figures, media scholars have since applied the notion of homophily to the study of involvement with media characters (Hoffner, 1996; Eyal & Rubin, 2003).

Assessments of perceived similarity can include evaluations of the extent to which someone perceives that he or she shares similar attitudes, sociodemographic features, or behaviors with a character. Although audiences can potentially draw from a host of attributes to determine the extent to which they are similar to a character, a great deal of theoretical and empirical emphasis has focused on how audiences make judgments about the in-group status of a particular character (i.e., the extent to which a character belongs to the same social group). This complex process of social categorization has been explored in great detail (see Abrams and Hogg, 1990; Tajfel, 1978, or Turner & Giles, 1981), though it is beyond the scope of this review to summarize all of the literature related to social categorization.

According to social identity theory, humans have a distinct need to categorize in order to “systematize and simplify” their environment (Tajfel, 1978, p. 61). In order to make sense of our world, we construct, use and rely on categories that “accentuate(s) similarities among stimuli (whether they are physical, social, or aspects of the self) belonging to the same category and differences among stimuli belonging to different categories” (Hogg & McGarty, 1990, p. 12). Social categorizations allow an individual to determine where and how he or she fits in the world (Tajfel & Turner, 1979). Tajfel and Turner (1979) argue that because of the need to enhance or maintain one’s sense of self-esteem, individuals will seek to construct a positive social identity. The construction and maintenance of one’s positive social identity happens through social comparison processes that enhance one’s perceptions about the favorable qualities of the groups to which that individual belongs (Tajfel & Turner, 1979). The perceptual process of social
comparison that enhances the perception that one’s own in-group members are *more* favorable than one’s out-group members is called *in-group bias* (Turner, 1978).

Social identity theory, then, suggests that the characters who appear in EE messages have the potential to shape how audiences process and response to those messages. Indeed, in her EORM, Moyer-Guse (2008) suggested that perceived similarity should *reduce* the psychological bias of perceived invulnerability. When someone perceives that a character is similar to oneself, it should enhance the extent to which the health topic depicted in an EE message seems personally relevant. Evidence suggests that when people believe a health message is personally relevant, they are more likely to carefully process that message (Kreuter & Wray, 2003; Rothman & Schwarz, 1998). This is consistent with the suggestion that perceived similarity, because it requires a kind of distanced assessment about a story character, must precede experiential involvement with that character.

Here, it is important to acknowledge that, as with interpersonal encounters, audiences might make an assessment about whether or not an EE character belongs to a particular social group during the first few moments of exposure to that character. Audiences might then later re-categorize that character based on information presented as the story unfolds. As suggested in Busselle and Bilandzic’s (2008) model of narrative comprehension and engagement, audiences are continually constructing mental models to understand both stories and the characters that appear in stories. The extent to which an individual engages in a more elaborate assessment of an EE character may depend on the degree to which attention to that character is necessary for understanding the story itself. Nonetheless, as posited by the character involvement model depicted in Figure 3, it is theoretically sound to conceive of perceived similarity as an antecedent to all of the subsequent character involvement processes.
Parasocial interaction. Another important aspect of audience involvement with EE characters relates to parasocial interaction, a phenomenon characterized by the feeling of having a personal, relational attachment to a character (Giles, 2002; Horton & Wohl, 1956; Sood, 2002). Researchers suggest that parasocial interaction has important affective and behavioral dimensions that influence how audiences respond to EE messages (Brown & Fraser 2004; Sood, 2002). In one case study of a popular EE radio program, research found evidence of the three different types of parasocial involvement with EE story characters (Papa, Singhal, Law, Pant, Sood, Rogers, and Shefner-Rogers, 2000).

First, there is cognitively oriented parasocial interaction, defined as the extent to which audience members pay attention to and think about EE characters and their actions. Next, there is affectively oriented parasocial interaction, the degree to which an individual identifies with a particular story character (here, to “identify” with a character is to believe that one’s own interests and a character’s interests are joined). This conceptualization of affectively oriented parasocial interaction might be similar to the concept of perceived similarity, although parasocial interaction can be distinguished from the audience’s perceptions of similarity because similarity is not requisite for formation of a pseudorelationship (Moyer-Guse, 2008). However, it is feasible that perceptions of similarity might actually enhance one’s parasocial relationship with a character. The degree to which a person perceives that he or she is like a character might enhance his or her understanding of a character’s background and motivations, and subsequently, make it easier to form a bond (i.e., pseudo-relationship) with that character. It is also feasible to expect, then, that parasocial interaction will influence other character involvement processes, like one’s emotional involvement with a character (i.e., experiential identification) and the judgments one makes about that character.
Finally, Papa and his colleagues (2000) defined behaviorally oriented parasocial interaction as the extent to which individuals overtly react to story characters. Because it is difficult to imagine how one-time exposure to a story character, in an experimental setting, might inspire behaviorally oriented parasocial interaction (e.g., talking with the characters or responding to them out loud), only cognitively oriented and affectively oriented parasocial interaction will be assessed in the present study.

Component Two: Experiential Identification

Experiential identification. The examination of the experience of identification with characters is rooted in Oatley’s (1999, 1994) theory of identification as simulation. When someone becomes engaged with a narrative, there exists a continuum in which observation resides at one end and identification resides at the other (Oatley, 1999). An audience member who is overdistanced will observe the events of a story unfold from the neutral perspective of a spectator. Alternatively, an audience member may be underdistanced and instead identify and experience a story as if it were actually happening, an experience that lends itself to intense emotions. The experience of identification occurs when audience members enter into the world of the narrative and experience emotions of characters while adopting their goals and their actions.

Drawing from Oatley’s theoretical explanation of identification, Cohen (2001) provided a conceptual definition of the experience of identification with story characters. Cohen (2001) defined identification as the process of imagining oneself being a particular character and replacing one’s own identity with the identity of the character. He claimed that during the identification experience, an audience member ceases “to be aware of his or her social role as an audience member and temporarily (but usually repeatedly) adopt[s] the perspective of the
character with whom he or she identifies” (Cohen, 2001, p. 251). This phenomenological experience of identification is evidenced by a loss of self awareness and heightened emotional and cognitive responses to a character which result in a temporary psychological “merging” of the audience members and the character (Cohen, 2001). Measurements of experiential identification include an assessment of the degree to which one reports he or she has a good understanding of a character’s motivations, goals, and emotions, and the degree to which one feels absorbed in a character depiction.

Busselle and Bilandzic (2010) suggested that the extent to which a person feels for and with story characters reflects the degree to which a narrative inspires emotional arousal. This kind of arousal is essential to the experience of being involved with EE stories. If we conceive of experiential identification as a central process to the experience of being involved with EE characters, then it is important to consider how this experience might influence subsequent character involvement processes. It is reasonable to expect that when a person has an emotionally engaging experience with a story character, it will influence the judgments that person makes about the character. Consider, for instance, the depiction of a story character taken from the experimental stimulus in the present study.

One particular character, who appears to be a very loving husband concerned for the deteriorating health of his wife, makes many heroic attempts to intervene and prolong his wife’s life as the doctors are unable to determine the cause of her poor health. It is feasible to imagine how, over the course of an hour, the audience might become highly involved with this particular character and empathize deeply with his plight to save his wife. This empathic perspective-taking will ultimately influence the audience’s judgment that this character is a good and likeable person. The experience of being emotionally engaged with the character (and being able to
imagine what it would feel like to be in his “shoes”) has influenced their judgments about how likeable he is. Even if the story plot had an unexpected twist and it is revealed that the man had unknowingly infected his wife and put her health in grave jeopardy because he contracted a sexually transmitted infection after making the decision to have unprotected sex while engaged in an one-time extramarital affair, the experience of identifying with that character would still influence the audience’s judgment about the likability of that character (in this case, we can imagine that those judgments would have been negatively influenced). Experiential identification, then, influences the subsequent judgments that one makes about a character.

Finally, it is reasonable to believe that experiential identification might also influence a person’s desire to be like a character (i.e., wishful identification). Indeed, the EE strategy is characterized, in part, by the careful construction of health messages that depict desirable characters who model important health behaviors. Through processes like social learning, these characters are designed to inspire audience imitation (Sood, Menard, & Witte, 2004). The desire to emulate an EE character is rooted in an understanding of the motivations behind that character’s behaviors. Because identification is characterized, in part, by empathy and perspective-taking, we should expect that the experience of identification influences wishful identification.

Component Three: Judgments

Character attributes. The study of how audiences become involved with story characters has often involved an examination of the judgments that individuals can make about a variety of character attributes, including the extent to which a character is attractive, successful, humorous, and powerful (Eyal & Rubin, 2003; Hoffner, 1996; Hoffner & Buchanan, 2005). Providing a comprehensive list of potential character attributes that audiences might assess is
less important to the present study than the recognition that judgments about a character are likely to be influenced by the other processes related to character involvement. Moreover, an examination of the judgments that the audience makes about a character also has the potential to influence important message outcomes. For example, Hoffner and her colleagues found that evaluations of the extent to which audiences perceived that media characters were successful, intelligent, humorous, and attractive predicted wishful identification (Hoffner, 1996; Hoffner & Buchanan, 2005). Any study of the EE message strategy could potentially include an assessment of how the target audience evaluates key characteristics that are central to EE storylines.

**Character likability.** Researchers have suggested that individuals may make judgments about specific character attributes, but ultimately, they arrive at an evaluation of the degree to which a character’s attributes form a favorable or unfavorable impression (Konijn & Van Hoorn, 2005). Rather than measure judgments of a variety of specific character attributes, researchers can simply examine the degree to which audience members believe a character embodies moral goodness (Konijn & Van Hoorn, 2005). The extent to which audiences deem a character’s actions moral or immoral, according to Zillmann’s (1991) model of disposition formation, influences affective dispositions toward story characters. Zillmann’s model suggests most affective responses to story characters are determined by the degree to which a character is deemed likeable. Although it seems plausible for audiences to form judgments about the likability of a character based on their moral evaluations of that character’s actions, Raney (2004) suggests that dispositions toward characters can form separate from the moral evaluations we make about those characters. This is why we can continue to like characters in spite of actions or motivations that are deemed immoral or unethical.
Although the extent to which a person finds a story character likable can be considered a judgment, it is also reasonable to think of this kind of judgment as an outcome. Researchers have suggested that one of the central ways that the EE messages overcome the resistance to persuasion is through the presentation of compelling characters that audiences find likeable (Dal Cin, Zanna, and Fong, 2004). Likeable characters generate fanship and enhance the likelihood that audiences will continue to watch EE programs. For this reason, character liking is depicted in Figure 3 as a process that resides between the judgments and the outcomes components of the character involvement model.

**Component Four: Outcomes**

**Wishful identification.** The term wishful identification has often been used to measure the extent to which an individual desires to be like a media character and emulate that character’s behaviors (Austin & Knaus, 2000; Hoffner & Buchanan, 2005; Hoffner, 1996). Hoffner and Buchanan (2005) noted that while an assessment of the extent to which an individual feels experientially involved with a character depiction might yield interesting findings with respect to an individual’s online message experience, such an assessment fails to fully capture the lasting effects of media character involvement beyond the message exposure situation. Exploring the extent to which a media character inspires wishful identification may be just as important for understanding the effects of involvement with an EE character as the investigation of the extent to which those processes predict message outcomes. Although Brown and Fraser (2004) have suggested that the process by which audiences seek to imitate the characters depicted in EE messages (a process they call celebrity identification) occurs first through parasocial interaction, most researchers recognize that individuals desire to be like a media character because of a number of smaller judgments they make about those characters. For example, characters who
were perceived by audience members as 1) similar to themselves; 2) highly attractive; and 3) socially desirable were more likely to produce wishful identification (Austin & Knaus, 2000; Hoffner, 1996; Hoffner & Buchanan, 2005). In short, it appears that all of the other processes related to character involvement processes have the potential to influence wishful identification.

**Testing the Model of Character Involvement**

In summary, the ways in which audiences can become involved with EE story characters features a number of highly related but distinct processes. One goal of this present study is to test the proposed model which suggests that character involvement is comprised of four components. Perceived similarity and parasocial interaction comprise the first model component, which are the *antecedents* for all of the other character involvement processes. Next, the model features an *experiential identification* component. The experience of identifying with a character influences the next set of processes in the model which are comprised of the *judgments* that the audience makes about a story character. In the present study, judgments about the likability of a character will be evaluated. Finally, the fourth component of the character involvement is *outcomes*, which is comprised of both liking and wishful identification.

In order to test the proposed model, path analysis will be performed and the following hypotheses will be tested:

- **H11a:** Perceived similarity will be positively associated with parasocial interaction, experiential identification, likeability, and wishful identification.
- **H11b:** Parasocial interaction will be positively associated with experiential identification, likeability, and wishful identification.
- **H12a:** Experiential identification will be positively associated with likability and wishful identification.
- **H12b:** Likeability will be positively associated with wishful identification.
The Influence of Character Involvement Processes on Persuasive Outcomes

In addition to exploring the interrelations among the various processes related to audience involvement with EE story characters, another goal of this study is to investigate how those processes influence the ways in which audiences respond to EE messages. Researchers have acknowledged that the extent to which audiences become involved with characters in EE messages is central to the persuasive outcomes of those messages (Slater & Rouner, 2004). In her EORM, Moyer-Guse (2008) provided a detailed explication of how perceived similarity, parasocial interaction, and the experience of identification should influence the various forms of persuasive resistance. The following section will provide a short review of the ways in which aforementioned character involvement processes should influence various cognitive and affective responses to EE programs including cognitive elaboration, counterarguing, perceived relevance, psychological reactance, program enjoyment, as well as the health outcomes of interest in this study, beliefs, attitudes, and behavioral intentions.

Cognitive elaboration. Theoretically, it is reasonable to expect that the extent to which audiences attend to and become involved with the story characters in EE messages will increase the number of story-consistent cognitions. In particular, we might expect to find that the processes of perceived similarity and experiential identification are related to cognitive elaboration. When a person determines that a story character is an in-group member (i.e., also belongs to some relevant, salient social category), attention to the story events related to that character should be automatically heightened (Fiske, Lin, & Neuberg, 1990). Simply perceiving that a character belongs to the same social category enhances story involvement, which in turn, enhances the likelihood that a person will become experientially involved with that character. Researchers have suggested that the experience of identifying with a character should also
enhance story-consistent cognitions (Slater, 2002). Therefore, we should expect to find that both perceived similarity and experiential identification enhance cognitive elaboration.

H13: Perceived similarity will be positively associated with cognitive elaboration.

H14: Experiential identification will be positively associated with cognitive elaboration.

**Counterarguing.** Moyer-Guse’s EORM also suggested that *parasocial interaction* will reduce counterarguing. Parasocial interaction hampers the likelihood that exposure to a persuasive message will induce critical scrutiny because of the strong attachment that one feels to the character and because the interaction itself diverts cognitive energy away from counterarguing. Researchers have also suggested that the experience of *identification* with a story character should limit the capacity to engage in critical scrutiny of the persuasive subtexts in EE messages (Moyer-Guse, 2008; Slater, 2002; Slater & Rouner, 2004). Although more data are needed to determine the influence that experiential identification has on persuasive message outcomes, early work suggests that it does indeed inhibit counterarguing (Moyer-Guse & Nabi, 2010). Therefore, the following hypotheses will be tested:

H15: Parasocial interaction will be negatively associated with counterarguing.

H16: Experiential identification will be negatively associated with counterarguing.

**Perceived relevance.** Researchers have suggested that one’s involvement with a story character should influence the extent to which one views the story topic as personally relevant (Moyer-Guse, 2008). Theoretically, *perceived similarity* has the capacity to influence one’s perception that a health topic is personally relevant. According to person impression research, it is plausible to expect that individuals will more carefully attend to the persuasive health information presented by a character who has been deemed an in-group member (Fiske, Lin & Neuberg, 1990). The task of assigning a story character in-group status automatically heightens
the importance of that character’s experiences, thereby enhancing the personal relevance of the health topic (assuming the character does indeed address the persuasive health topic). Moreover, because perceptions of similarity enhance attentive processing of EE messages, there is an increased likelihood that a person will become more involved with the story itself. Researchers have suggested that one mechanism through which involvement with story characters might enhance perceptions that a health topic is personally relevant is through the experience of identification. Such an experience might induce people to attend to messages that they would otherwise avoid (Moyer-Guse, 2008). Subsequently, involvement with a health story can enhance the perception of personal vulnerability with respect to a health topic. Moyer-Guse and Nabi’s (2010) study demonstrated that experiential identification did in fact enhance the audience’s perceptions of personal vulnerability. Therefore, the following hypotheses will be tested:

H17: Perceived similarity will be positively associated with the perception that a health topic is personally relevant.

H18: Experiential identification will be positively associated with the perception that a health topic is personally relevant.

**Psychological reactance.** Because EE messages feature persuasive messages in ways that are subtle, it is expected that the narrative structure of the message itself will reduce psychological reactance, the negative affective state activated by arousal in response to feeling like one’s freedom to choose is threatened (Brehm, 1966). Moyer-Guse (2008) has suggested that because it fosters trust of and familiarity with characters, *parasocial interaction* with an EE character is likely to reduce psychological reactance. When someone seeks a character with whom she or he has some kind of relational attachment, it is feasible to expect that the persuasive encouragements offered by that character are less likely to induce reactance. For the same
reasons, Moyer-Guse also suggested that the likability of a character will minimize reactance. Although there are not directional predictions about the influence of experiential identification on reactance in the EORM, there is reason to predict that the experience of identifying with a character will inhibit reactance. Researchers have suggested that the experience of identifying with a character is central to the EE strategy because identification makes the persuasive claims in EE messages less salient, thereby reducing negative arousal responses to those persuasive claims (Slater, 2002). Therefore, the following hypotheses will be tested:

H19: Parasocial interaction will be negatively associated with psychological reactance.

H20: Experiential identification will be negatively associated with psychological reactance.

H21: Character liking will be negatively associated with psychological reactance.

**Enjoyment.** Theoretically, one’s enjoyment of a story is strongly related to the experience of being involved in that story as well as in the story characters themselves (Green, Brock, & Kaufman, 2004). Indeed, Busselle and Bilandzic (2010) demonstrated that higher levels of narrative engagement were related to program enjoyment and that each dimension of narrative engagement, including emotional engagement with story characters, predicted participants’ reports of story enjoyment. Therefore, we should expect to find that reports of experiential identification are related to enjoyment of EE programs in this present study. In addition to testing this prediction, the relationship between program enjoyment and the other components of the character involvement model will be explored.

H22: Experiential identification will be positively associated with program enjoyment.

RQ5: What is the relationship between perceived similarity, parasocial interaction, attraction, liking, wishful identification, and program enjoyment?
Health beliefs, attitudes, and behavioral intentions. The EE strategy is concerned first and foremost with creating engaging stories and story characters in order to positively influence health outcomes. One purpose of this study is to explore the extent to which the various processes related to character involvement influence health beliefs, attitudes, and behavioral intentions. We might expect to find that the experience of identification will influence changes in participants’ story-consistent health beliefs, attitudes, and behavioral intentions, assuming that the characters with whom the audience identifies are central to the persuasive health messages in those stories. It is also reasonable to expect that wishful identification will be related to story-consistent changes in one’s health beliefs, attitudes, and behavioral intentions (again, assuming that character is central to the persuasive health message in the story). The direct influence of the other character involvement processes on changes in audience members’ health beliefs, attitudes, and behavioral intentions will also be explored in this study. Therefore, the following hypotheses and research question will be investigated:

H23: Experiential identification will be positively related to story-consistent changes in one’s health beliefs, attitudes, and behavioral intentions.

H24: Wishful identification will be positively related to story-consistent changes in one’s health beliefs, attitudes, and behavioral intentions.

RQ6: What influence does perceived similarity; parasocial interaction, attraction, and liking have on story-consistent changes in one’s health beliefs, attitudes, and behavioral intentions?
CHAPTER 3

METHOD

Research Design

As with any study, concerns about both internal and the external validity underlie all of the decisions about how best to investigate the various facets of audience involvement with EE programs. In this study, an experiment was used to test the various hypotheses and research questions about the processes underlying audience involvement with EE messages. Random assignment to message condition and careful control over the research environment are two key experiment design practices that help to ensure internal validity. Because the goal of this study is to explore the processes that underlie audience involvement with EE messages (and the effects of those processes), it was determined that using a controlled classroom setting would help to minimize interruptions in the message exposure environment. By reducing environmental noise, we also hope to reduce measurement error associated with message exposure (which in turn, enhances the possibility of observing the processes and effects that are the focus of this study). Moreover, inviting research participants to a controlled classroom setting made it feasible to administer pre- and post-exposure instruments in a timely fashion to better assess short-term effects of message exposure.

Utilizing a laboratory-type setting does put some limits on the external validity of an experimental study. Ideally, any study about the EE strategy would involve exposure to carefully designed EE messages. In the absence of the facilities and resources to produce original EE messages, it was determined that the best way to explore audience involvement with EE messages was to rely on the highest quality EE messages available. In order to determine what would constitute “quality” EE messages, it was necessary to identify the target audience of
those messages. For the purpose of this study, it was determined that using a sample of college students would be the most timely and cost effective.

The highest quality EE messages that would be most likely to appeal to a college-aged sample are from television programs because, unlike movies, most television programs are short (no more than 45 minutes long) and are designed to appeal to mass audiences. In order to generate a sample of EE messages from popular primetime television programming, the Sentinel for Health Award winners for primetime television between the dates of 2000 and 2007 were examined. The Sentinel for Health Awards were developed by the Centers for Disease Control to “recognize exemplary achievements of TV writers who inform, educate and motivate viewers to make choices for healthier living and safer lives through their storytelling” (Hollywood, Health, and Society, 2010). The Sentinel for Health Awards are given every year by the University of Southern California Annenberg’s Hollywood, Health and Society program to recognize television program producers and writers for their efforts in creating high quality health storylines in television programming. Television programs are judged by more than 65 topic experts who evaluate the accuracy of health depictions, after which the top finalists are evaluated by an expert panel that determines both the entertainment value and the potential benefit of the storyline to the audience (Hollywood, Health, and Society, 2010).

Four popular medical dramas that featured a key storyline about sexual and reproductive health that aired during primetime on network television were used in this study. The rationale for selecting these programs is twofold. First, as the purpose of this study was to explore the processes that underlie audience involvement with EE programs and characters, it was determined that the exposure to television dramas that featured engaging health stories and characters would enhance both the likelihood of audience interest in the EE messages and
variability in the constructs of interest. Moreover, showing television programs that featured health topics that are widely relevant to the target audience was also important to the research design. Broadly speaking, sexual and reproductive health is relevant to most young adults. Sexually transmitted diseases and infections are most common among young people, ages 19 to 24 (CDC, 2009). Even though sexually transmitted infections are quite common, many people are not aware of being infected or of the need for regular STI screening (CDC, 2009). It might be especially beneficial to target young people with messages about the benefits of safe sex practices as some research shows that young people’s participation in unsafe sexual behavior is influenced by the perception that there are greater benefits associated with unprotected sex (Parsons, Halkitis, Bimbi, & Borkowski, 2000). In light of evidence that suggest that it may be especially important to target messages about the benefits of safe sex practices to college students, and in order to study how EE messages influence health beliefs, attitudes, and behavioral intentions, the decision was made to use EE programs focused on sexual and reproductive health topics.

The second reason for using the experiment design in this study has to do with the importance of using a multiple-messages approach to the study of message effects. With random assignment to message condition, we try to ensure that differences in responses to those messages are a product the messages themselves (Jackson, 1992). One limitation of relying on a single message to observe message effects is that a single message by itself cannot adequately represent an entire class or genre of messages (Jackson, 1992; O'Keefe, 2002). Instead, messages are better thought of as exemplars of a particular class. By employing multiple messages that represent the one class of EE messages (i.e., primetime television medical
dramas), we enhance the generalizability of our findings about the processes that underlie audience involvement with this particular class of messages.

Relying on a set of messages (rather than one or two messages) to assess audience involvement with EE television program is also important to the goal of studying one particular facet of audience involvement: involvement with story characters. One common approach to studying involvement with media characters involves using survey research to ask participants to recall their favorite television character and then answer a number of questions about those characters (for example, see Hoffner & Buchanan, 2005). This approach to studying media character identification is helpful because it allows researchers to examine audience experiences of identification that are not artificially induced by an experimental research setting. Though this enhances the external validity of a study designed to investigate identification, this approach to the study of identification is problematic because it has the potential to limit the sample of media characters.

Survey research that requires that individuals recall media characters may result in data that represent a relatively small portion of the entire population of media characters rather than a sample of the entire population of media characters. There is no guarantee that participants’ retrospective recall will yield variability in the types of characters recalled by the participants. There are a number of factors that might influence which characters are more likely to be recalled including (but not limited to) the amount of time spent with the character, liking of and attraction to the character, and the popularity of the character. Using survey research based on participant recall does not provide researchers with a representative sample of the entire population of media characters. Sampling from the audience population instead of the message population has the potential to limit the variability in audience responses to media characters.
and, ultimately, the other outcome variables of interest. A lack of variance in the characters most likely to be recalled by audiences compromises the internal validity of a study about media character identification because of statistical regression toward the mean (Campbell & Stanley, 1963). The scores for items that represent the various dimensions of the identification construct are more likely to regress toward the mean as a result of sampling extreme cases (i.e., character depictions). For example, the mean of participants’ character likeability scores could be influenced by the extremity of the recalled character depictions wherein some participants might be more likely to recall highly unlikable characters while other participants might be more likely to recall highly likable characters. Though the use of a survey allows participants to report on their strongest identification experiences, those surveys compromise the internal validity of a study designed to assess the relationships of the various dimensions of the audience involvement (and involvement with media characters in particular).

Based on all of these factors, it is more useful to employ a research design that allows for empirical examination of audience involvement with a variety of characters that come from a class of messages that represent a specific genre of EE messages: primetime television programs. The focus of this study, then, is not on the differences between message conditions but rather on the processes underlying audience involvement across message conditions (and within a particular class of EE messages).

Sample

A total of 362 participants were recruited from lower-division communication and community health courses from a large Midwestern university. Only 1 participant did not report a gender; 30.9% were male \( (n = 112) \) and 68.8% were female \( (n = 249) \). The majority of participants, 64.9% \( (n = 249) \) self-identified as White; 12.4% \( (n = 45) \) identified themselves as
Black; 11.6% \((n = 42)\) identified themselves as Asian; 5.5% \((n = 20)\) identified as Hispanic/Latino; only 1 person identified themselves as Native American; 13 of the participants did not report their ethnic or racial identities; and 7 participants identified other ethnic backgrounds (e.g., “multicultural” or “biracial”). The participants’ mean age was 20.94 \((SD = 1.12)\).

**Procedure**

Participants were randomly assigned to 1 of 4 primetime television programs that were intentionally constructed for the purpose of educating audiences about health topics related to sexual and reproductive health. A total of 96 participants were assigned to watch *Grey’s Anatomy*, 87 participants watched *Private Practice*, 89 participants watched *House*, and 90 participants watched *E.R.* Prior to viewing, all participants gave their consent to participate in the study. Next, they were given 10 minutes to complete a pretest to measure preexisting health-related beliefs, attitudes, and behavioral intentions regarding sexual and reproductive health issues. Each program, approximately 45 minutes in length in uninterrupted format, was projected on a large screen in a medium–sized classroom. After viewing the program, the participants completed a 90-second thought-listing task designed to capture their thoughts about the program. Following the program-related thought-listing task, each participant completed another 90-second thought-listing task designed to capture thoughts about one specific character. The participants then completed a battery of items measuring post-test beliefs, attitudes, and behavioral intentions in addition to items related to message processing (as described below). Upon completion of the surveys, participants were thanked for their time and excused from the classroom.
Stimulus

Four episodes from four different television programs were selected, two of which were Sentinel for Health Award winners: *Grey’s Anatomy*, an episode entitled *Let It Be*, third place winner of the 2006 Sentinel for Health Award for primetime drama and *Private Practice*, an episode entitled *In Which Addison Finds a Showerhead*, first place winner of the 2008 Sentinel for Health Award for primetime minor storyline. Two other television programs were also selected for the study, both of which were featured in peer-reviewed studies conducted by researchers affiliated with the Hollywood, Health, and Society organization to examine the efficacy of the EE strategy: *E.R.*, an episode entitled *Be Patient*; and *House*, an episode entitled, *Sex Kills*. Two of the messages feature a storyline in which the sexual health topic is the primary storyline. In *Grey’s Anatomy*, a woman decides to remove her breasts and ovaries because of a genetic mutation that increases the probability of developing breast and cervical cancers. In *House*, the doctor treats an ailing man and woman who are both struggling with a mysterious condition (later, one is diagnosed with gonorrhea). In the other two messages, the sexual health topic is just one of many other storylines. In the *Private Practice* episode, a female doctor warns her friend’s daughter about the risks of unsafe sex. In the *E.R.* episode, a nurse encourages two school girls to get tested for HPV.

Although 83% of the participants said they had not seen their assigned television episode before (n = 301), 16% of the participants had seen their assigned episode prior to this study (n = 58). Approximately 61% of the participants reported having seen their assigned program before this study (n = 221), 38% said they had never seen the program before (n = 138), and 15.2% said they were regular viewers of their assigned program (n = 55). Nearly half of all participants,
44.5% \((n = 161)\), said they regularly watched programs like the one to which they were randomly assigned.

**Measures**

All survey items appear in Appendix A. Each participant completed a pretest and posttest survey, described below. Where possible, Cronbach’s alpha was computed to assess the internal consistency of the survey items.

**Pretest questionnaire.** A 26-item pretest survey was administered to assess preexisting beliefs, attitudes, and behavioral intentions about the sexual and reproductive health issues related to the EE programs.

**Beliefs.** Participants completed 9 items to assess their beliefs. Those items included two questions about the usefulness of being an organ donor \((\alpha = .86)\) (e.g., “Becoming an organ donor saves lives”), two items about the importance of honesty in patient/provider communication \((\alpha = .80)\) (e.g., “Doctors need accurate information to best treat their patients”), two items about the importance of cancer screening \((\alpha = .23)\) (e.g., “If I was screened for cancer, it would prevent me from getting cancer”), and the importance of STI screening \((\alpha = .26)\) (e.g., “When a person is sexually active, it is important to obtain regular screenings for sexually transmitted infections”). All items were anchored on a 7-point Likert-type scale where 1 = strongly disagree and 7 = strongly agree.

**Attitudes.** Participants completed 12 items to assess their attitudes. Those items included three questions to rate positive and negative evaluations of organ donation \((\alpha = .74)\), getting tested for STIs \((\alpha = .87)\), cancer screening \((\alpha = .85)\), and answering a doctor’s questions honestly \((\alpha = .83)\). Each category of questions employed three semantic differential response options: bad/good, not beneficial/beneficial, and unwise/wise.
Behavioral intentions. Participants completed 5 items to assess their behavioral intentions. Those items included three items about getting screened for STIs ($\alpha = .85$) (e.g., “I intend to get regular screenings for STIs”) and two items about getting screened for cancer ($\alpha = .73$) (e.g., “I intend to learn more about cancer screening in the near future”). Each item was anchored on a 7-point Likert-type scale where 1 = strongly disagree and 7 = strongly agree.

Cognitive Elaboration. Immediately following the program, participants were given 90 seconds to respond to the prompt, “Write down everything you remember thinking while you were watching the program.” For this task, participants generated an average of 5.40 thoughts ($SD = 1.90$). Immediately following the program-related thought-listing task, participants were given 90 seconds to respond to the prompt, “We would like you to identify a character, from the program, that you found yourself thinking about. We’d like you to write down everything you remember thinking about that character while you were watching the program.” For this task, participants generated an average of 4.40 thoughts ($SD = 2.23$). The data generated by both thought-listing tasks was then tabulated and coded by two trained researcher assistants. The coders spent approximately 50 hours training to establish reliability on 12% of the thought-listing sample ($n = 43$ surveys). Because scholars have recently suggested that Krippendorf’s alpha is the most accurate/stringent intercoder coefficient, it was used to calculate all intercoder reliability statistics (Neuendorf, 2002). The unit of analysis was a single thought which was generally indicated by the presence of a clause that contained a noun, an adjective, a verb, and punctuation.

In order to create an index of story-consistent cognitive elaboration, the sum of all the story-consistent thoughts was computed by adding the total number of thoughts from each of the categories that the research assistants coded including thoughts about the realism of the
program/characters ($\alpha = .80$), questions and uncertainties about the program/characters ($\alpha = .94$), thoughts about the lack of realism of the program/characters ($\alpha = .76$), thoughts about being highly involved with the program/characters ($\alpha = .80$), thoughts about the characters’ emotional or cognitive state of being ($\alpha = .80$), thoughts about the actor(s) in the program ($\alpha = .80$), sympathy thoughts related to the characters ($\alpha = .89$), thoughts related to the moral/ethical goodness of the characters’ actions ($\alpha = 1.0$), thoughts about how attractive ($\alpha = 1.0$), unattractive ($\alpha = 1.0$), intelligent ($\alpha = 1.0$), unintelligent ($\alpha = 1.0$), or successful the character(s) were ($\alpha = .85$); and finally, thoughts related to the topic of sexually transmitted infections ($\alpha = 1.0$). Although these thought-listing categories were not used individually in the analyses, the sum of the number of thoughts from each category was computed to generate an index of story-consistent cognitive elaboration. On average, participants generated 7.87 story-consistent thoughts ($SD = 3.29$).

**Counterarguments.** In order to create an index of counterarguing, the sum of participants’ thoughts about the extent to which the story or story characters lacked realism and thoughts that demonstrated evidence that the participants were questioning the veracity of the story or story characters or voicing uncertainties about the plausibility of the story plot or the actions of the story characters was computed. Few participants generated counterarguments ($M = .11$, $SD = .18$).

**Posttest Questionnaire.** Immediately following the thought-listing tasks, participants were given a battery of questions designed to assess message involvement and message outcomes.

**Character involvement survey.** Immediately after completing the character thought-listing task, participants completed a 22-item survey designed to assess perceived similarity,
parasocial interaction, experiential identification, character likability, and wishful identification. Some of these items were adapted from other scales including Cohen’s (2000) identification scale, Rubin and Perse’s (1987) parasocial interaction scale, Hoffner’s (1996) wishful identification items, and Andersen and de Mancillas’ (1978) homophily scale. As with the character-related thought listing task, the participants were prompted to respond to the questions using the character identified in the character thought-listing task. A Likert-type scale was used for all of the items on this instrument where 1 = strongly disagree and 7 = strongly agree.

Perceived similarity. Four items were used to assess perceived similarity (α = .84). Sample items include “The character is very similar to me” and “The character behaves like me.”

Parasocial interaction. Six items were used to assess parasocial interaction (α = .83). Sample items include “If the character appeared on another TV program, I would watch the program” and “I would like to meet the character in person.”

Experiential identification. Four items were used to assess experiential identification (α = .78). Sample items include “During the viewing, I felt I could really get inside the character’s head” and “When the character succeeded, I felt joy.”

Likability. Four items were used to assess the degree to which participants liked their selected character (α = .87). Sample items include “I liked the character” and “Overall, I think the character is a good person.”

Wishful identification. A total of four items were used to assess the degree to which participants desired to emulate the selected character (α = .88). Sample items include “I wish I were more like the character” and “I’d like to do the kinds of things that the character does.”
Post-exposure beliefs, attitudes, and behavioral intentions. Next, the 26-item pretest survey was re-administered to assess post-exposure beliefs, attitudes and behavioral intentions about the sexual and reproductive health issues related to the EE programs.

Beliefs. Participants again completed the nine items to assess their post-exposure beliefs. Those items included two questions about the usefulness of being an organ donor ($\alpha = .89$), two items about the importance of honesty in patient/provider communication ($\alpha = .45$), two items about the importance of cancer screening ($\alpha = .01$), and the importance of STI screening ($\alpha = .13$).

Attitudes. Participants again completed the 12 items to assess their post-exposure attitudes. Those items included three questions to rate positive and negative evaluations of organ donation ($\alpha = .70$), getting tested for STIs ($\alpha = .81$), cancer screening ($\alpha = .83$), and answering a doctor’s questions honestly ($\alpha = .90$).

Behavioral intentions. Participants again completed the 5 items to assess their behavioral intentions. Those items included three items about getting screened for STIs ($\alpha = .91$) and three items about getting screened for cancer ($\alpha = .79$).

Perceived relevance. Participants completed a 4-item scale to measure perceived personal relevance of the health topic in the message. Those items were internally reliable ($\alpha = .82$). Each item was anchored on a 7-point Likert-type scale where 1 = strongly agree and 7 = strongly disagree. Sample items include “How serious is the threat of catching a sexually transmitted infection to you?” and “How personally relevant is the topic of catching a sexually transmitted infection to you?”

Reactance. Participants completed a four-item state reactance scale (Reinhart, Marshall, Feeley, and Tutzauer, 2007). Those items were internally reliable ($\alpha = .83$). Each item was
anchored on a 7-point Likert-type scale where 1 = strongly disagree and 7 = strongly agree. Sample items include “I am uncomfortable being told how to feel about having safe sex” and “It irritates me that the program told me how to feel about safe sex.”

Program enjoyment. An 11-item scale was administered to evaluate participants’ enjoyment of the program. Those items were internally reliable (.95). Each item was anchored on a 7-point Likert-type scale where 1 = strongly disagree and 7 = strongly agree. Sample items include “How enjoyable did you find this program?” and “How entertaining did you find this program?”

Demographic items. All participants completed a short demographic survey that included items about gender, age, racial identification, and previous exposure to the assigned television programs.
CHAPTER 4
RESULTS

Analytic Procedure

Before answering all of the hypotheses and research questions, descriptive statistics were computed (Table 1 provides the descriptive statistics for all of the variables used in the analyses). In addition to running descriptive statistics for the main constructs of interest, analyses were also performed to identify patterns in the participants’ selection of program characters.

Participants were prompted to identify a single character from their assigned program. A total of 42 characters were identified: 13 from Grey’s Anatomy, 12 from the ER, 10 from Private Practice, and 7 from House. Approximately 70% of the participants identified major characters ($n = 250$), and 30% of the participants selected minor characters ($n = 112$). Approximately 55% of the participants selected female characters ($n = 203$), and 44% of participants selected male characters ($n = 159$). The analysis indicated that the percentage of male and female characters differed significantly by participant gender $\chi^2(2, N = 362) = 13.10, p < .00$. Approximately 90% of the participants selected White characters ($n = 329$), 7.7% of the participants selected Black characters ($n = 28$), and 1.4% of the participants selected one Asian character (Christina, from Grey’s Anatomy) ($n = 7$). The analysis indicated that character race did not differ significantly by participant race $\chi^2(26, N = 362) = 27.10, p = .40$.

To examine most of the hypothesized relationships among the various involvement variables, cognitive and affective responses, and health outcomes, the structural equation modeling procedure was used (AMOS 18), setting the error term for each endogenous variable at a mean of 0 and a variance of 1. Model fit was assessed using the following criteria: (a) a nonsignificant $\chi^2$ goodness-of-fit statistic, (b) a comparative fit index (CFI) of .95 or greater, (c) a root mean square error of approximation (RMSEA) less than or equal to .05, (d) closeness of fit...
ratio (PCLOSE) for testing goodness of fit of RMSEA in the population of .50 or greater; and finally, (e) Hoelter’s Critical N statistic for adequacy of sample size of 200 or higher at the .01 level (Blunch, 2008; Byrne, 2010). For all hypothesis tests, the hypothesized models were analyzed and results are provided below. For all research questions, path analyses were conducted until (a) the model indices reached an acceptable level for each criterion, and, when possible, (b) all of the paths in the model contained beta coefficients that achieved significance at a probability level of .05 or higher.

Before analyzing the predicted path models, a number of items were treated as covariates onto which all of the main variables of interest were regressed including gender, racial identification, program assignment, previous exposure to program episode, and regular program viewership. The standardized residuals, which represent the variance in each variable not explained by these variables, were then entered into the path models for analyses. Controlling for these covariates using the standardized residuals ensures that the results from the path model analyses are not influenced by possible systematic effects related to these covariates (Quick, 2009; Stephenson & Palmgreen, 2001).
Table 1

*Descriptive Statistics for Main Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>M</th>
<th>(SD)</th>
<th>Range Potential</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation</td>
<td>362</td>
<td>4.45</td>
<td>1.00</td>
<td>1-7</td>
<td>1.0-7.0</td>
</tr>
<tr>
<td>Narrative Engagement</td>
<td>362</td>
<td>3.52</td>
<td>0.73</td>
<td>1-7</td>
<td>1.0-5.42</td>
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<tr>
<td>Narrative Presence</td>
<td>362</td>
<td>3.89</td>
<td>1.39</td>
<td>1-7</td>
<td>1.0-7.0</td>
</tr>
<tr>
<td>Narrative Understanding</td>
<td>361</td>
<td>2.13</td>
<td>1.16</td>
<td>1-7</td>
<td>1.0-6.67</td>
</tr>
<tr>
<td>Attentional Focus</td>
<td>361</td>
<td>2.83</td>
<td>1.67</td>
<td>1-7</td>
<td>1.0-7.0</td>
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<tr>
<td>Emotional Engagement</td>
<td>362</td>
<td>5.25</td>
<td>1.30</td>
<td>1-7</td>
<td>1.0-7.0</td>
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<tr>
<td>Character Involvement Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived similarity</td>
<td>362</td>
<td>3.11</td>
<td>1.37</td>
<td>1-7</td>
<td>1.0-6.75</td>
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<tr>
<td>Parasocial interaction</td>
<td>362</td>
<td>4.19</td>
<td>1.38</td>
<td>1-7</td>
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<tr>
<td>Experiential identification</td>
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<td>4.82</td>
<td>1.28</td>
<td>1-7</td>
<td>1.0-7.0</td>
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<tr>
<td>Likability</td>
<td>362</td>
<td>4.98</td>
<td>1.45</td>
<td>1-7</td>
<td>1.0-7.0</td>
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<tr>
<td>Wishful identification</td>
<td>362</td>
<td>3.56</td>
<td>1.00</td>
<td>1-7</td>
<td>1.0-7.0</td>
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<tr>
<td>Cognitive Outcome Variables</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Cognitive elaboration</td>
<td>362</td>
<td>7.87</td>
<td>3.29</td>
<td>--</td>
<td>8.0–20.00</td>
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<tr>
<td>Counterarguing</td>
<td>362</td>
<td>.11</td>
<td>.18</td>
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<td>0-1.0</td>
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<td>Perceived relevance</td>
<td>362</td>
<td>4.43</td>
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<td>Affective Outcome Variables</td>
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<td>Reactance</td>
<td>362</td>
<td>2.72</td>
<td>1.25</td>
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<td>Program enjoyment</td>
<td>362</td>
<td>5.15</td>
<td>1.37</td>
<td>1-7</td>
<td>1.0-7.0</td>
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<td>Health Outcome Variables</td>
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<td></td>
<td></td>
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<tr>
<td>Belief change</td>
<td>362</td>
<td>-.42</td>
<td>1.21</td>
<td>-6.0-6.0</td>
<td>-5.0-6.0</td>
</tr>
<tr>
<td>Attitude change</td>
<td>362</td>
<td>-.12</td>
<td>.88</td>
<td>-6.0-6.0</td>
<td>-6.0-6.0</td>
</tr>
<tr>
<td>Intention change</td>
<td>362</td>
<td>-.58</td>
<td>1.10</td>
<td>-6.0-6.0</td>
<td>-6.0-5.0</td>
</tr>
</tbody>
</table>

*Note.* Belief, attitude, and behavioral intention change are indices of the magnitude of change from pre-test to post-test scores and vary as a function of program exposure.
Testing Health Outcomes

Central to the purpose of this study is an examination of the influence of exposure to EE messages on changes in story-consistent beliefs, attitudes, and behavioral intentions. To determine the influence of the program on these health outcomes, paired-sample t-tests were conducted to test for significant differences between participants’ pre- and post-test health beliefs, attitudes and behavioral intentions scores. As shown in Table 2, the results indicate that the significant changes in participants’ beliefs, attitudes, and behavioral intention are consistent with their exposure EE messages.

Table 2

Results for Paired-Sample T-tests for Changes in Beliefs, Attitudes, and Behavioral Intentions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pretest Score M(SD)</th>
<th>Posttest Score M(SD)</th>
<th>Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belief about STI screening (single item)</td>
<td>6.22(1.10)</td>
<td>6.54(.80)</td>
<td>.32**</td>
</tr>
<tr>
<td>Belief about cancer screening (single item)</td>
<td>2.74(1.78)</td>
<td>3.28(2.00)</td>
<td>.55**</td>
</tr>
<tr>
<td>Beliefs about being honest with doctors</td>
<td>6.68(0.72)</td>
<td>6.79(0.56)</td>
<td>.12**</td>
</tr>
<tr>
<td>Beliefs about the benefits of organ donation</td>
<td>6.40(0.97)</td>
<td>6.51(0.92)</td>
<td>.11**</td>
</tr>
<tr>
<td>Attitudes toward organ donation</td>
<td>6.35(0.91)</td>
<td>6.62(0.84)</td>
<td>.27**</td>
</tr>
<tr>
<td>Attitudes toward being honest with doctors</td>
<td>6.77(0.58)</td>
<td>6.83(0.71)</td>
<td>.06</td>
</tr>
<tr>
<td>Attitudes toward STI screening</td>
<td>6.74(0.82)</td>
<td>6.86(0.59)</td>
<td>.12**</td>
</tr>
<tr>
<td>Attitudes toward cancer screening</td>
<td>6.70(0.67)</td>
<td>6.76(0.81)</td>
<td>.06**</td>
</tr>
<tr>
<td>Cancer screening intentions</td>
<td>5.23(1.33)</td>
<td>5.65(1.30)</td>
<td>.43**</td>
</tr>
<tr>
<td>STI screening intentions</td>
<td>4.53(1.72)</td>
<td>5.03(1.73)</td>
<td>.50**</td>
</tr>
</tbody>
</table>

* p < .05. ** p < .01.
After watching the programs, participants were more likely to have positive beliefs about the importance of organ donation and being honest with one’s healthcare provider. Similarly, post-exposure scores indicate that after exposure, participants were more likely to have positive attitudes toward organ donation, screenings for sexually transmitted infections (STIs), and cancer screening. Finally, the post-exposure scores indicate that there were positive changes in participants’ behavioral intentions toward cancer screening and STI screening.

In order to study the influence of the various message involvement processes on participants’ health beliefs, attitudes, and behavioral intentions, a variable representing the magnitude of change from pre- and post-test scores was computed for each individual. Because the participants were randomly assigned to EE messages that emphasized different sexual and reproductive health topics, the magnitude of change scores were computed to vary as a function of message exposure. For example, the magnitude of change scores for the participants who viewed Private Practice, E.R., and House programs, in which there were characters who were struggling with the effects of an untreated sexually transmitted infection, were assigned based on their pre- and post-test score differences specific to the attitude and behavioral intention measures that asked about sexually transmitted infections. The participants who viewed the Gray’s Anatomy episode, in which a character was struggling with the decision about how to proceed after being screened for ovarian and cervical cancers, were assigned based on their pre- and post-test score differences specific to the attitude and behavioral intentions measures that asked about cancer screening attitudes and behavioral intentions. Higher scores represent more story-consistent belief, attitude, and intention change (e.g., a person with a belief change score of 4 reported more agreement with story-consistent belief statements than a person with a belief change score of 1).
Because of the low reliability scores for the combined STI screening belief items, a single item was used to represent the STI screening beliefs (i.e., “When a person is sexually active, it is important to obtain regular screenings for sexually transmitted infections”). Similarly, a single item was used to represent cancer screening beliefs (i.e., “If I was screened for cancer, it would prevent me from getting cancer”). For all of the remaining analyses, the magnitude of change scores were used wherever health outcomes were assessed. As is consistent with the theory of reasoned action/planned behavior framework (Ajzen, 1991), all of the path models that included belief, attitude, and behavioral intention outcome measures were drawn to indicate the influence of beliefs and attitudes on behavioral intentions.

**Testing the Influence of Transportation on Message Outcomes**

To answer the first set of hypotheses about the influence of transportation on message outcomes, the maximum likelihood estimation procedure was used. Correlations among transportation and the hypothesized cognitive and affective responses and health outcome variables are presented below in Table 3.
**Table 3**  
*Correlations among Transportation and Message Outcome Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Transportation</td>
<td>.08</td>
<td>-.00</td>
<td>.21**</td>
<td>-.13*</td>
<td>.58**</td>
<td>-.08</td>
<td>-.10*</td>
<td>-.14**</td>
</tr>
<tr>
<td>2. Cognitive elaboration</td>
<td>.06</td>
<td>.10</td>
<td>-.09</td>
<td>.06</td>
<td>.05</td>
<td>-.07</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>3. Counterarguing</td>
<td>.02</td>
<td>-.01</td>
<td>-.06</td>
<td>.01</td>
<td>-.03</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Perceived relevance</td>
<td>-.08</td>
<td>.16**</td>
<td>.00</td>
<td>.02</td>
<td>-.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Reactance</td>
<td></td>
<td></td>
<td>-.21**</td>
<td>-.01</td>
<td>-.00</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Program enjoyment</td>
<td></td>
<td></td>
<td></td>
<td>.03</td>
<td>-.05</td>
<td>-.10</td>
<td></td>
<td></td>
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<td>7. Belief change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.15**</td>
<td>.06</td>
</tr>
<tr>
<td>8. Attitude change</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.03</td>
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<tr>
<td>9. Behavioral intention change</td>
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</tbody>
</table>

* p < .05, ** p < .01.

The analyses indicated that the hypothesized model did not achieve adequate fit indices ($\chi^2 = 20.73$, $df = 11$, $p = .04$, CFI = .90, RMSEA = .05, 90% CI: 0.03 – 0.08, PCLOSE= .47, Hoelter’s $N = 47$). After examining the beta coefficients and the correlation matrix, it was determined that the cognitive elaboration and counterarguing variables were not significantly related to any other variables in the model. Therefore, cognitive elaboration and counterarguing were removed from the model. The paths between perceived relevance and the health outcome variables were removed because perceived relevance did not predict belief change ($\beta = .01, p = .20$), attitude change ($\beta = -.03, p = .60$), or intention change ($\beta = .27, p = .61$). Similarly, reactance did not predict belief change ($\beta = -.07, p = .17$), or intention change ($\beta = -.03, p = .57$). Therefore, those paths were removed from the model. Estimation procedures were conducted again and the results indicated that the new model, depicted in Figure 4, achieved acceptable fit indices ($\chi^2 = 16.76$, $df = 14$, $p = .27$, CFI = .97, RMSEA = .02, 90% CI: 0.00 – 0.08, PCLOSE= .88, Hoelter’s $N = 628$).
The first set of hypotheses addressed the influence of transportation on cognitive responses to the EE messages and the influence of those responses on health outcomes. H1 predicted that transportation would be associated with counterarguing but, contrary to prediction, transportation was not associated with counterarguing. Therefore, H1 was not supported. H2 predicted that transportation would be significantly associated with story-consistent changes in health beliefs, attitudes, and behavioral intentions. H2 was received only partial support because transportation directly influenced changes in story-consistent health beliefs, but did not influence health attitudes or behavioral intentions. H3 predicted that counterarguing would mediate the influence of transportation on health outcomes. H3 was not supported because counterarguing did not mediate the influence of transportation on health outcomes. H4 predicted that transportation would be significantly associated with story-consistent cognitive elaboration. Because transportation was not significantly related to story-consistent cognitive elaboration, H4 was not supported. H5 predicted that cognitive elaboration would mediate the influence of
transportation on health outcomes, but cognitive elaboration did not mediate the influence of transportation on health outcomes. Therefore, H5 was not supported. As expected, transportation did predict the degree to which participants perceived that the program-related health topic was personally relevant; therefore, H6 was supported. Relevance did not mediate the influence of transportation on any of the health outcomes; therefore, H7 was not supported. Here, it is important to note that although changes in health beliefs predicted changes in health attitudes, health attitudes did not predict changes in behavioral intentions.

The next set of hypotheses addressed the influence of transportation on affective responses to EE messages and the influence of those responses on health outcomes. Transportation was not significantly associated with reactance. Therefore, H8 was not supported. Although reactance was significantly associated with story-consistent changes in participants’ attitudes, it did not mediate the influence of transportation on the health outcomes; therefore, H9 was not supported. Transportation did predict program enjoyment; therefore, H10 was supported.

Finally, to answer the first research question, the analyses indicate that enjoyment mediated the influence of transportation for two of the health outcomes assessed in this study: changes in beliefs and behavioral intentions. Interestingly, the meditational relationship between transportation and changes in story-consistent beliefs was negative, but transportation had a positive direct influence on story-consistent changes in participants’ health beliefs. It appears that transportation positively influenced participants’ enjoyment of the program which in turn had a negative influence on story-consistent beliefs and a positive change on story-consistent behavioral intentions.
Testing the Influence of Narrative Engagement on Message Outcomes

The next set of questions addressed the influence of narrative engagement on both the cognitive and affective responses to EE messages and the health outcomes of exposure to those messages. The bivariate correlations among the narrative engagement, the cognitive and affective responses, and health message outcomes are presented in Table 4.

Table 4

Correlations among Narrative Engagement and Message Outcome Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Narrative engagement</td>
<td>.10</td>
<td>-.03</td>
<td>.03</td>
<td>.09</td>
<td>-.12*</td>
<td>-.08</td>
<td>-.10</td>
<td>-.03</td>
</tr>
<tr>
<td>2. Cognitive elaboration</td>
<td>.06</td>
<td>.10</td>
<td>-.09</td>
<td>.06</td>
<td>.05</td>
<td>-.07</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>3. Counterarguing</td>
<td>.02</td>
<td>-.01</td>
<td>-.06</td>
<td>.01</td>
<td>-.03</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Perceived relevance</td>
<td>-.07</td>
<td></td>
<td>.16**</td>
<td>-.00</td>
<td>.02</td>
<td>-.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Reactance</td>
<td></td>
<td></td>
<td>-.21**</td>
<td>-.01</td>
<td>-.00</td>
<td>.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Program enjoyment</td>
<td></td>
<td></td>
<td></td>
<td>.03</td>
<td>-.45</td>
<td>-.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Belief change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.15**</td>
<td>.06</td>
<td></td>
<td></td>
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<tr>
<td>8. Attitude change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.03</td>
<td></td>
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<tr>
<td>9. Behavioral intention change</td>
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</tbody>
</table>

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

A path model was constructed to test the second research question, which asked whether there would be differences between a model that explored the influence of transportation on the outcomes of interest and a model that assessed the relationships among narrative engagement, counterarguing, psychological reactance, cognitive elaboration, perceived relevance, program enjoyment, and changes in story-consistent health beliefs, attitudes, and behavioral intentions. The results indicated that the data for narrative engagement fit the hypothesized model only moderately well ($\chi^2 = 24.25\ df = 11, p = .01, CFI = .91, RMSEA = .06, 90\% \ CI: 0.03 – 0.09, \ PCLOSE= .30, Hoelter’s N = 369$).
As before, the correlation matrix and the beta coefficients were consulted to determine which variables were not significant factors in the model. The results indicate that counterarguing and cognitive elaboration variables were not significantly related to any of the other variables in the model. Therefore, the two variables were removed from the model. Narrative involvement and perceived relevance were not significantly related to one another ($\beta = 0.06, p = 0.26$). As before, the paths between perceived relevance and belief change ($\beta = 0.03, p = 0.57$), attitude change ($\beta = -0.02, p = 0.67$), behavioral intention change ($\beta = 0.04, p = 0.48$) were not significant. Similarly, the paths between reactance and belief change ($\beta = -0.06, p = 0.29$) and behavioral intention change ($\beta = -0.02, p = 0.68$) were not significant. The paths between narrative engagement and belief change ($\beta = 0.07, p = 0.32$), attitude change ($\beta = -0.01, p = 0.87$), and behavioral intention change ($\beta = 0.04, p = 0.52$) were also not significant. Therefore, all of those insignificant paths were removed from the model.

Estimation procedures were conducted on the new model, depicted in Figure 5, and the results indicate that the final model fit the data only moderately well ($\chi^2 = 5.34, df = 10, p = 0.87$, CFI = 1.0, RMSEA = 0.00, 90% CI: 0.00 – 0.03, PCLOSE = .99, Hoelter’s N = 1569).

![Figure 5](image-url)

*Figure 5. Relationships among narrative engagement, cognitive and affective responses, and health outcomes.*
Like transportation, narrative engagement did not significantly influence cognitive elaboration or counterarguing. Unlike transportation, narrative engagement was negatively associated with psychological reactance. Also unlike transportation, narrative engagement was not related to perceived relevance. Narrative engagement was positively related to program enjoyment. Narrative engagement had no direct relationship with any of the health outcomes. Program enjoyment mediated the influence of narrative engagement on one of the health outcomes: changes in story-consistent behavioral intentions. Reactance also mediated the influence of narrative engagement on changes in participants’ story-consistent attitudes. To answer the third research question, the data suggest that two path models that employed the transportation and narrative engagement variables as key predictors of cognitive, affective, and health outcomes of exposure to EE programs did not differ greatly in terms of model fit indices. However, the model that used the narrative engagement variable indicated that narrative engagement had no direct influence on perceived relevance or any of the health outcomes as well as a negative influence on reactance. Transportation, on the other hand, did have a direct influence on perceived relevance and story-consistent changes in participants’ beliefs, but it had no direct influence on reactance.

To answer the third research question about the influence of the four dimensions of narrative engagement, the bivariate correlations among all of the dimensions of the narrative engagement and the cognitive and affective message responses and health outcomes were examined (Table 5).
Table 5

Correlations among Dimensions of Narrative Engagement and Message Outcomes

<table>
<thead>
<tr>
<th>Variable</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
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<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
<th>10.</th>
<th>11.</th>
<th>12.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attentional focus</td>
<td>-.31**</td>
<td>-.28**</td>
<td>.47**</td>
<td>.02</td>
<td>-01</td>
<td>-03</td>
<td>.15**</td>
<td>-01**</td>
<td>-03</td>
<td>.02</td>
<td>.05</td>
</tr>
<tr>
<td>2. Emotional engagement</td>
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<td>-06**</td>
<td>.09</td>
<td>-06</td>
<td>.14**</td>
<td>-09</td>
<td>.42**</td>
<td>-08</td>
<td>-09</td>
<td>-11</td>
<td></td>
</tr>
<tr>
<td>3. Narrative presence</td>
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<td>.07</td>
<td>-06</td>
<td>.01</td>
<td>-08</td>
<td>.24**</td>
<td>-03</td>
<td>-03</td>
<td>-07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Narrative understanding</td>
<td>.03</td>
<td>.06</td>
<td>-09</td>
<td>-18**</td>
<td>.39**</td>
<td>-03</td>
<td>-04</td>
<td>.05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Cognitive elaboration</td>
<td>.06</td>
<td>.10</td>
<td>-09</td>
<td>.06</td>
<td>.05</td>
<td>-07</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Counterarguing</td>
<td>.02</td>
<td>-01</td>
<td>-06</td>
<td>.01</td>
<td>-03</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Perceived relevance</td>
<td>-07</td>
<td>.16**</td>
<td>.01</td>
<td>.02</td>
<td>.01</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>8. Reactance</td>
<td>-.21**</td>
<td>-01</td>
<td>-.00</td>
<td>.12</td>
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<tr>
<td>9. Program enjoyment</td>
<td>.03</td>
<td>-.05</td>
<td>-.10</td>
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<tr>
<td>10. Belief change</td>
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<td>.06</td>
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<td>11. Attitude change</td>
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</tbody>
</table>

* p < .05. ** p < .01.
As indicated by the correlation matrix, not all of the message responses were significantly related to the dimensions of narrative engagement. Perceived relevance was the only cognitive response significantly related with any of the dimensions of narrative engagement. Both affective responses (i.e., reactance and program enjoyment) were associated with dimensions of narrative engagement. Based on these correlations, a path model was constructed to verify the relationships between each of the four dimensions of narrative engagement and these cognitive and affective message outcomes. To test the various paths, the four dimensions of narrative involvement were entered as correlated exogenous variable and all of message outcomes were estimated until the model established an acceptable fit for the data as demonstrated by goodness-of-fit indices ($\chi^2 = 20.09$, $df = 16$, $p = .22$, CFI = .99, RMSEA = .03, 90% CI: 0.00 – 0.06, PCLOSE= .87, Hoelter’s $N = 575$) and beta weights that achieved significance at the .05 level or higher.

![Path Model Diagram](image)

*Figure 6. Relationships among dimensions of narrative engagement, cognitive and affective message responses, and health outcomes.*
As indicated by the measurement model shown above in Figure 6, attentional focus significantly predicted program enjoyment; emotional engagement predicted both perceived relevance and program enjoyment; and finally, narrative understanding was negatively associated with reactance and positively associated with program enjoyment. The answer to the third research question is that three of the four dimensions that comprise narrative engagement predicted cognitive and affective responses to the EE programs. Although none of the dimensions of narrative engagement was directly associated with the health outcomes measured in this study, reactance mediated the relationship between narrative understanding and story-consistent changes in participants’ attitudes.

Testing the Character Involvement Model

The next set of hypotheses addressed the relationships among the character involvement processes. Correlations among all the character involvement variables are presented in Table 6.

Table 6

Correlations among Character Involvement Processes

<table>
<thead>
<tr>
<th>Variable</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Character similarity</td>
<td>-.57**</td>
<td>-.49**</td>
<td>-.60**</td>
<td>.72**</td>
</tr>
<tr>
<td>2. Parasocial interaction</td>
<td>.65**</td>
<td>.73**</td>
<td>-.73**</td>
<td></td>
</tr>
<tr>
<td>3. Experiential identification</td>
<td></td>
<td>.61**</td>
<td>-.55**</td>
<td></td>
</tr>
<tr>
<td>4. Likability</td>
<td></td>
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<td>-.78**</td>
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<tr>
<td>5. Wishful identification</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

To the next set of hypotheses, the maximum likelihood estimation procedure was again employed. The analyses indicate that there was not enough statistical power to test the
hypothesized model (as depicted in Figure 3). After reviewing the beta coefficients in the hypothesized model, it was determined that the path between experiential identification and wishful identification was not significant ($\beta = -0.06, p = .10$). Therefore, the path between experiential identification and wishful identification was removed from the model and the maximum likelihood estimation procedure was performed again. This time, the analyses indicated that the model, depicted in Figure 7, was an acceptable fit for the data ($\chi^2 = 2.47, df = 1, p = .12, \text{CFI} = .99, \text{RMSEA} = .06, 90\% \text{ CI}: 0.00 – 0.17, \text{PCLOSE} = .27, \text{Hoelter’s } N = 967$).

Contrary to prediction, perceived similarity was negatively associated with parasocial interaction, experiential identification, and likability but positively associated with wishful identification. Because perceived similarity was not positively associated with all of the other components of character involvement, H11a was not supported. H11b predicted that parasocial interaction would be positively associated with all of the elements in the character involvement model but H11b was only partly supported. Although parasocial interaction was positively

![Figure 7. Character involvement model.](image-url)
associated with experiential identification and likability, it was negatively associated with wishful identification. H12a was only partly supported because experiential identification was positively associated with likability but not with wishful identification. H12b was not supported because likability was negatively associated with wishful identification.

The next set of questions addressed the influence of the character involvement processes on the persuasive outcomes that are of interest to the EE strategy. The correlations among the character involvement processes, cognitive and affective message responses, and health outcomes are presented in Table 7.
Table 7

Correlations among Character Involvement Processes, Cognitive and Affective Responses, and Health Outcomes

<table>
<thead>
<tr>
<th>Variable</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
<th>10.</th>
<th>11.</th>
<th>12.</th>
<th>13.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Character similarity</td>
<td>-.56**</td>
<td>-.49**</td>
<td>-.59**</td>
<td>.72**</td>
<td>-.10</td>
<td>-.14*</td>
<td>-.11*</td>
<td>-.02</td>
<td>-.24**</td>
<td>-.10</td>
<td>.11*</td>
<td>.01</td>
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<tr>
<td>2. Parasocial interaction</td>
<td>.66**</td>
<td>.73**</td>
<td>-.73**</td>
<td>.03</td>
<td>.23**</td>
<td>.11*</td>
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<tr>
<td>3. Experiential identification</td>
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<td>-.55**</td>
<td>.01</td>
<td>.17**</td>
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<tr>
<td>4. Likability</td>
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<td>.19**</td>
<td>.03</td>
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<td>.22**</td>
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<td>5. Wishful identification</td>
<td>-.05</td>
<td>-.22*</td>
<td>-.01</td>
<td>.01</td>
<td>-.18**</td>
<td>-.11*</td>
<td>.05</td>
<td>.03</td>
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</tr>
<tr>
<td>6. Cognitive elaboration</td>
<td>.06</td>
<td>-.10</td>
<td>-.09</td>
<td>.02</td>
<td>.05</td>
<td>-.07</td>
<td>.01</td>
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</tr>
<tr>
<td>7. Counterarguing</td>
<td>-.01</td>
<td>.02</td>
<td>.03</td>
<td>.01</td>
<td>-.03</td>
<td>-.08</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>8. Perceived relevance</td>
<td>-.07</td>
<td>.23**</td>
<td>-.01</td>
<td>-.08</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Reactance</td>
<td>-.08</td>
<td>-.07</td>
<td>.00</td>
<td>-.06</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>10. Program enjoyment</td>
<td>-.07</td>
<td>-.06</td>
<td>.12*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>11. Belief change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.15**</td>
<td>.06</td>
</tr>
<tr>
<td>12. Attitude change</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>-.03</td>
<td></td>
</tr>
<tr>
<td>13. Behavioral intention change</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* *p < .05. **p < .01.
To determine the influence of the various character involvement processes on message outcomes, a series of regression analyses was conducted. Racial identification, gender, program, previous episode exposure, and regular viewership were entered into each model in addition to the main variables of interest.

**Cognitive responses.** Table 8 presents the results for H13. Contrary to prediction, the results indicated that perceived similarity significantly did not influence cognitive elaboration. Therefore, H13 was not supported.

Table 8

*Perceived Similarity as a Predictor of Cognitive Elaboration*

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.05</td>
<td>.05</td>
<td>.57</td>
</tr>
<tr>
<td>Racial identification</td>
<td>-.04</td>
<td>.01</td>
<td>-.67</td>
</tr>
<tr>
<td>Program</td>
<td>.16</td>
<td>.15</td>
<td>3.08**</td>
</tr>
<tr>
<td>Previous episode exposure</td>
<td>-.13</td>
<td>.05</td>
<td>1.23</td>
</tr>
<tr>
<td>Regular viewership</td>
<td>.04</td>
<td>.04</td>
<td>.42</td>
</tr>
<tr>
<td>Perceived similarity</td>
<td>-.06</td>
<td>.13</td>
<td>-1.16</td>
</tr>
</tbody>
</table>

R² = .04

F (6, 354) = 2.53*

As shown in Table 9 below, experiential identification did not predict cognitive elaboration. Therefore, H14 was not supported.
Table 9

*Experiential Identification as a Predictor of Cognitive Elaboration*

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.04</td>
<td>.05</td>
<td>.50</td>
</tr>
<tr>
<td>Racial identification</td>
<td>-.04</td>
<td>.01</td>
<td>-.69</td>
</tr>
<tr>
<td>Program</td>
<td>.17</td>
<td>.15</td>
<td>3.22**</td>
</tr>
<tr>
<td>Previous episode exposure</td>
<td>-.13</td>
<td>.05</td>
<td>1.23</td>
</tr>
<tr>
<td>Regular viewership</td>
<td>.04</td>
<td>.04</td>
<td>.44</td>
</tr>
<tr>
<td>Experiential identification</td>
<td>-.01</td>
<td>.14</td>
<td>-.15</td>
</tr>
<tr>
<td>R²</td>
<td>.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F (6, 354)</td>
<td>2.30*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Table 10 shows that, contrary to prediction, parasocial interaction was *positively* associated with counterarguing. Therefore, H15 was not supported.

Table 10

*Parasocial Interaction as a Predictor of Counterarguing*

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.07</td>
<td>.00</td>
<td>-.92</td>
</tr>
<tr>
<td>Racial identification</td>
<td>-.10</td>
<td>.00</td>
<td>1.82</td>
</tr>
<tr>
<td>Program</td>
<td>-.05</td>
<td>.01</td>
<td>-.94</td>
</tr>
<tr>
<td>Previous episode exposure</td>
<td>.10</td>
<td>.00</td>
<td>.94</td>
</tr>
<tr>
<td>Regular viewership</td>
<td>-.00</td>
<td>.00</td>
<td>.04</td>
</tr>
<tr>
<td>Parasocial interaction</td>
<td>.24</td>
<td>.01</td>
<td>4.59**</td>
</tr>
<tr>
<td>R²</td>
<td>.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F (6, 354)</td>
<td>4.54**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05.  ** p < .01.
As shown in Table 11, experiential identification was positively associated with counterarguing. Therefore, H16 was not supported.

Table 11

*Experiential Identification as a Predictor of Counterarguing*

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-.07</td>
<td>.00</td>
<td>-.88</td>
</tr>
<tr>
<td>Racial identification</td>
<td>-.00</td>
<td>.00</td>
<td>-1.67</td>
</tr>
<tr>
<td>Program</td>
<td>-.03</td>
<td>.01</td>
<td>-.57</td>
</tr>
<tr>
<td>Previous episode exposure</td>
<td>.09</td>
<td>.00</td>
<td>.80</td>
</tr>
<tr>
<td>Regular viewership</td>
<td>.02</td>
<td>.00</td>
<td>.25</td>
</tr>
<tr>
<td>Experiential identification</td>
<td>.17</td>
<td>.01</td>
<td>3.26**</td>
</tr>
</tbody>
</table>

R² | .05
F (6, 354) | 2.76**

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

As shown in Table 12, perceived similarity was not positively associated with perceived relevance. Therefore, H17 was not supported.
Table 12

Perceived Similarity as a Predictor of Perceived Relevance

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-.08</td>
<td>.02</td>
<td>-1.02</td>
</tr>
<tr>
<td>Racial identification</td>
<td>-.03</td>
<td>.01</td>
<td>-.60</td>
</tr>
<tr>
<td>Program</td>
<td>.06</td>
<td>.07</td>
<td>1.07</td>
</tr>
<tr>
<td>Previous episode exposure</td>
<td>.07</td>
<td>.02</td>
<td>.61</td>
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<tr>
<td>Regular viewership</td>
<td>-.13</td>
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<td>-1.43</td>
</tr>
<tr>
<td>Perceived similarity</td>
<td>-.09</td>
<td>.06</td>
<td>-1.70</td>
</tr>
</tbody>
</table>

R²          .04
F (6, 354)   2.34*

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

As shown in Table 13, experiential identification was positively associated with perceived relevance, as predicted. Therefore, H18 was supported.

Table 13

Experiential Identification as a Predictor of Perceived Relevance

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-.08</td>
<td>.02</td>
<td>-.96</td>
</tr>
<tr>
<td>Racial identification</td>
<td>-.04</td>
<td>.01</td>
<td>-.63</td>
</tr>
<tr>
<td>Program</td>
<td>.06</td>
<td>.07</td>
<td>1.19</td>
</tr>
<tr>
<td>Previous episode exposure</td>
<td>.07</td>
<td>.02</td>
<td>.67</td>
</tr>
<tr>
<td>Regular viewership</td>
<td>-.15</td>
<td>.02</td>
<td>-1.58</td>
</tr>
<tr>
<td>Experiential identification</td>
<td>.11</td>
<td>.06</td>
<td>2.05*</td>
</tr>
</tbody>
</table>

R²          .04
F (6, 354)   2.58*

* p < .05. ** p < .01.
Finally, post-hoc maximum likelihood estimates were performed to determine whether the significant associations between parasocial interaction and counterarguing, experiential identification and counterarguing, and experiential identification and perceived relevance would remain when all of the components of the character processing model (and the relationships among them) were accounted for. The analyses indicate that model, depicted in Figure 8, was an acceptable fit for the data \( \chi^2 = 5.33, df = 5, p = .26, \text{CFI} = .99, \text{RMSEA} = .03, 90\% \text{ CI: } 0.00 – 0.17, \text{PCLOSE} = .63, \text{Hoelter’s } N = 900 \). As indicated in Figure 8, only the relationship between parasocial interaction and counterarguing remained statistically significant.

\[ \text{Figure 8. The influence of character involvement on cognitive message responses.} \]

**Affective responses.** Next, regressions were conducted to test the relationships among the character involvement processes and the *affective* message responses (i.e., reactance and program enjoyment). As shown in Table 14, the results indicate that parasocial interaction was not significantly associated with reactance. Therefore, H19 was not supported.
Table 14

*Parasocial Interaction as a Predictor of Reactance*

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-.21</td>
<td>.02</td>
<td>-2.65**</td>
</tr>
<tr>
<td>Racial identification</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Program</td>
<td>.09</td>
<td>.06</td>
<td>1.80</td>
</tr>
<tr>
<td>Previous episode exposure</td>
<td>.00</td>
<td>.02</td>
<td>.03</td>
</tr>
<tr>
<td>Regular viewership</td>
<td>.01</td>
<td>.01</td>
<td>.15</td>
</tr>
<tr>
<td>Parasocial interaction</td>
<td>-.07</td>
<td>.05</td>
<td>-1.27</td>
</tr>
</tbody>
</table>

\[ R^2 = .05 \]
\[ F (6, 354) = 3.25** \]

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

As displayed in Table 15, experiential identification was negatively associated with reactance. Therefore, H20 was supported.

Table 15

*Experiential Identification as a Predictor of Reactance*

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-.22</td>
<td>.02</td>
<td>2.83**</td>
</tr>
<tr>
<td>Racial identification</td>
<td>-.00</td>
<td>.00</td>
<td>-.04</td>
</tr>
<tr>
<td>Program</td>
<td>.09</td>
<td>.06</td>
<td>1.79</td>
</tr>
<tr>
<td>Previous episode exposure</td>
<td>.00</td>
<td>.02</td>
<td>.02</td>
</tr>
<tr>
<td>Regular viewership</td>
<td>.02</td>
<td>.01</td>
<td>.25</td>
</tr>
<tr>
<td>Experiential identification</td>
<td>-.15</td>
<td>.05</td>
<td>-2.92**</td>
</tr>
</tbody>
</table>

\[ R^2 = .07 \]
\[ F (6, 354) = 4.46** \]

* p < .05. ** p < .01.
As depicted in Table 16, likability was not significantly associated with reactance. Therefore, H21 was not supported.

Table 16

*Likability as a Predictor of Reactance*

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-.20</td>
<td>.02</td>
<td>-2.56**</td>
</tr>
<tr>
<td>Racial identification</td>
<td>-.01</td>
<td>.00</td>
<td>-.09</td>
</tr>
<tr>
<td>Program</td>
<td>.09</td>
<td>.06</td>
<td>1.79</td>
</tr>
<tr>
<td>Previous episode exposure</td>
<td>.00</td>
<td>.02</td>
<td>.02</td>
</tr>
<tr>
<td>Regular viewership</td>
<td>.01</td>
<td>.01</td>
<td>.11</td>
</tr>
<tr>
<td>Liking</td>
<td>-.05</td>
<td>.05</td>
<td>-.84</td>
</tr>
</tbody>
</table>

R² .05

F (6, 354) 3.10**

* p < .05. ** p < .01.
Table 17 shows that, as expected, experiential identification was positively associated with program enjoyment. Therefore, H22 was supported.

Table 17

*Experiential identification as a Predictor of Enjoyment*

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-.16</td>
<td>.02</td>
<td>-2.15*</td>
</tr>
<tr>
<td>Racial identification</td>
<td>-.02</td>
<td>.00</td>
<td>-.32</td>
</tr>
<tr>
<td>Program</td>
<td>-.05</td>
<td>.05</td>
<td>-0.96</td>
</tr>
<tr>
<td>Previous episode exposure</td>
<td>.06</td>
<td>.02</td>
<td>.57</td>
</tr>
<tr>
<td>Regular viewership</td>
<td>.01</td>
<td>.01</td>
<td>.11</td>
</tr>
<tr>
<td>Experiential identification</td>
<td>.36</td>
<td>.05</td>
<td>7.22**</td>
</tr>
</tbody>
</table>

R²  .15  
F (6, 354) 10.48**

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

To answer the fifth research question about the influence of the other character involvement processes on program enjoyment, a regression model was computed with all of the remaining character involvement processes (i.e., perceived, similarity, parasocial interaction, likability, and wishful identification) as predictors of program enjoyment. As shown in Table 17, perceived similarity, parasocial interaction, and wishful identification were all significantly related to program enjoyment, although perceived similarity was negatively related to it.
Table 18

*Character Involvement Processes as Predictors of Enjoyment*

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-.14</td>
<td>.02</td>
<td>-1.92</td>
</tr>
<tr>
<td>Racial identification</td>
<td>-.04</td>
<td>.00</td>
<td>-.83</td>
</tr>
<tr>
<td>Program</td>
<td>-.06</td>
<td>.05</td>
<td>-1.22</td>
</tr>
<tr>
<td>Previous episode exposure</td>
<td>.05</td>
<td>.02</td>
<td>.45</td>
</tr>
<tr>
<td>Regular viewership</td>
<td>-.02</td>
<td>.01</td>
<td>.21</td>
</tr>
<tr>
<td>Perceived similarity</td>
<td>-.15</td>
<td>.06</td>
<td>-2.16*</td>
</tr>
<tr>
<td>Parasocial interaction</td>
<td>.48</td>
<td>.07</td>
<td>6.23**</td>
</tr>
<tr>
<td>Likability</td>
<td>-.02</td>
<td>.07</td>
<td>-.26</td>
</tr>
<tr>
<td>Wishful identification</td>
<td>.26</td>
<td>.07</td>
<td>2.72**</td>
</tr>
<tr>
<td>R²</td>
<td>.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F (9, 354)</td>
<td>8.42**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Finally, post-hoc maximum likelihood estimates were performed to determine whether the significant associations between the various character involvement processes and the affective outcomes of interest would remain significant when all of the components of the character processing model (and the relationships among them) were accounted for. The analyses indicate that model, depicted in Figure 9, was an acceptable fit for the data ($\chi^2 = 5.33$, df = 5, p = .26, CFI = .99, RMSEA = .03, 90% CI: 0.00 – 0.17, PCLOSE= .63, Hoelter’s N = 900).

Experiential identification remained significantly associated with reactance and program enjoyment. Perceived similarity, parasocial interaction, and wishful identification all remained significantly associated with program enjoyment.
Health outcomes. Finally, a series of regression analyses was conducted to analyze the influence of the character involvement processes on the health outcomes (i.e., changes in story-consistent belief, attitude, and behavioral intention). None of the components in the character involvement process had a direct influence on story-consistent belief change (shown in Table 19), attitude change (shown in Table 20), or behavioral intention change (shown in Table 21). The results indicate that experiential identification was not significantly associated with changes in participants’ beliefs, attitudes, or behavioral intentions. Therefore, H23 was not supported. Also contrary to prediction, wishful identification was not associated with changes in participants’ beliefs, attitudes, or behavioral intentions. Therefore, H24 was not supported. The answer to the sixth research question, then, is that none of the character involvement processes was significantly related to any of the health outcomes of interest in this study.
Table 19

Character Involvement Processes as Predictors of Belief Change

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-.00</td>
<td>.02</td>
<td>-.04</td>
</tr>
<tr>
<td>Racial identification</td>
<td>.02</td>
<td>.00</td>
<td>.29</td>
</tr>
<tr>
<td>Program</td>
<td>.10</td>
<td>.06</td>
<td>1.79</td>
</tr>
<tr>
<td>Previous episode exposure</td>
<td>-.01</td>
<td>.02</td>
<td>-.05</td>
</tr>
<tr>
<td>Regular viewership</td>
<td>.05</td>
<td>.01</td>
<td>.56</td>
</tr>
<tr>
<td>Perceived similarity</td>
<td>-.08</td>
<td>.07</td>
<td>-.95</td>
</tr>
<tr>
<td>Parasocial interaction</td>
<td>-.11</td>
<td>.08</td>
<td>-1.20</td>
</tr>
<tr>
<td>Experiential identification</td>
<td>.02</td>
<td>.07</td>
<td>.27</td>
</tr>
<tr>
<td>Likability</td>
<td>-.08</td>
<td>.08</td>
<td>-.80</td>
</tr>
<tr>
<td>Wishful identification</td>
<td>-.17</td>
<td>.07</td>
<td>-1.62</td>
</tr>
</tbody>
</table>

R²: .03
F (9, 354): 1.19

* p < .05. ** p < .01.
Table 20

*Character Involvement Processes as Predictors of Attitude Change*

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.35</td>
<td>.01</td>
<td>4.68**</td>
</tr>
<tr>
<td>Racial identification</td>
<td>.03</td>
<td>.00</td>
<td>.59</td>
</tr>
<tr>
<td>Program</td>
<td>-.07</td>
<td>.04</td>
<td>-1.29</td>
</tr>
<tr>
<td>Previous episode exposure</td>
<td>.03</td>
<td>.01</td>
<td>.28</td>
</tr>
<tr>
<td>Regular viewership</td>
<td>.01</td>
<td>.01</td>
<td>.04</td>
</tr>
<tr>
<td>Perceived similarity</td>
<td>.08</td>
<td>.05</td>
<td>1.08</td>
</tr>
<tr>
<td>Parasocial interaction</td>
<td>-.12</td>
<td>.05</td>
<td>-1.42</td>
</tr>
<tr>
<td>Experiential identification</td>
<td>-.02</td>
<td>.05</td>
<td>-.36</td>
</tr>
<tr>
<td>Likability</td>
<td>.10</td>
<td>.05</td>
<td>1.12</td>
</tr>
<tr>
<td>Wishful identification</td>
<td>-.03</td>
<td>.05</td>
<td>-.34</td>
</tr>
</tbody>
</table>

R²                      | .18   |
F (10, 354)              | 7.51** |

* p < .05. ** p < .01.
Table 21

*Character Involvement Processes as Predictors of Behavioral Intention Change*

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-.10</td>
<td>.02</td>
<td>-1.27</td>
</tr>
<tr>
<td>Racial identification</td>
<td>.05</td>
<td>.00</td>
<td>.91</td>
</tr>
<tr>
<td>Program</td>
<td>-.04</td>
<td>.05</td>
<td>-.67</td>
</tr>
<tr>
<td>Previous episode exposure</td>
<td>.03</td>
<td>.02</td>
<td>.24</td>
</tr>
<tr>
<td>Regular viewership</td>
<td>.06</td>
<td>.01</td>
<td>.61</td>
</tr>
<tr>
<td>Perceived similarity</td>
<td>-.03</td>
<td>.06</td>
<td>-.43</td>
</tr>
<tr>
<td>Parasocial interaction</td>
<td>.01</td>
<td>.07</td>
<td>.09</td>
</tr>
<tr>
<td>Experiential identification</td>
<td>.12</td>
<td>.06</td>
<td>1.68</td>
</tr>
<tr>
<td>Likability</td>
<td>-.11</td>
<td>.07</td>
<td>-1.18</td>
</tr>
<tr>
<td>Wishful identification</td>
<td>.03</td>
<td>.07</td>
<td>.30</td>
</tr>
</tbody>
</table>

R²    | .02  |
F (10, 354) | .84  |

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

In summary, nine of the 23 hypotheses in this study were fully or partially supported and 16 of the hypotheses were not supported, as indicated below in Table 22.
Table 22

*Summary of Support and Non-Support for Hypotheses*

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Transportation will be negatively associated with counterarguing.</td>
<td>No</td>
</tr>
<tr>
<td>H2a: Transportation will be positively associated with story-consistent health beliefs.</td>
<td>Yes</td>
</tr>
<tr>
<td>H2b: Transportation will be positively associated with story-consistent health attitudes.</td>
<td>No</td>
</tr>
<tr>
<td>H2c: Transportation will be positively associated with story-consistent health behavioral intentions.</td>
<td>No</td>
</tr>
<tr>
<td>H3: Counterarguing will mediate the influence of transportation on story-consistent health-related beliefs, attitudes, and behavioral intentions.</td>
<td>No</td>
</tr>
<tr>
<td>H4: Heightened levels of transportation will be positively associated with story-consistent cognitive elaboration.</td>
<td>No</td>
</tr>
<tr>
<td>H5: Cognitive elaboration will mediate the influence of transportation on story-consistent health beliefs, attitudes, and behavioral intentions.</td>
<td>No</td>
</tr>
<tr>
<td>H6: Transportation will be positively associated with the perception that a story-related health topic is personally relevant.</td>
<td>Yes</td>
</tr>
<tr>
<td>H7: The perception that a health topic is personally relevant will mediate the influence of transportation on health beliefs, attitudes, and behavioral intentions.</td>
<td>No</td>
</tr>
</tbody>
</table>
Table 22 (continued)

*Summary of Support and Non-Support for Hypotheses*

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H8: Transportation will reduce psychological reactance.</td>
<td>No</td>
</tr>
<tr>
<td>H9: Psychological reactance will mediate the influence of transportation on health beliefs, attitudes, and behavioral intentions.</td>
<td>No</td>
</tr>
<tr>
<td>H10: Transportation will be positively associated with enjoyment of EE programs.</td>
<td>Yes</td>
</tr>
<tr>
<td>H11a: Perceived similarity will be positively associated with parasocial interaction, experiential identification, likeability, and wishful identification.</td>
<td>No</td>
</tr>
<tr>
<td>H11b: Parasocial interaction will be positively associated with experiential identification, likeability, and wishful identification.</td>
<td>Partial</td>
</tr>
<tr>
<td>H12a: Experiential identification will be positively associated with likability and wishful identification.</td>
<td>Partial</td>
</tr>
<tr>
<td>H12b: Likeability will be positively associated with wishful identification.</td>
<td>No</td>
</tr>
<tr>
<td>H13: Perceived similarity will be positively associated with cognitive elaboration.</td>
<td>No</td>
</tr>
<tr>
<td>H14: Experiential identification will be positively associated with cognitive elaboration.</td>
<td>No</td>
</tr>
</tbody>
</table>
Table 22 (continued)

**Summary of Support and Non-Support for Hypotheses**

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>H15: Parasocial interaction will be negatively associated with counterarguing.</td>
<td>No</td>
</tr>
<tr>
<td>H16: Experiential identification will be negatively associated with counterarguing.</td>
<td>Yes</td>
</tr>
<tr>
<td>H17: Perceived similarity will be positively associated with the perception that a health topic is personally relevant.</td>
<td>No</td>
</tr>
<tr>
<td>H18: Experiential identification will be positively associated with the perception that a health topic is personally relevant.</td>
<td>Yes</td>
</tr>
<tr>
<td>H19: Parasocial interaction will be negatively associated with psychological reactance.</td>
<td>No</td>
</tr>
<tr>
<td>H20: Experiential identification will be negatively associated with psychological reactance.</td>
<td>Yes</td>
</tr>
<tr>
<td>H21: Character liking will be negatively associated with psychological reactance.</td>
<td>No</td>
</tr>
<tr>
<td>H22: Experiential identification will be positively associated with program enjoyment.</td>
<td>Yes</td>
</tr>
<tr>
<td>H23: Experiential identification will be positively related to story-consistent changes in one’s health beliefs, attitudes, and behavioral intentions.</td>
<td>No</td>
</tr>
<tr>
<td>H24: Wishful identification will be positively related to story-consistent changes in one’s health beliefs, attitudes, and behavioral intentions.</td>
<td>No</td>
</tr>
</tbody>
</table>
CHAPTER 5
DISCUSSION

Research suggests that the presentation of engaging stories and story characters is central to the persuasive capacity of the entertainment-education strategy. The purpose of this study was to explicate the theoretical and empirical distinctions among the various facets of audience involvement with EE stories and story characters from primetime television. Central to this investigation of how audiences become involved in EE messages was an examination of how those involvement processes influenced participants’ cognitive and affective responses to those messages, and subsequently, affected three important health outcomes: beliefs, attitudes, and behavioral intentions. The purpose of the following chapter is to provide a review of the key findings and highlight the significant contributions of this study.

This discussion is divided into four sections. First, a review of the general trends in the data generated by this study will be provided. The second section will feature a discussion of the import of the findings about the influence of transportation and narrative engagement on the participants’ cognitive and affective responses to the EE messages and the health outcomes of interest. In the third section of this chapter, a review and discussion of the substance of the findings about the different components of audience involvement with EE story characters will highlight the chief contribution of this study to the EE literature. The fourth section of this chapter will feature a discussion of the limitations and strengths of the research design used in this study.

General Trends in the Data

One of the strengths of this particular study is the inclusion of various methodological approaches to the assessment of audience involvement. This study included the use of two
previously validated scales designed to assess involvement with narrative texts (i.e., the transportation and narrative engagement scales), the use of two thought-listing tasks designed to generate open-ended data about the participants’ thoughts about both the EE program and the story characters, several items to assess involvement with story characters (many of which were adapted from previous studies), one previously validated scale to assess participant’s cognitive responses to EE messages (i.e., perceived relevance), two previously validated scales to assess participants’ affective responses to EE messages (i.e., state reactance and program enjoyment), and finally, pre and post-exposure items to assess changes in participants’ health beliefs, attitudes, and behavioral intentions. In spite of the diversity in the number of measures used to assess the constructs of interest, some of these measures did not perform as expected. In this section of the discussion, I provide an overview of how the data from this study did not perform on those scales and items as expected.

**Thought-listing tasks.** In general, the thought-listing tasks administered to the participants immediately after exposure to the EE program generated interesting data about the participants’ cognitions and emotions toward the program and the program characters. These data were used in two ways. First, the thought-listing data were used to generate an index of the degree to which participants engaged in cognitive elaboration about the EE programs. This index was created by summing the total number of story-related thoughts that each participant produced ($M = 7.87, SD = 3.29$). Interestingly, cognitive elaboration was not significantly associated with any of the cognitive or affective responses assessed in this study. It was also not associated with the three health outcomes assessed in this study.

Although these findings suggest that cognitive elaboration did not significantly mediate any of the message outcomes of interest, it is possible that participants’ thoughts about EE
programs have the potential to shape message outcomes. Assessing the influence of elaboration on changes in health beliefs, attitudes, and behavioral intentions immediately after exposure does not allow us to observe how involvement with EE television programs might have a delayed influence on those outcomes. Some research suggests that narrative persuasion happens over time. Appel and Richter (2007), for example, demonstrated a sleeper effect in their investigation of how participants’ real-world beliefs were changed, over time, after reading a fictional narrative. Their findings demonstrated that participants’ erroneous beliefs, based on the narrative text they read, were more pronounced and more extreme two weeks after reading the narrative. Appel and Richter (2007) suggest that it is more appropriate to conceptualize narrative persuasion as a process in which narrative exposure shapes a person’s real-world knowledge over time. Future studies should continue to explore the long-term effect of cognitive elaboration (and other message responses) on message outcomes. Future studies should explore whether certain types of thoughts (rather than just the sum of all message-related thoughts) are more or less predictive of certain types of message outcomes. For example, we might find that cognitive elaboration of the health-related content in EE programs is more predictive of changes in health beliefs, attitudes, and behavioral intentions than a global measure of cognitive elaboration. If one of the chief goals of EE research is to delineate how audience involvement with narratives can facilitate persuasive outcomes, it is necessary to continue our investigation of how best to assess the influence of cognitive elaboration on those outcomes.

Second, the thoughts were content analyzed for the presence of counterarguments about EE programs. A variable for counterarguments was generated by summing the number of thoughts that demonstrated that the participants were raising questions and uncertainties about the veracity of the story or story characters. In general, participants did not generate many
counterarguments ($M = .11, SD = .18$). It is not surprising, therefore, that the counterarguing variable was significantly associated with only one of the outcomes of interest: parasocial interaction.

Contrary to prediction, parasocial interaction was positively associated with counterarguing. Although we might expect that having a relationship with a program character (or actor) inhibits the tendency for audiences to critically scrutinize the messages in which those characters or actors appear, the findings in this study suggest that the relationship between parasocial interaction and counterarguing is not so straightforward. It is possible that those participants who feel more connected to the program character they selected for the thought-listing task generated more critical thoughts because they were thinking about their characters with great cognitive complexity and abstraction. Counterarguing, then, might actually reflect a deeper level of involvement. If this is the case, then it becomes important to reconsider our assessment of counterarguing in the context of narrative persuasion.

It is unclear how to improve the assessment of counterarguing in future studies. Some researchers have employed a scaled assessment of counterarguing (see Moyer-Guse & Nabi, 2010) wherein participants are asked to respond to statements about the degree to which they found themselves arguing with the story or text (e.g., “While watching the program, I sometimes found myself thinking of ways I disagree with what was being presented”). Unfortunately, this approach to assessing counterarguing does not allow researchers to determine the target of those counterarguments. As Moyer-Guse and Nabi (2010) suggested, this approach to assessing counterarguing does not discriminate between participants who feel they are arguing with the characters in a program (which would indicate a deep level of involvement with story) and participants who argue against the premise(s) of a program. The purpose of using thought-
listing data was to determine whether participants were actually thinking about or questioning the veracity of the story or story characters.

Unfortunately, in this study, the participants simply did not generate a lot of critical thoughts about the EE programs they saw. By itself, these findings might suggest some kind of measurement error (i.e., perhaps the coding scheme or the coding itself was not stringent enough to adequately capture the frequency of counterarguments). In light of previous research findings that demonstrated that the thought-listing method has failed to generate a lot of counterarguments (e.g., Slater & Rouner, 2002), it appears that researchers might need to reconsider the use of the thought-listing method to assess counterarguing in the domain of narrative persuasion. As Slater and Rouner (2002) suggested in their E-ELM, it is possible that counterarguing is just fundamentally incompatible with the cognitive and affective processes needed for narrative involvement. It is not practical to expect that viewers who are relatively involved in a television program will produce a substantial number of thoughts that are critical about that program (at least in the absence of a prompt that invites criticism). Perhaps conceptualizing counterarguments as thoughts that question the veracity of the claims made in a story makes it too difficult to detect critical thinking about the premise(s) or quality of a story. Future research efforts should consider alternative conceptualizations of counterarguments when thought-listing data are generated.

**Health outcomes.** A significant number of the hypotheses and research questions in this study addressed the influence of cognitive and affective responses to EE programs on participants’ health beliefs, attitudes, and behavioral intentions. A major strength of the present study was the use of pre- and post-exposure measures to assess changes in these health outcomes. The data suggest that there were significant improvements in these health outcomes
(such that post-exposure scores reflected increases in story-consistent beliefs, attitudes, and behavioral intentions). These data, however, were not without some measurement error. The belief items used to assess participants’ health beliefs about the importance of STI screening, cancer screening, organ donation, and patient-provider communication were not all reliable. As a result, single-item indices were used to construct a magnitude of changes score for participants’ beliefs about STI screening and cancer screening. Program enjoyment was the only one of the cognitive and affective responses that was directly associated with the health outcomes, and experiential identification was the only facet of audience involvement that predicted changes in the health outcomes (albeit, only one of the outcomes: changes in behavioral intentions). Given the weak operationalization of health beliefs, it is unclear whether the failure of the various facets of narrative involvement, and the majority of the cognitive and affective responses, to predict the health outcomes is a function of how these constructs operate or simply a function of poor measurement.

Another limitation in the data was the failure of the health belief, attitude, and behavioral intention change items to predict one another (as we might expect them to from a TRA/TPB framework). The changes in behavioral intentions item was not even correlated with the changes in beliefs or changes in attitudes items. Hence, in all of the models, changes in attitudes did not predict changes in behavioral intentions (although changes in health beliefs did predict changes in health attitudes). Future studies should attempt to refine the measurement of health beliefs, attitudes, and behavioral intentions in order to more adequately assess the relationships among those constructs and their relationships to the other processes and responses of interest to the EE strategy.
The Influence of Transportation and Narrative Engagement

A major focus of the present study was to explore how the different facets of audience involvement with EE programs are related to a) one another; b) the cognitive and affective responses that are important to the process of health persuasion; and c) health outcomes. In the present study, audience involvement was assessed using three measures: transportation, narrative engagement, and character involvement. The purpose of this section of the discussion is to review the major findings related to the influence of transportation and narrative engagement.

Transportation. Green and Brock’s (2000) transportation imagery scale was designed to give researchers a tool to assess the experience that audiences have when they become phenomenologically immersed in a narrative. Theoretically, higher levels of transportation into EE texts should produce more story-consistent beliefs and attitudes. In the present study, transportation was only directly associated with changes in health beliefs. Viewer involvement was positively associated with beliefs about the importance of STI and cancer screening and the importance of being honest with one’s doctors. In addition to garnering empirical support for the notion that becoming experientially involved with entertainment programming does enhance viewers’ story-consistent beliefs, these findings also suggest that using entertainment media to positively influence the target audience’s health beliefs is an effective health promotion strategy. These results also point to how essential it is to create EE programs that are involving. In addition to exploring the influence of transportation on health beliefs, attitudes, and behavioral intentions, future research should also explore the message elements and exposure conditions that enhance the experience of transportation in order to bolster its influence on health outcomes.

Transportation also influenced the cognitive and affective responses to EE programs (which in turn, influenced the sexual health outcomes of interest). In particular, participants’
transportation scores were positively associated with their perceptions that the health topic featured in an EE program was personally relevant. This finding is consistent with Moyer-Guse’s (2008) EORM framework, which suggests that the experience of being immersed in a story will enhance the degree to which individuals feel that a health issue is personally relevant. Earlier work examined the influence of other facets of audience involvement (i.e., identification with story characters and perceived similarity) on the audience’s perceived vulnerability (i.e., personal risk factors) about a health topic. This study is the first to provide empirical evidence that transportation itself has an influence on the perception that the health topic featured in an EE program is personally relevant. The relationship between transportation and perceived relevance lends further support to the usefulness of the EE strategy. When audiences are sufficiently involved by EE stories and story characters, they are more responsive to the health information presented in those stories.

Contrary to prediction, transportation was not associated with state reactance. In her EORM framework, Moyer-Guse (2008) theorized that the experience of being immersed in EE stories should inhibit the defensive reactions, like reactance, that commonly occur when people are exposed to overtly persuasive messages. It is not clear why the experience of being transported into an EE program did not influence reactance. Interestingly, the results suggest that reactance was positively associated with changes in participants’ story-consistent attitudes. These findings are also contrary to the idea that reactance to a persuasive message should inhibit persuasive outcomes. Although it does not quite make sense that higher levels of reactance would positively influence story-consistent attitudes, it is possible that these findings indicate an isomorphic overlap in the operationalization of affective responses to the EE programs. More research is needed to explore the nature of affective responses to EE messages. Although this is
the first study to examine the relationship between transportation and reactance, there is a clear need for further exploration of how the experience of being involved with EE programs influences affective responses as well as affective outcomes.

As expected, transportation was also positively associated with program enjoyment. It is not surprising to find that the experience of being highly involved in EE programs enhanced the degree to which participants’ reported enjoying those programs. It is also interesting that transportation influenced program enjoyment which subsequently mediated the influence of transportation story-consistent changes in both beliefs and behavioral intentions. It is surprising that enjoyment did not mediate the influence of transportation on attitudes, particularly because enjoyment and attitude change are both assessments of affective responses to the EE programs. Put together, the results suggest that transportation has both a direct and indirect effect on story-consistent belief change. Although transportation did not directly influence behavioral intentions, the finding that there was an indirect relationship between the two variables supports the notion that the experience of being involved in EE program influences health outcomes. Moreover, these data suggest that EE message designers should take care to create messages that target audiences enjoy watching. Future research should continue to explore how enjoyment influences various health outcomes.

Narrative engagement. This is the first study to apply Busselle and Bilandzic’s (2010) narrative engagement construct to the EE genre, and it is the first study to examine the underlying dimensions of narrative engagement on various cognitive and affective message responses and health outcomes. When narrative engagement was entered in a model as a single variable, it performed in ways that were somewhat different from transportation. Like transportation, narrative engagement only predicted two of the cognitive and affective message
responses of interest in the present study. However, unlike transportation, narrative engagement was negatively associated with reactance. These findings are consistent with Moyer-Guse’ (2008) theoretical prediction that the experience of being highly involved with a persuasive story should inhibit defense reactions to those messages. Reactance also mediated the influence of narrative engagement on story-consistent changes in participants’ attitudes. As before, the finding that reactance is positively related to attitude change is troublesome and warrants future investigation in other health and message contexts.

Like transportation, narrative engagement was positively associated with program enjoyment. Program enjoyment also mediated the influence of narrative engagement on story-consistent changes in participants’ behavioral intentions. As with transportation, these findings lend empirical support to the idea that the experience of being involved with EE programs is central to the capacity for those programs to influence health outcomes.

One of the key contributions of this study is to provide an empirical exploration of how the different dimensions of audience involvement are related to the cognitive and affective message responses of interest in this study. Fortunately, the narrative engagement scale can be divided into subscales to distinguish among the different dimensions of engagement (Busselle & Bilandzic, 2009). By examining what particular facet(s) of narrative engagement are negatively or positively associated with the different kinds of message responses, we can better determine how the experience of audience involvement influences health outcomes.

The dimensions of narrative engagement. The relationships among the four dimensions of narrative engagement, attentional focus, emotional engagement, narrative presence, and narrative understanding, and the various cognitive and affective responses and health outcomes were assessed in this study. Narrative presence was the only dimension of narrative engagement
that did not significantly predict any of the message responses or outcomes. Attentional focus was significantly associated with program enjoyment. This is consistent with Busselle and Bilandzic’s (2009) suggestion that the experience of being involved in a story is dependent on the degree to which individuals are unaware of how focused they are on a particular story. Stories that facilitate high levels of engagement by holding the audience’s attention are probably just more enjoyable than are stories that fail to hold the audience’s attention.

The data also suggest that emotional engagement was significantly associated with both perceived relevance and program enjoyment. These findings suggest two important points. First, the capacity for an EE story to enhance the degree to which audiences perceive that the health topic in a story is somehow personally relevant is related to the experience of being emotionally engaged with that story and its characters. When audiences are sufficiently involved by EE stories and characters, they are more responsive to the health information presented in those stories. Second, emotional engagement with stories and characters is central to what drives the experience of entertainment, and subsequently, enjoyment.

Finally, the data provided information about the fourth dimension of narrative engagement, narrative understanding. Here, we see that narrative understanding is the facet of narrative engagement driving the negative association between narrative engagement and reactance. The degree to which participants perceived that it was easy to comprehend the EE story influenced state reactance. This suggests that the experience of having difficulty making sense of an EE narrative enhances emotional arousal in ways that might inhibit the persuasive goals of EE messages. Such a finding has important implications for EE researchers and designers. In order for EE stories to effectively inhibit defensive processing often invoked by overtly persuasive messages, it is necessary to make those stories easy to understand. The model
also suggests that narrative understanding has an indirect influence on attitude change. As before, the results show that state reactance is positively associated with attitude change. The data also suggest that narrative understanding is positively related to program enjoyment. Put together, these findings provide useful insights about how the various facets of narrative engagement influence different kinds of cognitive and affective responses to EE stories.

A Model of Character Involvement

Central to understanding how audiences become involved in EE programs is an examination of how audiences perceive the characters in those programs. One of the chief goals of this study was to propose and test a model of character involvement in order to assess how various facets of involvement with EE story characters influence one another. The data suggest that, as hypothesized, there are five empirically distinct but interrelated components of character involvement: parasocial interaction, perceived similarity, experiential identification, character liking, and wishful identification. Two of those components, perceived similarity and parasocial interaction, are best thought of as antecedents to all of the other character involvement processes. Both perceived similarity and parasocial interaction are antecedents because they comprise the perceptions and connections that audiences bring to the viewing experience. The second component of the character involvement model is experiential identification, and it is the product of the experience of feeling immersed in a character depiction. The third component of the character involvement process relates to the judgments that audiences make about the likability of a character. These judgments are determined, in part, by the perceptions and connections one has with a character as well as the experience that one has with a character depiction. Liking itself can also be thought of as an outcome (hence, in the model, liking is situated between the judgments and outcomes dimensions) given that the goal of many story writers (particularly EE
story writers) is to produce characters that are likable in order to generate fanship and enjoyment. Finally, the fourth component of the character involvement model relates to the outcomes of one’s encounter with a character.

**Findings related to antecedents component.** These findings suggest that the degree to which a person feels a personal connection (i.e., relationship) to a character and the extent to which that character is deemed similar to the person both influence the experiences of feeling involved in a character depiction, the subsequent judgments one makes about a character, and, ultimately, the outcome of wanting to emulate that character. Although both parasocial interaction and perceived similarity operate as antecedents to the other components of character involvement, the model was designed (and validated) to show that perceived similarity predicts parasocial interaction. Research suggests that perceived similarity plays a role in determining the extent to which people feel attached to media characters (Turner, 1993; Giles, 2002).

Contrary to expectation, perceived similarity was *negatively* associated with parasocial interaction, experiential identification, and likability. The reason for this unexpected finding is unclear. It is possible that the negative relationship between perceived similarity and the other components in the character involvement model is a function of the kinds of characters that participants self-selected. Instead of choosing characters that were in-group members, perhaps the participants were more likely to select polarizing or extraordinary characters. Feeling dissimilar to such characters may have made it difficult for the participants to feel personal connections with those characters. Feeling dissimilar to a character may have also made it difficult to enter into the phenomenological experience of empathic perspective-taking. It is also reasonable that feeling dissimilar to a character could have negatively influenced the extent to which the participants liked a particular character.
Interestingly, perceived similarity was positively associated with wishful identification. Perceiving oneself as similar to a character positively influenced wanting to be like that character. These findings are consistent with the theoretical expectation that providing role models that are similar to the target audience should enhance the likelihood that the audience will want to imitate those models (Bandura, 2002) and provides empirical support for the notion that message designers should integrate characters who are similar to the target audience into EE programs. If, as these data suggest, perceptions of similarity negatively influence the other components of character involvement, message designers must consider whether positively influencing the desire to be like a character is more important than influencing the experience of identification or the likability of a character. It is unclear whether creating an involving and likable character with whom the audience can feel attached is more important than creating a highly similar character that inspires the desire for imitation. Although a concern for imitating healthy behaviors is at the forefront of any persuasive health campaign, creating characters with whom the target audience wants to interact is also important (particularly in the context of EE television programs that feature recurring characters and ongoing storylines). Although these data support the notion that perceived similarity does influence all of the components in the character involvement model, future research should explore the conditions that influence the direction of these relationships.

Results related to experiential identification component. The second component of the character involvement model is experiential identification. This component of the model describes the experience of feeling immersed in a character depiction. Experiential identification plays a key role in predicting the other components of character involvement. Although the data supported the hypothesis that experiential identification predicted the degree to which
participants’ liked a character, experiential identification was not significantly associated with wishful identification. These findings support the notion that having an engaging experience with an EE character depiction is not sufficient for inspiring the desire to emulate the character. However, experiential identification does appear to play an important role in determining the degree to which participants find EE program characters likable.

**Results related to judgments component.** Likability is the fourth component in the character involvement model and is a manifestation of the judgments that audiences make about EE characters. The extent to which audiences deem a particular character likable can be conceived of as both a judgment and an outcome. To conceive as liking itself as an outcome is particularly important in the context of television dramas and programmatic EE messages. To cultivate a character depiction that the target audience *likes* is integral to encouraging audiences to attend to future messages that feature that character. The extent to which the audience likes a character, then, is important because many of the EE initiatives in the U.S. and around the world feature ongoing programs with recurring characters.

**Results related to outcomes component.** The final component of the character involvement model is wishful identification, conceived of in this study (and in much of the literature that examines the influences of involvement with media characters) as a key outcome. The desire to emulate a character is especially important because the theoretical basis for the EE strategy is using story characters to model important health behaviors in order to inspire imitation. In this study, wishful identification was negatively associated with parasocial interaction and liking. These findings suggest that the desire to emulate a program character is not necessarily a function of the relational connection one has with that character or the likeability of that character. One major limitation in this study is the inability to identify the
target of the participants’ character involvement assessments. Not knowing whether the participants self-selected the characters who modeled helpful health behaviors makes it difficult to know whether the negative relationships between wishful identification and the other character involvement constructs is a function of the types of characters that the participants responded to. Nonetheless, the results here demonstrate that wishful identification is significantly influenced by the experiences that audiences have EE program characters as well as the judgments they make about those characters.

**The Influence of Character Involvement on Cognitive Responses to EE Programs**

In addition to looking at the connections among the various components of character involvement, this study also explored the influence of character involvement on the cognitive responses important to the process of health persuasion. Parasocial interaction and experiential identification were the only components of the character involvement model that predicted cognitive outcomes. Parasocial interaction was positively associated with counterarguing. These findings suggest that one’s relational connection with an EE program character enhances the extent to which one produces counterarguments. Similarly, experiential identification was also significantly related to counterarguing. As discussed in earlier sections of this manuscript, these results may provide support for the idea that when counterarguments are assessed in the context of narrative persuasion, more counterarguing is actually evidence of heightened involvement with a character (rather than critical scrutiny). In addition to the regression analyses, a path model was used to verify the relationships between both parasocial interaction and counterarguing and experiential identification and counterarguing, taking into account the influence of all of the other components of the character involvement process. The results from the path model analyses indicated that the relationship between experiential identification and
counterarguing was not significant, but parasocial interaction remained a significant, direct influence on counterarguing.

**The Influence of Character Involvement on Affective Responses to EE Programs**

The next set of analyses explored the relationships among the components of the character involvement model and affective responses to EE programs. The results showed that experiential identification was negatively associated with reactance. This is consistent with the tenets of Moyer-Guse’s (2008) EORM which suggests that the experience of being involved with EE program characters reduces persuasive resistance. These data also indicated that parasocial interaction was positively associated with program enjoyment. When audience members have a relational connection with an EE program character, it enhances the likelihood that they will enjoy that program. This provides support for the importance of creating EE programs that feature characters with whom audiences are familiar in order to enhance attraction to and enjoyment of those programs. Like parasocial interaction, experiential identification was also positively related to program enjoyment. As with the general experience of being immersed in a story, this finding suggests that the experience of being immersed in a character depiction is, by itself, enough to enhance the audience’s enjoyment of an EE program. The results indicated that wishful identification was positively related to program enjoyment. The experience of wanting to be like the characters in EE programs is central to what makes those programs enjoyable. However, more research is needed to explore whether wishful identification with the “healthy” characters has the same influence on enjoyment as wanting to emulate unhealthy characters.

Interestingly, perceived similarity was negatively associated with program enjoyment. This finding suggests that perceiving oneself to be similar to a program character has a negative influence on one’s enjoyment of an EE program. It is possible that the experience of seeing
other in-group members enhances critical scrutiny which, in turn, decreases program enjoyment. Previous research suggests that audiences select television programs, in part, on the basis of how well those programs depict in-group members (Abrams, 2008). Programs that depict in-group members in stereotypic ways are less positively regarded. It is possible that the quality of the depiction of the participant’s in-group members inhibited their program enjoyment.

In addition to the regression analyses, a path model was used to verify the relationships among the character involvement processes and the affective message outcomes, taking into account the influence of all of the other components of the character involvement process. All of the relationships remained significant. This suggests that the character involvement processes have both direct and indirect influences on the affective message responses of interest in this study.

**The Influence of Character Involvement on Health Outcomes**

The next set of analyses examined the relationship among the various components of character involvement and the health outcomes of interest in this study. None of the character involvement processes predicted any of the health outcomes in this study. Because the measurement of health beliefs, attitudes, and behavioral intentions in this particular study was problematic, these findings should not be taken as an indication that the processes related to character involvement do not directly influence health outcomes. On the contrary, EE researchers have suggested that involvement with EE characters is central to what makes EE messages effective. Future research should continue to explore the relationships among the character involvement processes and various health outcomes.
Limitations and Strengths

As with any study, the present investigation is not without its limitations. In the following section, I acknowledge both the key limitations and strengths of this study. The cross-sectional nature of the data used in this study limits our ability to make inferences about the influence of message exposure on the message outcomes of interest. In order to compensate for the limitations of cross-sectional data, this study included a pre- and post-test assessment of participants’ health beliefs, attitudes, and behavioral intentions. Therefore, it was possible to observe immediate changes in these health outcomes after exposure to the EE programs. Future research should explore the influence of the various components of audience involvement with EE programs on health outcomes over time. Conducting longitudinal studies will only enhance our understanding of how these processes influence one another and the various health outcomes of interest.

In spite of using a pre- and post-test design, this study did not include a control group. The use of a one-group pretest-posttest design limits the extent to which the effects of the treatment (i.e., the EE television programs) employed in this study are attributable to the treatment itself (Cook & Campbell, 1979). Nonetheless, this experimental research design is one commonly used in the social sciences and only limits our confidence in the findings regarding the posttest effects of message exposure on health outcomes, not on the findings regarding the underlying processes related to audience involvement. A major focus of this study was not the effects of message exposure but rather the underlying processes that occur during exposure to EE messages. It was determined that the use of a control condition, although likely to yield interesting results concerning the generalizability of message exposure on the observed health outcomes, would have failed to provide useful findings about the processes underlying audience
involvement with EE messages. Without proper exposure to EE messages, the majority of the survey questions would likely have seemed irrelevant to the research participants (and may have, in some cases, required participants to engage in retrospective analysis of their involvement of with media characters and programs viewed outside of the experimental setting). Still, it is important to acknowledge the importance of control conditions in experimental research settings in order to distinguish the effects of the treatment from other causes (e.g., history, maturation, testing, etc.) (Cook & Campbell, 1979) and that the findings regarding the influence of audience involvement with EE programs on the health outcomes observed in this study lack generalizability. Future studies should seek to employ more rigorous experimental research designs that employ control conditions.

Another limitation of the present study is the use of a relatively homogenous audience sample. The ability to make generalizations about these findings to the broader population is limited because a college-aged sample was used. It is important to acknowledge, however, that college-aged adults are among the target audience for the programs used in this particular study (i.e., primetime television dramas). An important strength of this study was the use of EE programs that featured health topics that are extremely relevant to young adults. Moreover, there is little reason to believe that the relationships among the various processes related to audience involvement with EE texts would function differently in other kinds of populations.

It is difficult to determine how the use of EE programs about sexual and reproductive health topics may have influenced the participants’ involvement with the EE programs. It is possible that male participants might have been less engaged with the content and the characters in those programs because issues like breast and cervical cancer are simply not as threatening as such topics might be for female participants. Moreover, it’s possible that this particular sample
of research participants might be more familiar with these health topics than other audiences, given the educational nature of the setting used for this study. In the absence of comparison conditions that featured EE programs with other (nonsexual) health topics, it is difficult to determine precisely how the processes observed here might operate in similar or dissimilar ways. Future research should seek to explore these processes, and their relationships to the health outcomes observed in this study, using EE programs that feature a variety of health topics.

The use of a laboratory setting (i.e., classrooms) compromises the external validity of a study, like this one, designed to assess the nature and influence of audience involvement with EE programs. It is difficult to ascertain how the experimental setting might have influenced the participants’ responses to the survey items. We might expect that the experience of involvement itself was influenced by the experiment setting because television viewing outside of a laboratory setting tends to have more interruptions. As one purpose of an experiment setting is to minimize interruptions, the relationships among the variables observed in this study are perhaps more pronounced than they would be in a more “life-like” setting.

In spite of attempting to bring conceptual clarity to the various dimensions of audience involvement with EE programs (and validating many of the relationships among those dimensions), this study did not provide measurement validation for the constructs of interest. The conceptual overlap among some of the components of the character involvement model and transportation and narrative engagement (e.g., emotional engagement and experiential identification), points to a clear need to provide an assessment of the extent to which the constructs examined here are indeed isomorphically distinct. The results from this study suggest that when treated as distinct variables, a number of the audience involvement concepts do uniquely influence the cognitive and affective responses to EE programs. Future research should
seek to conduct confirmatory factor analyses to provide empirical validation of these distinctions.

Finally, it is important here to acknowledge that although this study used four professionally designed EE television programs, it would be inappropriate to rely on these four programs to make generalizations about how audiences process all messages that belong to the EE genre. The findings in this study are limited to four television programs about very specific health concerns (sexually transmitted infections, breast and cervical cancer). Although we have more information about audience involvement with EE programs that appear in primetime medical dramas, more research is needed to explore how the involvement with other types of program functions in ways that are similar or different to what was observed in this study.
CHAPTER 6
CONCLUSIONS

Entertainment-education is one promising health communication strategy that allows researchers and practitioners to deliver persuasive health information to target audiences in a way that inhibits persuasive resistance. Because audience involvement is essential to the capacity of EE messages to inspire health change, the purpose of this study was to systematically explicate the nature and influence of audience involvement with EE television programs about sexual and reproductive health topics. To that end, the findings from this study have three important contributions. First, this is the first study to provide a systematic explication and analysis of the various dimensions of audience involvement with EE programs and the relationships among those dimensions. Second, this study provides empirical evidence about the influence of audience involvement on several important cognitive and affective responses that influence the process of persuasion. Finally, this study provides empirical evidence that exposure to EE television programs influenced three key health outcomes: beliefs, attitudes, and behavioral intentions. In the following section, I highlight the significance of these three contributions and their implications for future research.

Audience Involvement with EE Program: Multifaceted and Influential

Regardless of the type of persuasive message, researchers recognize that the degree to which audiences are involved with health messages is the central driving force behind how persuasive those messages will be. Therefore, it is essential for EE researchers to have a clear theoretical and empirical explication of the various ways in which audiences become involved in EE messages. Evidence from the present study demonstrates that in order to adequately account
for all facets of audience involvement with EE messages, researchers must take into account involvement with both the stories and story characters in EE messages.

The findings from this study suggest that audience involvement with the stories in EE messages functions in two ways. First, audiences can become experientially involved with the narratives that appear in EE messages. The experience of being involved with an EE story is characterized by the feeling of being cognitively and affectively consumed by a story and losing a sense of self-awareness. As in previous studies, Green and Brock’s (2000) transportation imagery scale was used to assess the phenomenological experience of losing one’s self-awareness in an EE television program (see Moyer-Guse & Nabi, 2010). In addition to that measure, Busselle and Bilandzic’s (2009) narrative engagement scale was also used.

Second, involvement with the stories in EE messages is also characterized by the process of comprehension – being able to put parts of a story together in a cohesive manner and not being distracted by the process of trying to understand and make sense of that story. Two subscales of Busselle and Bilandzic’s (2009) narrative engagement scale (the narrative understanding and attentional focus subscale) were used to assess participants’ comprehension of the EE programs and the extent to which they were aware of having to make sense of those stories (i.e., distracted). This is the first study to use the narrative engagement scale to assess audience involvement in an EE message context.

As expected, both transportation and narrative engagement predicted various cognitive and affective responses to the EE programs used in this study. Although it is difficult to determine whether transportation was more predictive than the narrative engagement scale because the two items predicted different kinds of cognitive and affective responses, the narrative engagement scale was more useful for making sense of how the different processes that
underlie audience involvement with EE stories relate to those responses and outcomes of interest. Unlike transportation, the narrative engagement scale gives researchers a tool for exploring the influence of the various dimensions of being involved with a story (i.e., narrative presence, narrative understanding, attentional focus, and emotional engagement) in addition to providing an overall assessment of audience involvement. Although the transportation scale has been used in studies in which researchers sought to explore the influence of audience involvement with EE messages on various outcomes, measuring transportation alone is insufficient for assessing all of the ways in which audiences become involved with EE messages. Moreover, in the absence of a study that provides a confirmatory analysis of the factor structure of the transportation scale, it is difficult to determine whether the transportation scale is useful for anything beyond an assessment of the phenomenological experience of being “lost” in a story.

The findings from this study indicate that just as audiences can become involved with the stories in EE messages, involvement with the story characters that appear in EE messages is also multi-faceted and influential. In this study, audience involvement with EE story characters was assessed using five different but interrelated components: perceived similarity, parasocial interaction, experiential identification, liking, and wishful identification. A key contribution of the present study is providing empirical validation for how these components of character involvement work together.

One key finding related to the character involvement model is the importance of perceived similarity. These findings suggest that perceived similarity is central to audience involvement with EE characters because it a) predicted all of the subsequent character involvement processes and b) was negatively associated with the viewers’ experience of identifying with program characters and the degree to which they liked those characters but
positively associated with the desire to emulate program characters. Because audience members were allowed to self-select their own characters to respond to the questions in this study, it is unclear how perceptions of similarity with the “right” or “wrong” characters (i.e., character created for the purposes of healthy and unhealthy behavioral modeling) might influence the health outcomes of interest to EE researchers. All types of characters were grouped together in the analysis of the relationships among these character involvement processes. The findings from this study suggest that perceived similarity plays a pivotal role in how people become involved with EE characters and, therefore, researchers should continue to investigate the influence of creating EE story characters that have commonalities with the target audience. Although perceived similarity might influence the desire to emulate a particular character, EE message designers must take into account that it can also negatively influence the experience of being involved with and liking program characters. In addition to exploring whether the model hypothesized and tested here can be replicated when audiences and researchers alike are allowed to select characters on the basis of various criteria, future research should also explore the qualities of character depictions that influence judgments about perceived similarity.

Beyond validating our theoretical understanding of the facets of involvement with EE characters, this model can also be used in future studies to assess the effectiveness of EE messages. Researchers can use the model to determine how a particular character depiction facilitates these various aspects of character involvement. If perceived similarity is fundamental to all of the subsequent processes related to character involvement as this study suggests, then it is worthwhile to know the extent to which a particular character fosters a sense of perceived similarity. Likewise, researchers might want to use the character involvement model to ascertain which types of characters are most likely to foster the processes that influence wishful
identification (i.e., perceived similarity, parasocial interaction, and liking). Having a model to conceptualize which aspects of character involvement are successful to the ultimate goals of a particular EE message will hopefully give researchers a clearer understanding about how to create and tailor those messages in ways that optimize their persuasive influence.

**Audience Involvement and Cognitive and Affective Responses to EE Messages**

Like a small handful of other studies that have examined the processes that make the EE strategy effective, this study also explored how different facets of audience involvement influence cognitive and affective responses to EE messages. Although previous work has explored how audience involvement processes influence outcomes like counterarguing and reactance, this is the first study to systematically explore and compare how various measures of audience involvement with EE programs influenced a variety of cognitive and affective responses that are central to the process of persuasion.

This study used a measure of cognitive elaboration to measure the influence of audience involvement with the EE programs used in this study on participants’ cognitions. As is consistent with traditional models of persuasion (e.g., the ELM and the HSM), an index of the total number of each participant’s thoughts about the EE programs was created to assess the degree to which exposure to EE stories influenced participants’ story-related thoughts. Unfortunately, this index was not significantly associated with any of the main variables of interest in this study. Although cognitive elaboration did not appear to influence any of the outcomes of interest, there are two strong theoretical reasons to continue using thought-listing data to index participants’ involvement with EE programs.

First, it is theoretically consistent with the persuasion literature to conceive of cognitive elaboration as an index of the accessibility of the cognitions that a person has about a particular
topic (Petty & Cacioppo, 1986; Cacioppo, Von Hipple, & Ernst, 1997). From a message processing perspective, we expect that exposure to a message will induce the accessibility of one’s beliefs and attitudes about the topics in that message (Roskos-Ewoldsen, Arpan-Ralstên, & St. Pierre, 2002). It is practical, then, to use a measure of cognitive elaboration to determine whether an EE message increased the number of thoughts about a particular health or social topic (as we would expect it to do).

Second, in order to understand how narrative persuasion functions, it is important for EE researchers to have data that allow for an unbiased assessment of how exposure to EE messages influences participants’ thoughts. Using thought-listing data to tabulate an index of one’s elaboration about an EE program is useful insofar as it provides us with information about what kinds of topics were most accessible to the participants immediately after viewing a program (i.e., in the short term). Using thought-listing data to examine the nature of participants’ thoughts allows us to examine those thoughts without imposing our own expectations about their content. Moreover, having an index to ascertain what kinds of thoughts were most accessible to the participants in the short-term might be useful to exploring narrative persuasion over time. Beyond providing a measure of the number of story-related thoughts in participants’ short-term memory, the thought-listing task also gives researchers a tool for examining how different kinds of story-related thoughts are related to persuasive outcomes. Appel and Richter (2007) demonstrated that sleeper effects may be especially important in the context of narrative persuasion as EE messages because stories have a unique capacity to influence cognition over time. It is useful, then, to have an index of the frequency of various kinds of thoughts about an EE program immediately after exposure in order to explore how different kinds of thoughts might influence other outcomes of interest in the long term.
The influence of audience involvement on the production of counterarguments was also assessed in the present study. Interestingly, counterarguing was not significantly related to most of the main variables of interest. Counterarguing was positively associated with parasocial interaction and these findings suggest that researchers might need to reconsider the use of counterarguing measures to assess the persuasive impact of EE messages. Traditionally, counterarguing is conceived of as a deterrent to persuasion (i.e., the more counterarguments one produces in response to a persuasive message, the less likely one is to be persuaded by that message). The production of more counterarguments, then, is regarded as inconsistent with persuasion. A person cannot simultaneously produce a number of critical thoughts and arguments about a message claim and remain involved in the message. However, the findings from this study are now part of a growing body of evidence that suggests that counterarguments simply do not function in the same way in the context of narrative persuasion.

First, participants were just not very likely to produce counterarguments. This is consistent with Slater and Rouner’s (2002) E-ELM framework which suggests that audience involvement with narratives precludes the ability and willingness to produce critical thoughts. Second, it is possible that the production of counterarguments is a reflection of enhanced involvement rather than critical disbelief. Because counterarguing was positively related to parasocial interaction, these findings suggest that feeling a strong relational attachment to a character provoked individuals to produce more critical thoughts about the EE program. These findings are evidence of the need for more theoretical and empirical attention to the role of counterarguing in the context of narrative persuasion. Future studies should continue to explore whether higher levels of various facets of audience involvement are, in fact, related to an increase in the production of counterarguments. Research should also explore whether how we
conceptualize and operationalize counterarguments should be revised in the context of narrative persuasion.

Another cognitive response that was explored in this study was perceived relevance. In general, the findings suggest that audience involvement has a significant influence on the perception that the sexual and reproductive health topics in EE programs were personally relevant to the audience. Health behavior theories, like the health belief model and the theory of reasoned action and planned behavior, have long recognized that perceiving that a health topic is personally relevant is an important determinant of health behavior. The findings in this study are important because they attest to the persuasive influence of being involved with both the stories and the story characters in EE programs. Future studies should explore how the perception that a health topic is personally relevant influences health outcomes (in this study, there was no relationship between personal relevance and the health outcomes of interest). In addition, it might be interesting to determine whether personal relevance operates on some kind of threshold wherein the perception that a health topic is very personally relevant inspires ego-defensive reactions and ultimately has a negative influence on health outcomes. Having empirical evidence to determine whether there are optimal levels of personal relevance would be useful for EE researchers who seek to design EE stories and story characters that inspire audience involvement in order to influence the perception that a health topic is indeed relevant.

State reactance is one important affective response that audiences can have to persuasive messages. This study generated empirical evidence, however puzzling, about the influence of audience involvement on state reactance. Although transportation was not associated with reactance, narrative engagement was negatively related to it. Further analysis indicated that the narrative understanding subdimension of narrative engagement was negatively related to state
reactance. These findings are interesting because they attest to the importance of the process of making sense of the stories in EE programs. Theoretically, the utility of the EE strategy is contingent upon the capacity for EE messages to hamper negative responses to persuasive suggestion. It appears that the experience of watching an EE story that featured a coherent, easy-to-follow narrative is indeed important to reducing the participants’ negative emotional responses to those messages. Similarly, the experience of being absorbed by a character depiction in EE program was negatively related to reactance.

Unexpectedly, state reactance was positively associated with story-consistent changes in participants’ health attitudes. It is possible that having a negative affective response to the persuasive suggestions made in the EE programs prompted story-consistent attitude change simply because the negative affect stimulated more elaboration of the persuasive health suggestions in those programs. Having an angry or irritated response to the suggestion to have safe sex, for example, might have drawn attention to the importance of safe sex practices. In spite of being irritating or upsetting, these affective responses might have influenced the health-related attitudes by drawing attention to the importance of those health behaviors. More research is needed to determine whether attitude change is consistently influenced by negative affect and, if so, why. Put together, these findings suggest that various facets of audience involvement do, in fact, influence emotional responses to EE programs. More research is needed to ascertain whether other components of audience involvement influence emotional arousal in ways potentially limit or enhance the persuasive influence of those programs.

Finally, this study provided substantial empirical support for the influence of various facets of audience involvement on program enjoyment, an important affective response to EE programs. These findings are not particularly surprising in light of the overarching purpose of
EE messages to persuade their audiences by providing entertaining stories and story characters. Enjoyment is central to the experience of being entertained. When people find themselves involved in EE programs, they have positive affective responses to those programs (and subsequently provide positive evaluations about those programs).

Character likability was the only audience involvement process that predicted program enjoyment that was not significantly associated with program enjoyment. This finding warrants further investigation. It is reasonable that liking a character by itself is not sufficient for motivating enjoyment. Because the data in this study did not control for the selection of antagonistic or protagonist characters, it is possible that the insignificant relationships between character liking and program enjoyment is a function of the selection of both likeable and unlikable program characters. Although we might expect likability to be positively associated with program enjoyment, the inclusion of both likeable and unlikable characters in the data might have attenuated this relationship. Future studies should seek to investigate more thoroughly the nature of the relationship between likability and enjoyment because character liking is an important part of what draws audiences to EE programs and is therefore central to the EE strategy.

**Evidence for Influencing Health Outcomes**

Finally, this study also provides useful information about how audience involvement both directly and indirectly influences health beliefs, attitudes, and behavioral intentions. The findings here also suggest that different cognitive and affective responses mediate the influence of audience involvement on these health outcomes. Put together, these findings suggest that EE is indeed an effective strategy for health promotion.
Transportation was the only variable directly associated with story-consistent changes in participants’ health beliefs. This finding lends support to the notion that the experience of being involved with EE programs is central to the persuasive influence of those programs. The data also indicated that cognitive and affective responses mediated the influence of audience involvement on health beliefs, attitudes, and behavioral intentions. In two of the models, program enjoyment mediated the influence of audience involvement on behavioral intentions. These findings suggest an interesting connection between affect and behavior. Perhaps having an enjoyable viewing experience enhances the degree to which people feel inclined to behave in ways that are healthy. Future research should continue to explore the connection between positive affective and behavioral intentions (as well as the actual behaviors).

The findings also indicated that state reactance mediated the influence of narrative engagement on story-consistent changes in health attitudes. The finding that narrative understanding negatively influenced state reactance is relatively straightforward. Being able to understand and follow the plot in EE programs with relative ease inhibits negative affective responses to the persuasive suggestions made in those programs. However, the finding that psychological reactance was positively associated with changes in participants’ health attitudes is somewhat perplexing. More research is needed to examine the influence of affective responses to EE programs on health outcomes, particularly outcomes that have an emotional or affective dimension.

Although the failure to find an empirical relationship between all of the other cognitive and affective message responses and health outcomes is likely an indication of weak measurement, future studies should continue to explore the experience of involvement on various health outcomes. Unfortunately, in this study, the link between message exposure and message
effects is still unclear. A failure to find significant relationships between the health outcomes of interest and any of the other main variables of interest is, in all likelihood, evidence of measurement error. Nonetheless, these findings are among a growing body of evidence that suggests that the EE strategy can influence health outcomes.

Summary

In summary, this study lays important groundwork for researchers and practitioners who seek to understand the nature of audience involvement with EE programs. The findings here suggest that audience involvement with EE television programs is multifaceted and influential. Future research should take into account the many ways in which people become involved with both the stories and the story characters in EE programs. This study also suggests that the different facets of audience involvement operate in distinctly different ways by influencing both cognitive and affective responses that influence the process of persuasion. Ultimately, an interest in the nature of audience involvement with EE messages rests upon the concern for how best to influence mass audiences in order to improve public health. This study is just one stepping-stone in the process of seeking to understand the nature of narrative persuasion in order to optimize the EE strategy, and ultimately, improve the health and well-being of all people.
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APPENDIX A SURVEY QUESTIONNAIRE

Please determine the extent to which you agree or disagree with the following statements. Circle the appropriate number on a scale from 1 to 7 where 7 represents strongly disagree and 1 represents strongly agree. Circle only one number for each statement.

1. Becoming an organ donor helps to save lives.
   
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

2. When a person is sexually active, it is important to obtain regular screenings for sexually transmitted infections (STIs).
   
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

3. It is always important for patients to be honest with their doctors.
   
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

4. I plan to talk to my doctor about getting screened for STIs.
   
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

5. If I became an organ donor, it would help to save lives.
   
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

6. Safe sex practices, like using condoms, prevent STIs like gonorrhea, Chlamydia, and HPV.
   
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

7. If I was screened for cancer, it would prevent me from getting cancer.
   
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

8. I intend to talk with my boyfriend/girlfriend about getting screened for STIs.
   
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

9. Sometimes, it is necessary for patients to lie to their doctors about their health history.
   
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

10. Cancer screening is important for people who have a history of cancer in their family.
    
    Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree
11. I intend to learn more about cancer screening in the near future.

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

12. Doctors need accurate information to best treat their patients.

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

13. I intend to get the regular screenings for STIs.

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree


Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

15. I plan to find out what kinds of cancer screenings are important for me at point in my life.

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

Now, we’d like you to rate the following actions. Place an “X” on the line that best describes how you feel about each item. For example, if you believe that the suggested action is really good, you will put an “X” on the line closest to the word “Good.” Place only one “X” per line.

Organ donation is…

Good ___ ___ ___ ___ ___ ___ ___ Bad

Beneficial ___ ___ ___ ___ ___ ___ Not beneficial

Wise ___ ___ ___ ___ ___ ___ ___ Unwise

Getting tested for sexually transmitted infections is…

Good ___ ___ ___ ___ ___ ___ ___ Bad

Beneficial ___ ___ ___ ___ ___ ___ Not beneficial

Wise ___ ___ ___ ___ ___ ___ ___ Unwise

I think cancer screening is…

Good ___ ___ ___ ___ ___ ___ ___ Bad
Beneficial ___ ___ ___ ___ ___ ___ ___ Not beneficial
Wise ___ ___ ___ ___ ___ ___ ___ Unwise

Answering my doctor’s questions as honestly as I can is…
Good ___ ___ ___ ___ ___ ___ ___ Bad
Beneficial ___ ___ ___ ___ ___ ___ ___ Not beneficial
Wise ___ ___ ___ ___ ___ ___ ___ Unwise

Now think about the relationship you have currently with the person who tried to keep some information from you. Circle the number that most closely describes your feelings toward this relationship recently.

Miserable: 1 2 3 4 5 6 7 : Enjoyable
Hopeful: 1 2 3 4 5 6 7 : Discouraging
Empty: 1 2 3 4 5 6 7 : Full
Interesting: 1 2 3 4 5 6 7 : Boring
Rewarding: 1 2 3 4 5 6 7 : Disappointing

Doesn’t give: 1 2 3 4 5 6 7 : Brings out the best in me
me much chance

Lonely: 1 2 3 4 5 6 7 : Friendly
Worthwhile: 1 2 3 4 5 6 7 : Useless

All things considered, how satisfied or dissatisfied have you been with your relationship with this person recently?

1 2 3 4 5 6 7
Completely dissatisfied Neutral Completely satisfied
We are interested in the thoughts you had watching this program. On the lines below, please write down everything that passed through your head. Use one line per thought. You have 90 seconds.

______________________________________________________

_____ a _____ b  (1)

______________________________________________________

_____ a _____ b  (2)

______________________________________________________

_____ a _____ b  (3)

______________________________________________________

_____ a _____ b  (4)

______________________________________________________

_____ a _____ b  (5)

______________________________________________________

_____ a _____ b  (6)

______________________________________________________

_____ a _____ b  (7)

______________________________________________________

_____ a _____ b  (8)

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Now we’re going to ask you to write your thoughts about a character in the program you just watched. We’d like you to write down everything you remember thinking about one character that comes easily to mind. If you don’t remember the name of that character, you can just write a brief description of him or her at the top of the paper. We’re going to give you 3 minutes to write down everything you remember thinking about that character.

Name/description of character here: __________________________________________________________

Thoughts about character below this line: ________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________

STOP!
DO NOT PROCEED UNTIL WE GIVE YOU DIRECTIONS ABOUT HOW TO PROCEED.

____ a ______ b   (9)
Now, we’d like to know more about what you thought about the same character you just wrote about. Please read the following statements and indicate the extent to which you agree with the statement. Circle the appropriate number on a scale from 1 to 7 where 7 represents strongly disagree and 1 represents strongly agree. Circle only one number for each statement.

1. The character I’m thinking of behaves the way most people behave.
   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

2. I liked that character.
   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

3. I felt sorry for the character when he/she makes mistakes.
   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree
4. I see the character as a natural, down-to-earth person.
   
   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

5. I would never want to act the way the character does.
   
   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

6. Overall, I think the character is a good person.
   
   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

7. The character is very similar to me.
   
   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

8. If the character appeared on another TV program, I would watch that program.
   
   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

9. If I saw a story about the character in a newspaper or magazine, I would read it.
   
   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

10. During the viewing, I felt I could really get inside the character’s head.
    
    Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

11. I wish I were more like the character.
    
    Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

12. I would like to meet the character in person.
    
    Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

13. While viewing the program, I could feel the emotions the character portrayed.
    
    Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

14. The character behaves like me.
    
    Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree
15. The character is an attractive-looking person.

   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

16. The character seems to understand the kinds of things I want to know.

   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

17. The character is like other people I know.

   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

18. The character is an immoral person.

   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

19. I’d like to do the kinds of things that the character does.

   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

20. The character and I have a similar background.

   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

21. When the character succeeded, I felt joy.

   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

22. I like people like the character.

   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

23. When the character failed, I was sad.

   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

24. The character is the kind of person I want to be like.

   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree

25. The character makes me feel comfortable, as if I am with a friend.

   Strongly Agree  1  2  3  4  5  6  7  Strongly Disagree
26. The character is physically unattractive.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

27. The way that character is portrayed is unrealistic.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

28. My personality is different from the character’s personality.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

29. The character is an ethical person.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

30. I find the character to be attractive.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

Please determine the extent to which you agree or disagree with the following statements.
Circle the appropriate number on a scale from 1 to 7 where 7 represents strongly disagree and
1 represents strongly agree. Circle only one number for each statement.

1. Becoming an organ donor helps to save lives.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

2. When a person is sexually active, it is important to obtain regular screenings for sexually
transmitted infections (STIs).
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

3. It is always important for patients to be honest with their doctors.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

4. I plan to talk to my doctor about getting screened for STIs.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

5. If I became an organ donor, it would help to save lives.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree
6. Safe sex practices, like using condoms, prevent STIs like gonorrhea, Chlamydia, and HPV.

   Strongly Agree  1  2  3  4  5  6  7   Strongly Disagree

7. If I was screened for cancer, it would prevent me from getting cancer.

   Strongly Agree  1  2  3  4  5  6  7   Strongly Disagree

8. I intend to talk with my boyfriend/girlfriend about getting screened for STIs.

   Strongly Agree  1  2  3  4  5  6  7   Strongly Disagree

9. Sometimes, it is necessary for patients to lie to their doctors about their health history.

   Strongly Agree  1  2  3  4  5  6  7   Strongly Disagree

10. Cancer screening is important for people who have a history of cancer in their family.

    Strongly Agree  1  2  3  4  5  6  7   Strongly Disagree

11. I intend to learn more about cancer screening in the near future.

    Strongly Agree  1  2  3  4  5  6  7   Strongly Disagree

12. Doctors need accurate information to best treat their patients.

    Strongly Agree  1  2  3  4  5  6  7   Strongly Disagree

13. I intend to get the regular screenings for STIs.

    Strongly Agree  1  2  3  4  5  6  7   Strongly Disagree


    Strongly Agree  1  2  3  4  5  6  7   Strongly Disagree

15. I plan to find out what kinds of cancer screenings are important for me at point in my life.

    Strongly Agree  1  2  3  4  5  6  7   Strongly Disagree

Now, we’d like you to rate the following actions. Place an “X” on the line that best describes how you feel about each item. For example, if you believe that the suggested action is really good, you will put an “X” on the line closest to the word “Good.” Place only one “X” per line.
Organ donation is…

Good ___ ___ ___ ___ ___ ___ ___ Bad
Beneficial ___ ___ ___ ___ ___ ___ ___ Not beneficial
Wise ___ ___ ___ ___ ___ ___ ___ Unwise

Getting tested for sexually transmitted infections is…

Good ___ ___ ___ ___ ___ ___ ___ Bad
Beneficial ___ ___ ___ ___ ___ ___ ___ Not beneficial
Wise ___ ___ ___ ___ ___ ___ ___ Unwise

I think cancer screening is…

Good ___ ___ ___ ___ ___ ___ ___ Bad
Beneficial ___ ___ ___ ___ ___ ___ ___ Not beneficial
Wise ___ ___ ___ ___ ___ ___ ___ Unwise

Answering my doctor’s questions as honestly as I can is…

Good ___ ___ ___ ___ ___ ___ ___ Bad
Beneficial ___ ___ ___ ___ ___ ___ ___ Not beneficial
Wise ___ ___ ___ ___ ___ ___ ___ Unwise

Now think about the relationship you have currently with the person who tried to keep some information from you. Circle the number that most closely describes your feelings toward this relationship recently.

Miserable: 1 2 3 4 5 6 7 : Enjoyable

Hopeful: 1 2 3 4 5 6 7 : Discouraging

Empty: 1 2 3 4 5 6 7 : Full

Interesting: 1 2 3 4 5 6 7 : Boring

Rewarding: 1 2 3 4 5 6 7 : Disappointing
Doesn’t give: 1 2 3 4 5 6 7 : Brings out the best in me
Lonely: 1 2 3 4 5 6 7 : Friendly
Worthwhile: 1 2 3 4 5 6 7 : Useless

All things considered, how satisfied or dissatisfied have you been with your relationship with this person recently?

1 2 3 4 5 6 7
Completely dissatisfied Neutral Completely satisfied

Please determine the extent to which you agree or disagree with the following statements. Circle the appropriate number on a scale from 1 to 7 where 7 represents strongly disagree and 1 represents strongly agree. Circle only one number for each statement.

1. At points, I had a hard time making sense of what was going on in the program.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

2. My understanding of the characters is unclear.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

3. I had a hard time recognizing the thread of the story.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

4. I found my mind wandering while the program was on.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

5. While the program was on I found myself thinking about other things.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

6. I had a hard time keeping my mind on the program.
   Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree
7. During the program, my body was in the room, but my mind was inside the world created by the story.

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

8. The program created a new world, and then that world suddenly disappeared when the program ended.

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

9. At times during the program, the story world was closer to me than the real world.

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

10. The story affected me emotionally.

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

11. During the program, when a main character succeeded, I felt happy, and when they suffered in some way, I felt sad.

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

12. I felt sorry for some of the characters in the program.

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

13. While I was watching the program, I could easily picture the events in it taking place.

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

14. While I was watching the program, activity going in the room around me was on my mind.

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

15. I could picture myself in the scene of events in the story.

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

16. I was mentally involved in the story while watching it.

Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

17. After finishing the program, I found it easy to put it out of my mind.
### Please determine the extent to which you agree or disagree with the following statements.

**Circle the appropriate number on a scale from 1 to 7 where 7 represents strongly disagree and 1 represents strongly agree. Circle only one number for each statement.**

<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>I wanted to learn how the program ended.</td>
</tr>
<tr>
<td>18</td>
<td>The program affected me emotionally.</td>
</tr>
<tr>
<td>19</td>
<td>I found myself thinking of ways the program could have turned out differently.</td>
</tr>
<tr>
<td>20</td>
<td>I found my mind wandering while watching the program.</td>
</tr>
<tr>
<td>22</td>
<td>The events in the program are relevant to my everyday life.</td>
</tr>
<tr>
<td>23</td>
<td>The events in the program have changed my life.</td>
</tr>
</tbody>
</table>

1. I am uncomfortable being told how to feel about having safe sex.
   - Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

2. I do not like that I am being told how to feel about safe sex.
   - Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

3. It irritates me that the program told me how to feel about safe sex.
   - Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

4. I dislike that I am being told how to feel about safe sex.
   - Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

5. I am happy with the way the program ended.
   - Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

6. The program affected me emotionally.
   - Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

7. I found myself thinking of ways the program could have turned out differently.
   - Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

8. I found my mind wandering while watching the program.
   - Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

9. The events in the program are relevant to my everyday life.
   - Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree

10. The events in the program have changed my life.
    - Strongly Agree 1 2 3 4 5 6 7 Strongly Disagree
Next, we’d like to know to what you degree you believe the topic in Grey’s Anatomy is relevant to you. Please answer the following questions.

1. How serious is the threat of breast and cervical cancer to you?
   
   Extremely serious  1  2  3  4  5  6  7  Not at all serious

2. How serious is the threat of breast and cervical cancer to your friends and family?

   Extremely serious  1  2  3  4  5  6  7  Not at all serious

3. How personally relevant is the topic of breast and cervical cancer to you?

   Very relevant  1  2  3  4  5  6  7  Not at all relevant

4. How personally relevant is the topic of breast and cervical cancer to your friends and family?

   Very relevant  1  2  3  4  5  6  7  Not at all relevant

Male ____   Female ____ (check one)

What year were you born? ________

Race: White _____  Black _____  Hispanic/Latino _____  Asian _____  Native American _____  Other _____________________ (Please indicate)

Native (first) Language ________________________________

What was your (or your family’s) estimated total annual household income for 2008? Please circle your answer.

$10,000 or less  $26,000 - $50,000  $51,000 - $75,000

$76,000 - $100,000  $101,000-$150,000  Over $150,000

Have you ever seen Grey’s Anatomy before?  Yes  No
Have you ever seen this episode of Grey’s Anatomy before?  Yes  No
Do you regularly watch Grey’s Anatomy?  Yes  No
Do you regularly watch programs like Grey’s Anatomy?  Yes  No
Almost done! For the last group of questions, we’d like you to evaluate the program you just watched.

1. How enjoyable did you find this program?
   Not at all enjoyable 1 2 3 4 5 6 7 Very enjoyable

2. How enjoyable do you find the subject matter?
   Not at all enjoyable 1 2 3 4 5 6 7 Very enjoyable

3. How enjoyable do you find this type of program?
   Not at all enjoyable 1 2 3 4 5 6 7 Very enjoyable

4. How interesting did you find this program?
   Not at all interesting 1 2 3 4 5 6 7 Very interesting

5. How interesting did you find the characters in this program?
   Not at all interesting 1 2 3 4 5 6 7 Very interesting

6. How interesting did you find the subject matter?
   Not at all interesting 1 2 3 4 5 6 7 Very interesting

7. How entertaining did you find this program?
   Not at all entertaining 1 2 3 4 5 6 7 Very entertaining

8. How realistic did you find this program?
   Not at all realistic 1 2 3 4 5 6 7 Very realistic

9. How realistic did you find the characters in this program?
   Not at all realistic 1 2 3 4 5 6 7 Very realistic

10. How realistic did you find the style of this program?
    Not at all realistic 1 2 3 4 5 6 7 Very realistic

11. Would you recommend this program to a friend?
    No, never 1 2 3 4 5 6 7 Yes, absolutely
SURVEY COMPLETE! THANK YOU FOR ALL YOUR TIME AND HELP!!