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THE INFLUENCE OF MEDICAL DRAMAS ON PATIENT EXPECTATIONS OF PHYSICIAN COMMUNICATION

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THE INFLUENCE OF MEDICAL DRAMAS ON PATIENT EXPECTATIONS OF
PHYSICIAN COMMUNICATION

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Abstract

The present investigation applies para-social contact theory to better understand the role of viewing a medical drama on patients' expectations towards physician's empathic communication. Results demonstrate that overall, participants form para-social relationships with television characters. Exposure to the stimulus in the current study did not influence participants' communicative expectations or para-social interaction with characters on the medical drama used. A positive correlation was found between para-social interaction with televised characters and patient expectations. Results are discussed with an emphasis on how Cultivation theory describes the role between exposure to medical dramas and patient expectations, as well as para-social interaction theory.

Introduction

As technology continues to advance, modern western industrial society has become more dependent upon television as a medium for seeking information. Popular fictional television shows such as *Grey's Anatomy*, *E.R.*, and *House, M.D.* communicate messages about health. These health messages, or narratives, seek to “inform viewers about a particular issue, whereas others seek to change attitudes or behaviors” (Guse-Moyer & Nabi, 2010, p. 27). Experiencing physician-patient interaction on TV could provide scripts to viewers about engaging in conversation with physicians, potentially influencing their expectations regarding the patient provider interaction.

Communication researchers suggest that medical dramas that portray communication behaviors lead to positive outcomes between physicians and patients, perhaps because patient expectations are influenced by the behaviors shown on television (Barney, 2007; Davin, 2003; Gerbner & Gross, 1976; Hether, Huang, Beck, Murphey, & Valente, 2008; Jain & Slater, 2013; Lee & Taylor, 2014; Morgan Movius, & Cody, 2009; Quick, 2009; Slater, Green, Strange, & Brock, 2002; Wright, Holcombe, & Salmon, 2004; Ye & Ward, 2010). Though an extensive amount of health communication literature exists, “less is known about the influence of television in shaping patient perceptions of doctors” (Quick, 2009, p. 39). Therefore, it is important to explore the potential impact of medical dramas on patient expectations so that the physician-patient relationship may be better understood in the health care industry. The current study aims to examine how television shows, specifically medical dramas, play a role in patient expectations of medical experiences.

An educational entertainment program can include an educational scene, episode, or storyline embedded in an otherwise purely entertainment program (Guse-Moyer & Nabi, 2010).

Hether et al. (2008) analyzed the influence of entertainment education by examining the effect of two separate storylines about breast cancer. Results from the study indicated that while the individual plotlines had a slight influence on viewers' knowledge, attitudes, and behaviors, multiple exposures to breast cancer storylines had a larger impact on viewers' attitudes and knowledge levels (Hether et al., 2008). Another study looked at the ways in which characters in entertainment educational programs increase discussion about safe sex and other "taboo" topics between sexual partners (Moyer-Guse, Chung, & Jain, 2011). Surprisingly, results from the study indicated that after exposure to conversations about "taboo" topics on television, participants were twice as likely to engage in conversations with their sexual partner in comparison to those who were not shown the program (Moyer-Guse, Chung, & Jain, 2011). This suggests that participants who watch entertainment educational programs may use the narrative as a resource to learn how to have such discussions about topics that may be otherwise uncomfortable.

While numerous researchers have analyzed media sources of educational-entertainment, none have focused on the ways in which current medical dramas portray physician-displayed empathy, and whether or not expectations are crafted from this depiction. However, because some patient expectations may be unrealistic, understanding where patient expectations stem from could help prepare physicians and health care providers on how to better educate their patients. The para-social contact hypothesis (Allport, 1954) provides a path to understanding how medical dramas can play an influential role in viewers' expectations of physician communication. Essentially, the premise of this theory is that observing characters on television has a particularly powerful influence over viewers' beliefs and attitudes as viewers form relationships with these characters. How patients expect his/her physician to *communicate*

empathy is of consideration. If viewers learn about doctors by repeated exposure to medical dramas, it is possible that the para-social contact hypothesis serves as an explanation to what leads viewers to form expectations about his/her physician's communication behavior.

Empathy important to in the medical world the physician-patient relationship, and has been defined as “the action of understanding, being aware, being sensitive to, and vicariously experiencing the feelings, thoughts, and experience of another...without having the feelings, thoughts, and experience fully communicated in an objectively explicit manner” (Larson & Yao, 2005, p. 1103). The current research seeks to examine whether or not medical dramas could perhaps have an influence on patient preferences and expectations of physician empathy.

The results of this study will be a significant addition to the existing communication literature for two reasons. First, they would contribute to the growing trend in communication scholarship of applying the para-social contact hypothesis to health contexts and medical programming by providing an explanation of the impact medical dramas may have regarding patient-physician communication expectations. Second, learning about how the depictions of the physician-patient relationship influence its audience may help mass media and health communication researchers better understand the perceptions and expectations that arise from heavy viewers of medical dramas, and parlay that research into applications. Hospitals and medical school programs could use this information to enhance the training of its staff in areas such as patient expectations, where such expectations may stem from, and empathic communication in the doctor-patient interaction.

Literature Review

Medical Dramas

Medical dramas include television shows such as *House*, *ER*, and *Grey's Anatomy*. Many scholars have examined the ways in which medical dramas may influence health-related attitudes or behaviors in their viewers (Barney, 2007; Chory-Assad & Tamborini, 2003; Davin, 2003; Gray, 2007; Hether et al., 2008; Jain & Slater, 2013; Lee & Taylor, 2014; Morgan et al., 2009; Moyer-Guse, 2008; Quick, 2009; Slater et al., 2002). Viewers of medical dramas expect the information to be accurate regarding health-related issues (Davin, 2003). Researchers also report that viewers were affected by knowledge, attitudes, and behaviors relating to cancer in an episode of both *ER* and *Grey's Anatomy* about breast cancer information (Hether et al., 2008). Overall, the previous work on medical dramas suggests that such television programs impact viewers' attitudes and expectations.

Despite possible inconsistencies of realistic healthcare scenes, nearly 90% of people in the United States learn about various health-related issues by viewing television (Bouman, 2009). Furthermore, exposure to medical dramas can influence viewers' perception towards physician-patient interaction, including attitudes, communication behaviors, and expectations (Jain & Slater, 2013; Morgan, Movius, & Cody, 2009; Murphy, Frank, Chatterjee, & Baezconde-Garbanati, 2013; Quick, 2009). Portrayals of health issues on television may influence the attitudes of viewers because of the display of particular communicative behaviors. Viewers saw that "television doctors engaged in many patient-centered communication behaviors such as active listening, information exchange, immediacy behaviors, and cultural respectfulness" (Roter, Hall, & Katz, 1988, p. 718).

Viewers of medical dramas expect the same medical treatment as is depicted on television (Ye & Ward, 2010). For example, one study found that most viewers of medical dramas anticipate his/her physician to be smart, attractive, and friendly (Chory-Assad & Tamborini, 2010). Such portrayals provide an interesting research opportunity to discover the impact of medical dramas on patient view towards the physician-patient interaction.

One of the ways a patient may form expectations based on a television series is by identifying with or finding a connection to the characters. If a viewer perceives himself or herself as a patient in the medical program, he or she is more likely to develop expectations of providers/physicians based on these television representations (Jain & Slater, 2013). For example, one episode of *Grey's Anatomy* focuses on war veterans who have had one or more limbs amputated. The use of pathos is strong and prevalent in this episode, as it focuses on the relationship the doctor forms with the patient. For instance, the trauma surgeon, who served in Iraq, is able to really connect and empathize with the war veteran patients as they learn to adapt to prosthetics. Because of this depiction of the physician/patient relationship, the viewer who is a war veteran and or an amputee is more likely to find a deeper connection than those who are not either of those things. Moyer-Guse, Chung, and Jain (2011) found that greater identification with television characters enhanced the viewers' behaviors and enhanced viewers' self-efficacy (Moyer-Guse et al., 2011).

The degree to which the viewer forms a connection with the characters on screen may contribute to higher levels of expectations of future medical experiences. Research on these portrayals among medical dramas has demonstrated that even viewing one episode may have effects on viewer expectations (Hether et al., 2008). The previous studies described function as an example of experiencing para-social contact with characters seen on television. Hence, the

para-social contact hypothesis may serve as an explanation regarding viewers' expectations of empathic communication by the physician.

Patient Expectations

Expectations are the patterns of projected actions affiliated with a set of rules and norms for a particular role (Burgoon & Walther, 1990). General expectations are grounded in societal norms for what is perceived as appropriate and normal, whereas person-specific expectations are often times formed by individual knowledge (Burgoon, 1993). They are essentially considered to be the anticipations of how others will act (Berger & Bradac, 1982). Burgoon and Walther (1990) also more specifically conceptualized *communication* expectations as an anticipated behavior that may be either generalized or person-specific.

According to Ellingson and Buzzanell (2009), patients form expectations about communicative style, affective tone, and personal qualities of the physician. These expectations stem from the viewers' past experiences, narratives of others' experiences, or perhaps even fictional narratives such as movies and television programs. Deledda, Moretti, Rimondini, and Zimmermann (2013) suggest that when patients are asked to express their expectations of their physician, they tend to focus on the relationship-centered behaviors, such as friendly conversation, concern for the patient, and smiling. These expectations suggest that the quality of the communication may set the tone for future interactions between patient and physician.

Previous research suggests that fictional doctors typically engage in more interpersonal communication with the patient than do real doctors (Jain & Slater, 2013). In addition to the medical plot, relational and personal dramas are typically shown on medical drama programs, perhaps conveying to the viewer inaccuracies towards the practice of medicine. These fictional programs may have a greater potential for cultivating unrealistic perceptions of various medical

contexts. For example, patients view actual doctors the same as those viewed on television (Jain & Slater, 2013). Jain and Slater (2013) argue that “experiencing physician-patient interaction on television could provide scripts to viewers about engaging in conversation with physicians, potentially influencing their expectations regarding the patient provider interaction” (p. 708). This highlights the importance of examining medical dramas’ influence on patient expectations because of the applicability this influence may have in an actual medical setting.

Although many scholars have examined how medical dramas are interpreted by viewers, few have looked at the ways in which patient expectations regarding the communication style of the physician may be influenced by watching television programs. One type of communication that is often portrayed in medical dramas by fictional doctors is empathy. Taking a closer look at patient-perceived empathy by the physician will bring to light the ways in which medical dramas influence patient expectations of this empathic communication.

Physician Empathy

Perhaps one of the most common expectations a patient may hold towards their medical experience involves empathy communicated by his/her physician. According to Derksen et al. (2013), nearly 80% of patients would prefer an empathic physician to any other doctor. Empathy is often mistaken for sympathy. However, empathy takes sympathy moves beyond the “I want to help you” and is the “I am you” in health care (Spiro, 1992). Bylund and Makoul (2002) define physician empathy as “a physician’s cognitive capacity to understand a patient’s needs, an affective sensitivity to a patient’s feelings, and a behavioral ability to convey empathy to a patient” (p. 207). In other words, physician empathy involves maintaining the expectation that the physicians are capable of acting empathetic towards the patient. Previous literature has defined empathy as the “identification with and understanding of another’s situation, feelings,

and motives” (Kim, et al., 2004, p. 238). This definition serves as a potential explanation of the expectations patients may form regarding this form of physician communication.

Clinical empathy, as a component to physician-patient communication, is considered the backbone of the patient-physician relationship. Larson and Yao (2005) suggest that empathy should be displayed in all health care occupations. Physician’s empathic communication skills have been widely recognized as an important factor of patient satisfaction, and in recent years, it has been recommended that physicians learn to become more sensitive and empathetic during the patient-physician interaction (Kim, Kaplowitz, & Johnston, 2004). Perhaps this type of behavior is an expectation of the patient regarding the physician’s communicative behaviors. Given the need for empathy in the doctor-patient relationship, physicians must demonstrate an appropriate amount of empathy towards their patient. Although the importance of empathy and patient-physician communication has been heavily researched, little is known about the influence medical dramas may have on patients and their expectations of empathic communication when physicians portray empathy towards patients on television.

Patient-Perceived Empathy

Patients commonly expect empathy from their physicians. Patient-perceived empathy is best known as one’s feelings towards the physician’s understanding and acceptance of the patient and medical condition (Kim et al., 2004). It is the extent to which a patient feels as though their doctor is demonstrating sensitivity to their needs. Investigating how patients perceive empathy is important in health care, and may result in more effective patient-centered medical experiences in the future.

The term ‘empathic communication’ will be employed in order to refer to the behavioral aspect of empathy (Bylund & Makoul, 2002). Recent scholarship on the physician-patient

relationship argues that empathic communication is often times more apparent in female physicians (Bylund & Makoul, 2002). Other scholars support this claim, based on a survey of over 700 physician participants, in which they discovered that male doctors rated themselves as less empathic in their communication with patients than female doctors (Barnsley, Williams, Cockerill, & Tanner, 1999). Both female and male physician empathic communication can be seen in many medical dramas. Although some scholars have analyzed physician empathy and gender, the current study seeks to examine empathic communication as seen on medical dramas.

Many scholars have looked at patient outcomes regarding physician empathy. However, less is known about how the portrayals of doctors on medical dramas may impact patient expectations and perceptions of physician empathy. Although empathy in physicians has been in the spotlight of much literature, little attention has been given to the ways in which viewers of television programs perceive empathic communication by fictional doctors. It is important to study the ways in which viewers form expectations of certain physician behavior, such as empathic communication. A better understanding of patient expectations of empathic communication from the physician may alter the ways in which empathy is taught in the future. Empathy in health care can be reinforced by learning the implications of how medical dramas may influence viewers' perceptions of physician communication and empathy.

It is important to note that the correlation between empathic communication and empathy may not be direct. In other words, "a physician may feel empathy for his or her patient but may not be ready, willing, or able to show it through empathic communication" (Bylund & Makoul, 2002). Therefore, the current study will focus on the empathic communication portrayed by physicians on fictional medical programs. The extent to which viewers come to expect such behavior is of interest to the current study, and will be examined through the para-social contact

hypothesis as a potential descriptor of the interaction viewers experience with fictional characters on television. Because the premise of the para-social contact hypothesis argues that viewers interact with televised characters in a similar fashion to typical social interactions, this theory may be the link between medical dramas and viewer expectations of empathic communication.

The Para-social Contact Hypothesis, Patient Expectations, and Patient Perceived Empathy

Para-social interaction, also known as the contact hypothesis (Allport, 1954), states that viewers form relationships with characters and people on television through mediated contact. Viewers are able to understand and appreciate different points of views regarding how physicians communicate with their patient through interaction with these characters. Allport's proposal was that, under appropriate conditions, contact between different groups of people should reduce problems such as stereotyping, and lead to more effective interactions. For example, if an individual has never had a medical experience or an interaction with a physician, he/she may not have any previous expectations of how doctors ought to communicate, likely relying on stereotypical assumptions of doctor behavior. Hence, contact with physicians on medical dramas may reduce the amount of stereotyping and lead to what Allport (1954) calls a para-social relationship, or interaction, with the fictional character. To fit the needs of the current research, the term relationship and interaction will both be used interchangeably to describe the contact viewers experience with characters on television.

Applying the para-social contact hypothesis to perceptions of homosexual and heterosexual individuals, one study investigated whether or not exposure to homosexuals would influence the perception heterosexual participants held towards homosexual individuals. The study found that college students who had positive interactions with homosexual people tend to generalize from that experience and be more accepting of homosexuals as a group (Herek, 1987).

In other words, the exposure to homosexual individuals was depicted in a positive manner, leading viewers to form a more optimistic attitude towards this minority group through para-social contact.

Other scholars have defined the para-social contact hypothesis as the “imaginary one-way relationship that viewers develop with people on television” (Chung, deBuys, & Nam, 2007, p. 713). For example, one study reports that watching certain fictional television programs may indicate that viewers develop the same satisfaction with friendships as having actual friends and high levels of socialization with them (Kanazawa, 2002). Basically, the para-social contact hypothesis offers an explanation of the emotional and behavioral response to contact with television characters viewers often experience (Schiappa et al., 2005). Thus, the para-social contact hypothesis is used to describe the emotional connection viewers develop with characters on television.

Para-social contact theory has also been previously applied to mediated communication. Horton and Wohl (1956) coin the term “para-social interaction” to propose that communication via media may offer viewers “an apparently intimate, face-to-face association with a performer” (p. 228). In a media-rich context, viewers may come to know the characters in the show para-socially rather than personally. In a study done on the para-social relationship viewers experience with soap opera characters, McQuail, Blumler, and Brown (1972) discovered that “soap characters frequently reminded viewers of people they knew, and viewers used characters’ situations and behavior as ways of understanding their own lives” (p. 157). Thus, people typically react to televised characters in a similar fashion to real people (Schiappa et al., 2005). For example, patients may shape expectations of the interactions they have with his/her doctor if they have formed a para-social relationship with the physicians portrayed on television

programs. Jain and Slater (2013) argue that watching medical dramas affects the viewers' behavior when viewers perceive themselves in the television program as patients. If the doctors on screen convey behaviors that resonate with the viewer, they may form a connection to that television character through para-social interaction. Therefore, exposure to medical dramas may influence the ways in which viewers experience para-social interaction with the fictional doctors on screen, leading to expectations for future medical experiences.

Some scholars have utilized the contact hypothesis as a framework for examining interactions across various mediated contexts, and have discussed how the process might differ from direct face-to-face contact (Kanazawa, 2002). Viewers often make judgments and develop beliefs about the televised characters. For example, in a study examining prejudice reduction models through intergroup contact, scholars suggest that prejudicial attitudes may be based off of a media-based stereotype (Schiappa et al., 2005). One study tested the level of prejudice towards gay men by observing the para-social contact with the television program *Queer Eye for the Straight Guy* and found that overall, para-social contact facilitated a positive para-social response regarding the attributes of minority group categories (Schiappa et al., 2005).

In the medical context, a person's beliefs about his/her physician might be influenced by the way in which physicians are portrayed on television. Scholars suggest that a para-social can be strategically cultivated by producers of mass media in the hopes of securing a more loyal audience (Ruben & Lievrouw, 1990). Portrayals of physician's communicative behaviors in medical dramas may possibly be the only source of information a viewer has on physicians, if the viewer hasn't encountered the medical issue on the television show. Obviously, viewers are able to distinguish fictional characters and people they know in real life. However, "most of the time while watching television or a movie we do not make the effort to do so" (Schiappa et al.,

2005, p. 95). This lack of effort may result in allowing television to function as a source of knowledge to many viewers.

Mass communication scholars have scrutinized the influence of television programs and argue that para-social interaction involves viewer responses of empathy, interest, identification, liking, or imitation (Schiappa et al., 2005). Basically, para-social interaction has taken place if the viewer finds the characters on television to be likable in any manner Cohen (1999) conceptualizes the para-social relationship as one in which “the viewer is engaged in a role relationship with a television persona” (p. 329). Conway and Rubin (1991) claim that viewers tend to develop positive or negative attitudes towards characters seen on television in a similar fashion to how people form positive or negative attitudes toward people in real life. When watching medical dramas, these attitudes may result in forming expectations towards future interactions with health care providers. For example, people might form expectations regarding the amount of time a physician spends with the patient based on the amount of time a fictional doctor spends with a fictional patient on medical dramas. Although attitudes and expectations are not the same construct, the para-social relationship with televised doctor may contribute to the expectations of communication behavior formed by the viewer’s attitude. Expectations may arise if viewers have a positive perception of a character, and viewers may expect that same positive perception to become a reality in his/her own physician.

Previous research suggests that viewers often evaluate television characters in a similar manner to people they encounter in the flesh (Giles, 2002). If this is true, medical dramas may be an important media to examine when looking at the extent to which these programs influence patient expectations of physician empathic communication. For the purposes of the current

study, para-social interaction will be treated as *contact* or *exposure* in order to measure the ways in which viewers respond to *Grey's Anatomy* regarding the physician-patient relationship.

In summary, the review of previous literature suggests that (a) television can influence its viewers, (b) patients have expectations regarding the physician's communication style towards the patient, (c) medical dramas influence viewers' expectations regarding the doctor-patient communication, (d) *Grey's Anatomy* may influence the ways in which viewers perceive the physician-patient communication interaction, and (e) *Grey's Anatomy* portrays empathy within doctors that could be perceived as accurate. Given these assumptions, the current research accepts the call of future research by Jain (2013), and will "examine whether exposure to patient-centered communication behaviors by television doctors influences patient expectations for physician communication behavior" (p. 718). Therefore, this study presents the following hypotheses:

H1: Individuals who watch patient-physician interaction on a medical drama will perceive higher levels of para-social interactions with medical doctors on television than those who do not watch a medical drama.

H2: Those who view a medical drama will have increased levels of expectations of empathic communication from his/her own physician compared to those who do not watch a medical drama.

H3: Those who perceive increased levels of para-social interaction will have higher expectations of empathic communication with his/her own physician.

Method

The primary objective of this study was to discover whether or not medical dramas can influence patient expectations of physician empathic communication. Although many scholars

have looked at the ways in which television may influence its viewers, few have examined whether or not medical dramas such as *Grey's Anatomy* may shape patient expectations of physician communication behavior (Barney, 2007; Chory-Assad & Tamborini, 2003; Hether et al., 2008; Quick, 2009). For the purposes of the current study, a pretest-posttest equivalent groups design was used in order to determine whether medical dramas (i.e. *Grey's Anatomy*) would influence viewers' expectations towards the patient-physician communication interaction.

Participants

Over 100 participants were recruited from undergraduate communication classes at a western University, ranging from 18 to 22 years in age, with 60 percent female and 40 percent male. Ethnicity of participants slightly varied, including 82% White, 2.4% African American, 3.3% Latino/Hispanic American, 4.1% Asian, 2.4% Native American, and 1% Other. To be eligible for this study, participants were required to be available on one night during a specific week. Students were asked to complete an online survey before and after viewing three consecutive episodes of the medical television drama *Grey's Anatomy* with the offer of one percent extra credit towards the course grade. Once participants provided consent, they were randomly assigned to either the treatment (N = 69) or control group (N = 31). Participants assigned to the control group completed the pre and posttest measures, and were not asked to view the medical show.

Measures

The data for the present research were gathered through both an online and paper/pencil survey. The questionnaire featured pretest and posttest measures on: Viewing habits of medical dramas and *Grey's Anatomy*, Perceived physician empathy, Individual patient expectations, and

Para-social contact with fictional characters. As discussed below, all measures portrayed sufficient reliability ($\alpha = 0.57 - 0.94$).

Pretest measures

Viewing habits. In order to gauge the baseline frequency in which participants view medical dramas, participants in both the control and treatment group were asked to indicate how often they watch medical dramas on television. The survey included seven items pertaining to the exposure of medical dramas and participants rated these items of viewing frequency on a Likert scale from one to five (1 = I have never seen, 2 = I have seen a couple episodes, 3 = I have seen more than one season, 4 = I have seen over half of the season, and 5 = I have watched nearly every episode). Questions such as “How many episodes of *Grey’s Anatomy* have you seen?” and “How many episodes of *Scrubs* have you seen?” were asked. Reliability was reported for this measure as a Cronbach’s alpha of 0.71.

The average response from the control group was low ($M = 1.81$, $SD = .52$), as was the average response given from the treatment group ($M = 1.90$, $SD = .67$). The objective of this aspect of the survey was to identify medical drama exposure in the pretest in order to make a fair assessment of those among the treatment group who will be exposed to *Grey’s Anatomy* (See *Appendix C*).

Patient expectations of empathic communication. In order to measure participants’ perceptions of empathy displayed in a physician, the Consultation and Relational Empathy (CARE) questionnaire was distributed to both the control group ($M = 4.11$, $SD = .53$) and the treatment group ($M = 4.32$, $SD = .64$). The CARE Measure was originally developed by Mercer, McCoachie, Maxwell, Heaney, and Watt (2005) as a part of a Health Service Research Fellowship. Previous researchers have reported the development and preliminary validation of

clinical empathy in the context of the clinical encounter (Mercer et al., 2005). This measure served as a tool for assessing the participants' perceptions of relational empathy in a clinical setting.

Originally, the CARE Measure included statements such as, "How was the doctor at making you feel at ease?" and, "How was the doctor at really listening?" However, to fit the present investigation, survey questions were re-worded to refer to the individual's expectations of his/her physician, rather than a post-visit questionnaire. An example question may be, "To what extent do you *expect* your doctor to make you feel at ease?" and "In what ways do you *expect* your doctor to let you tell your story?" and "To what extent do you *expect* your physician to show care and compassion?" Participants were asked to rate the ten items on a five-point Likert scale (1 = Poor to 5 = Excellent). These questions measured the participant's expectations of how his/her physician ought to behave regarding empathic communication (See *Appendix E*). Reliability was reported at 0.87.

Para-social contact. This survey included questions specifically designed to measure para-social contact with the fictional doctors on medical dramas. Para-social contact is usually measured with Likert-type scale responses to items such as "I think my favorite TV personality is like an old friend" and "I like to compare my ideas with what my favorite character(s) says" (Schiappa et al., 2005, p. 96). Originally developed by Rubin, Perse, and Powell (1985), the 20-item para-social scale measures the cognitive, affective, and behavioral aspects of para-social interaction with televised characters. However, the measure was scored as a single measure for the purpose of this study, similar to previous research in which the para-social interaction scale was also applied (Rubin & McHugh, 1987).

The questionnaire used in the current study was an adapted version Rubin et al.'s (1985) survey that originally looked at how viewers perceive newscasters, and instead, asked participants about their identification with medical drama characters. This portion of the survey helped examine the ways in which forming relationships with fictional television characters may operate as a function of the para-social contact hypothesis.

This measure was distributed to both the treatment ($M = 3.12$, $SD = .52$) and control group ($M = 3.10$, $SD = .62$). The survey was assigned prior to the viewing and measured on a 5-point Likert scale that observed how well the participant felt he or she connected with each individual character, ranging from 1 = strongly disagree to 5 = strongly agree (See *Appendix F*). Previous scholars recorded the validity and reliability of the instrument and reported the Cronbach's alpha to be .92 (Rubin, Palmgreen, & Sypher, 1994), pretest reliability in this study was .81.

Posttest measures

Viewing habits. Following the viewing of *Grey's Anatomy*, the scale for the control group ($M = 1.28$, $SD = .41$) was slightly modified in order to gauge the frequency in which participants viewed medical dramas in the past week. The purpose was to control for any changes made in the participant's viewing frequency of medical dramas since the completion of the pretest scale (See *Appendix D*). Questions such as, "How many episodes of *Grey's Anatomy* have you seen in the past *week*?" were asked. For the treatment group ($M = 1.55$, $SD = .56$), questions such as, "Not including the three episodes shown for this study, how many episodes of *Grey's Anatomy* have you seen in the past week?" The objective for this modification was to determine a change made in the treatment group's viewing of medical dramas since the pretest scale ($\alpha = .71$). Participants rated these items on a Likert scale from one to five (1 = I have never

seen, 2 = I have seen a couple episodes, 3 = I have seen more than one season, 4 = I have seen over half of the season, and 5 = I have watched nearly every episode of *Grey's Anatomy*).

Patient expectations of empathic communication. The posttest scale for patient expectations of empathic communication remained the same format as the pretest scale for both the control group (M = 4.16, SD = .63) and the treatment group (M = 4.27, SD = .65). No changes were made.

Para-social contact. The post-viewing survey included questions specifically designed to measure para-social contact with the fictional doctors on *Grey's Anatomy*. The scale used to determine para-social contact with medical drama television characters did not change for the control group (M = 2.99, SD = .68) in the post-viewing survey. However, the treatment group's (M = 2.97, SD = .73) scale was modified to be specific to *Grey's Anatomy* (See Appendix G). An example may be, "I consider myself friends with the doctors on *Grey's Anatomy*" and "When a doctor on *Grey's Anatomy* shows me how he or she feels about a medical issue, it helps me make up my own mind about the issue" and were rated on a Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The purpose of these alterations was to determine whether or not participants among the treatment group formed a para-social relationship with the characters on *Grey's Anatomy* specifically ($\alpha = .92$).

Stimulus

The present research selected *Grey's Anatomy* as the test case due to its uniqueness, largely in part of the diverse cast as well as by demonstrating both positive and negative characteristics of medical doctors. Quick (2009) suggests that "future research should examine how heavy viewers of shows such as *Grey's Anatomy* perceive their role as patients within the doctor-patient relationship" (p. 52). *Grey's Anatomy* highlights both the practicing medicine and

in personal relationships in the lives of the fictional physicians, and is an exemplar medical drama to study. While the current study did not target “heavy viewers” as participants, the goal of this research was to use *Grey’s Anatomy* as a way to measure the effects of medical dramas on patient communication expectations of his/her physicians on a small scale.

Three episodes of *Grey’s Anatomy* were selected for its portrayal of empathic communication displayed by the physician. Episodes 11, 12, and 13 from the fifth season which aired in 2009 were shown to participants in the treatment group. The sequenced episodes follow the lives of two particular patients; a young boy who has been in the hospital for three years, and an inmate on death row who has been stabbed in prison (See *Appendix B*). The three episodes begin and conclude the narratives of both patients, and demonstrate patient-provider communication multiple times throughout the show. Each episode lasted roughly 40 to 45 minutes.

Procedure

After participants were recruited, they were asked to provide their contact information via email to the researcher. Next they were sent a link that instructed them to complete the online pretest survey. The pretest survey included questions regarding the participant’s demographics, and was kept separate from the data. The survey then asked participants to indicate the frequency in which they watch medical dramas, specifically *Grey’s Anatomy*, in order to allow the researcher to screen for heavy viewers of *Grey’s Anatomy*.

Once the pretest responses were collected, those who were selected to be in the treatment group were contacted via email with further instructions regarding the next step in the study. Participants receiving the stimuli were asked to meet on one of two nights within the next week

(a time that was preplanned and communicated), in order to view the three episodes of *Grey's Anatomy*.

Immediately after viewing *Grey's Anatomy*, participants were asked to complete the study with a paper/pencil posttest. Pencils were provided by the researcher. Participants in the control group were contacted via email with instructions to take the posttest survey online approximately 5 days after completing the pretest. In total, the data collection stage of this study lasted nearly two weeks.

Pizza and beverages were provided at both *Grey's Anatomy* viewings as incentive for participation. After each viewing, participants were asked to sign a separate sheet of paper with their name and instructor which were kept separate from the data collected through the surveys in order to ensure confidentiality. The names of those who attended both viewings were later distributed to the appropriate instructor so participants may be given the extra credit points promised.

Analysis

SPSS was used in this study as a data-analysis tool.

To test Hypothesis 1, an independent samples *t*-test was employed to test the difference of para-social relationships between the control and treatment group. The group means were compared on a scaled variable. The mean scores for both groups were compared in order to identify the differences between groups.

An independent samples *t*-test was also used to test Hypothesis 2, and compared the pre-test (Y1) and post-test (Y2) responses of those in the treatment group against those of the control group. Doing so helped indicate whether or not those who viewed medical dramas have increased levels of expectations of empathic communication from his/her physician.

In order to find out if Hypothesis 3 was supported, Pearson's correlation coefficient was utilized to measure the strength of association between variables. Using a correlation analysis helped determine whether or not the para-social relationship development positively relates with expectations of empathic communication.

Results

Hypothesis 1 predicted that individuals who watch patient-physician interactions on a medical drama will perceive higher levels of para-social interactions with medical doctors on television than those who do not watch a medical drama. The results of the *t*-test comparing the post-test para-social interaction scores of the treatment and control groups indicated no significant difference between groups ($t [98] = 0.108, p = \text{NS}$) (see Table 1). However, participants who didn't watch *Grey's Anatomy* reported slightly higher levels of para-social interaction with television doctors ($M = 2.99$) than those who did view *Grey's Anatomy* ($M = 2.97$). Nonetheless, the null hypothesis was not rejected.

Hypothesis 2 was investigated by also employing an independent samples *t*-test. Results of the *t*-test indicated no statistical difference in empathic expectations between groups ($t [98] = 0.74, p = \text{NS}$). Participants in the treatment group reported higher average empathic expectation scores ($M = 4.27$) than participants in the control group who were not exposed to the medical drama ($M = 4.17$) in regards to patient expectations. But these differences were not statistically significant. Based on the results, the null hypothesis was not rejected (see Table 2).

Given the lack of support for the first two hypotheses, pretest data alone was used to test whether or not those who perceive increased levels of para-social interaction would lead to greater expectations of empathic communication with his/her own physician (including members of both the treatment and control groups) using the Pearson-Product Moment Correlation. The

results for hypothesis 3 suggested an association between empathic communication expectations and para-social interaction, and showed a slight positive linear correlation ($r = .26, p < .01$, one-tailed, $r^2 = .07$).

Table 1

Treatment and Control Group Differences on Post-test Viewing Habits, Expectations of Physician Empathy, and Para-social Interaction.

	α	t	df	Sig. (2-tailed)	Mean Difference	N	M	SD
Viewing Habits	.71	2.43	98	.02	.27			
Control						31	1.28	.41
Treatment						69	1.55	.56
Patient Expectations	.87	.74	98	.46	.10			
Control						31	4.16	.63
Treatment						69	4.27	.65
Para-social Interaction	.92	.11	98	.94	.02			
Control						31	3.00	.67
Treatment						69	3.00	.73

Table 2

Pearson Correlation Calculation for para-social interaction and patient expectations

	Para-social Interaction
Patient Expectations	.263**

Note. ** $p < .01$

Discussion

Many scholars have examined the effects of television on viewers' attitudes, expectations, and para-social relationships with television characters (Allport, 1954; Giles, 2002; Schiappa et al., 2005). The results of this study indicate that viewing three episodes of a medical drama did not have a significant influence on patient expectations or para-social interaction with medical drama characters. Although hypothesis one and two were not supported, the results also show support for hypothesis three, indicating a small association between para-social interaction and patient expectations. Although the first two hypotheses would suggest that para-social relationships and communicative expectations of physicians were not influenced by viewing three episodes of a medical drama, the results for hypothesis three suggest a link between patient expectations of empathic communication and para-social interactions with television characters in general. In this section, Para-social Interaction Theory will first be revisited to discuss the results of the first and second hypothesis. Next, Cultivation Theory is discussed as a possible way to better understand the impact of heavy versus light viewing of television shows in regards to viewers' attitudes, perception, and expectations. Finally, the difference between the first two hypotheses and the third hypothesis will be examined in terms of counter-research on the Hypodermic Needle Model.

Hypothesis one was designed to test the ways in which medical dramas influence individual perceived levels of para-social interaction with television characters. The findings indicate that people who watched *Grey's Anatomy* were no more or less likely to form para-social relationships with the fictional doctors on television than those who did *not* watch the medical drama. In other words, there was no statistical difference between participant groups in the post-test measures of para-social interaction and did not control for amount of total television

viewing. These results indicate that exposure to one medical drama does not particularly lead participants to perceive higher levels of para-social interaction with fictional doctors. Therefore, the current study indicates that exposure to three episodes of a medical drama, at least in the short-term, does not impact the para-social relationship between the viewers and fictional characters overall.

As stated in the review of literature, para-social interaction is a one-sided relationship that television viewers create with media characters (Rubin & McHugh, 2009). Horton and Wohl (1956) propose that simply watching a television program requires acceptance by the viewer in order for para-social interaction to take place. This suggests that if the viewer accepts the relationship and connects to the characters on television, he or she will most likely continue watching the program, and the para-social relationship becomes ongoing (Rubin & McHugh, 1987). Because the viewing of a medical drama in the current study only exposed participants to three episodes, viewers may not have had adequate exposure in order for an ongoing para-social relationship to form. Horton and Wohl (1956) would agree, and argue that a bond of closeness is developed with media characters through shared experiences existing only through viewing over time.

Duration of time is an important aspect to examine when analyzing the influence of television on the para-social role viewers assign to television personalities. In measuring the frequency with which participants have watched medical dramas, the results showed that individuals reported only low levels of exposure to most medical dramas. Perhaps participants' lack of previous medical drama viewing explains why they did not form strong para-social interactions with television characters. The literature presented by Horton and Wohl (1956) suggest a connection between heavy and light viewing in terms of experiencing para-social

interaction with characters. They argue that heavier viewing of television will lead to higher levels of connection with television characters, suggesting that the participants in the present study were perhaps not exposed enough to the medical drama in terms of experiencing para-social interaction. Rubin and McHugh (1987) concur with this notion, and claim that the amount of television exposure leads to increased attraction to a media character. Their study's results confirm the importance of heavy exposure, showing that participants who watched the same character for a minimum of three years reported higher levels of para-social interaction (Rubin & McHugh, 1987). Para-social interaction, therefore, results from both exposure and attraction, and may explain why participants in the current study did not report high levels of para-social interaction with characters on *Grey's Anatomy*. The less exposure to medical dramas on a whole, the less likely the viewers will form para-social relationships with television characters. Evidence in the present study supports this notion.

Hypothesis two predicted that watching a medical drama would influence individual expectations of empathic communication. The results indicated no statistically significant difference between those who viewed a medical drama and those who did not. This indicates that those who viewed a medical drama did *not* experience increased levels of expectations of empathic communication from his/her own physician.

Previous scholars have found that heavy viewers of medical dramas are more likely to be influenced than light viewers of medical television programs. Quick (2009) found that heavy television viewers (mostly college students) were more likely to perceive programs such as *Grey's Anatomy* as realistic and credible in comparison with light television viewers of medical dramas. In other words, the more people view a program, the more realistic they might perceive the scenes. Due to this perception, Quick (2009) argues that medical dramas such as *Grey's*

Anatomy will likely influence patient satisfaction and expectations. This study shows that heavy viewing may be more likely to influence viewers than light viewers. Hence, the current study supports the notion of Quick (2009) in that watching television more frequently has a greater chance of influencing the viewer.

Many scholars agree with the idea that heavy viewers are more likely to blur the line between what's real and what's fictional on television (Jain & Slater, 2013; Quick, 2009). For example, in a study done on single versus multiple exposures to breast cancer storylines on two popular medical dramas, Hether et al. (2008) found that individual viewings of these television programs had only a moderate effect on viewers' attitudes, behaviors and expectations, while combined exposure of multiple episodes had a significant impact on attitudes and behaviors, and expectations. In this study, participants reported low levels of viewing medical dramas in the pretest measure. Hether et al. (2008) might argue that individuals in the current research did not report changes in empathic communication expectations because of the exposure to stimuli. Since participants were only exposed to three episodes of *Grey's Anatomy*, and because they generally reported low exposure in the pre-test measures, participants may be considered light viewers. Perhaps exposure to a variety of medical dramas may be the key to discovering how viewers may be impacted by medical dramas, rather than exposure to one single television program.

Cultivation Theory may help explain the results of hypothesis one and two, and help understand why participants in this study were not influenced by exposure to a medical drama. Cultivation Theory (Gerbner & Gross, 1976) was originally developed to examine whether or not viewing violent programs on television may change the viewers' perception of violence in the real world. The main purpose of this theory is to discover the phenomenon of how "regularly

viewing a specific behavior or act on a television program will have an effect on a viewer's perception of that behavior, point of view, or act in real life" (Gerbner & Gross, 1976, p. 180).

The main proposition of Cultivation Theory is that a positive relationship exists between watching television and the development of perception, as viewers craft a sense of reality based on what is portrayed on television.

Recently, there has been a growing shift from applying Cultivation Theory to the perceptions of violence developed through general television exposure to the influence of other types of television programs such as medical dramas may have on viewers. Many scholars support this application of Cultivation Theory and argue that the examination of effects of regular exposure to medical dramas has been a leading topic in cultivation research (Chory-Assad & Tamborini, 2003; Gray, 2007; Hether et al., 2008; Quick, 2009).

Cultivation Theory supports the notion that heavy viewing of television programs such as medical dramas will have an effect on the viewer's perception of what the medical setting looks like (Chory-Assad & Tamborini, 2003; Hether et al., 2008; Quick, 2009). Because participants in the present study may be considered light viewers as they reported low levels of viewing, lack of significance in the first and second prediction offer potential support the notion of Cultivation Theory, which argues that *heavy* viewing, in contrast to light viewing, will lead to higher influence of patient attitudes, behaviors, and expectations. Hypothesis two of the present study supports this concept in terms of heavy and light viewing, as no significance was found regarding light exposure to a medical drama and individual expectations of physician communication. In other words, participants in the current study lacked the amount of viewing scholars argue is necessary in order to be influenced in areas such as patient expectations, according to Cultivation Theory (Quick, 2009).

Hypothesis three was based on an analysis of the pretest data only, and despite the lack of support for hypotheses one and two, it received slight support. Results indicate that increased reported levels of para-social interaction associated with higher levels of patient expectations of empathic communication. As Cultivation Theory predicts (Horton & Wohl, 1956), para-social interaction relates to the para-social interaction levels towards television characters in general. That is, Cultivation Theory suggests that the heavier the viewing of television, the more likely the viewer is to connect with characters on television, which is also known as forming a para-social interaction. Although exposure to three episodes of a medical drama did not quite influence the ways in which viewers experience para-social interaction with the fictional doctors in the manipulation video, results suggest a link between para-social interaction in general and patient expectations of empathic communication.

As stated earlier, the previous scholarship on para-social relationships suggests that one can learn about a group through mediated messages and representations, and if the experience is a positive one, the viewer may seek more para-social contact (Schiappa et al., 2005). If viewers choose to pursue contact with television characters, they may begin to create para-social relationships with their favorite characters on such programs. The current study asked all participants in the pre-test to rate the extent to which they agree with statements pertaining to para-social interaction with their favorite television character *in general*, rather than specific to medical drama doctors. Because results found a significant correlation between para-social interaction and expectations in the pretest survey items, it may be inferred that the para-social interaction hypothesis holds value in that viewers connect with their favorite television programs. Although participants in the current study were not influenced after viewing three episodes of *Grey's Anatomy*, the results from Hypothesis three sustains the notion of the para-

social interaction theory. Hence, this finding could tentatively support para-social interaction theory.

Of course, the lack of significance found in hypotheses one and two portrays a different conclusion than was found in hypothesis three. That is, results from the first hypothesis in this study show that viewers may not have had adequate exposure in order for an ongoing para-social relationship to form. Additionally, hypothesis two found no significance between watching a medical drama and higher expectations of empathic communication. However, data analysis for the third hypothesis supports the notion that higher levels of para-social interaction associated with higher levels of patient expectations of empathic communication. Thus, a small correlation does exist between para-social interaction and patient expectations, at least for overall past exposure. This finding would support para-social interaction theory, even though the manipulation in the current study did not appear to have an effect.

The results also support the critique of the Hypodermic Needle Model (DeFleur, 1966). This theory is now questioned by several scholars (Croteau & Hoynes, 1997; DeFleur, 1966, Bineham, 1988). In contrast to Cultivation theory, the Hypodermic Needle Model suggests that the media “injects” media content straight into its audience and has an immediate impact (Croteau & Hoynes, 1997). For example, if a commercial comes on television and tells the viewer to purchase Crest toothpaste, the model would predict that the viewer would purchase Crest toothpaste. The theory would then predict that hypotheses one and two in the current study would find support, and that participants would be influenced by exposure to a medical drama, regardless of the amount of viewing takes place. Anti-hypodermic scholars argue that its prevalence does not stand in today’s society, and that supporters of the model presume a “one-to-one relationship” between the content on television and its effect (Bineham, 1988). For instance,

under the premise of the Hypodermic Needle Model, participants in the present study who were exposed to just three episodes of a medical drama ought to be influenced in terms of their expectations of how physicians ought to communicate empathy. Additionally, the model would predict that three episodes alone could perhaps impact viewers directly in regards to forming a connection, or a para-social relationship with the fictional characters. However, results for the first two hypotheses did not show support, indicating that the Hypodermic Needle Model does not apply to the concepts in the current study, as participants were not influenced after watching a few episodes from a medical drama. This supports the critiques of the Hypodermic Needle Model in that it may be an outdated approach when examining the effects of viewings television. Although this conclusion might seem obvious, it is an important contribution to the existing research of communication theory, as these findings help confirm the unjustified connection between the exposure to media and the condition of an immediate effect (Croteau & Hoynes, 1997).

The present study addressed the global question of whether viewing medical drama impacts expectations of physician communicative behavior. The study's most important contribution may be that exposure to a few episodes of a medical drama does not influence viewers' expectations, despite what the Hypodermic Needle Model suggests. This supports Katz's (1977) claim that media "do not directly have an influence on viewers anymore...selective exposure play[s] a larger role in influencing the public in the modern age" (p. 64). The concept of selective exposure could have some utility in helping to explain why hypothesis three was supported, but hypothesis one and two were not.

Overall, it is palpable that selective exposure and relationship development with a television character describes the findings of the current study. The choice was taken away for

participants when testing hypothesis one and two. However, due to the reports of para-social interaction, it is evident that para-social interactions with television characters exist through selective exposure.

Limitations

Even though participants in the current study were not highly affected by a small amount of exposure to *Grey's Anatomy*, a small correlation did emerge between para-social interaction with television characters and communication expectations. To be clear, the para-social interaction measure was based on the exposure to television shows of participants' choice. Following a cultivation perspective, this study illustrates that perhaps participants may be affected more so when increasingly exposed to multiple types of medical dramas that they themselves choose to watch. Jonas, Schulz-Hardt, and Frey (2005) noted that when viewers select a television program to watch, "people are often biased in favor of previously held beliefs, expectations, or desired conclusions" (p. 978). Whether or not people's beliefs and expectations motivate their exposure selection is unclear, and might be an interesting area for future research. Perhaps personal choice and selective exposure plays a role in developing para-social relationships, and can explain why participants in the current research were not affected by watching three episodes of *Grey's Anatomy*.

Despite the contributions of the current findings, three major limitations to the current study exist. First, the participants were all college students. Because participants were all enrolled in classes at a Western university, the sample was not random and could not be generalized beyond the sample. Second, the total number of control (N = 31) and treatment group (N = 69) members differed and represented unequal sample sizes for comparison. This led to an imbalanced representation of each group, making it difficult to generalize either population.

And lastly, participants who watched *Grey's Anatomy* were given very brief exposure to a medical drama. The lack of diversity in medical drama shows as well as a small scale of viewing was perhaps the biggest limitation to the current study, as participants overall were not influenced by a medical drama in just three short viewings of the same series.

Directions for Future Research

Additional research is needed in the area of heavy viewers of medical dramas and how para-social interactions might influence patient expectations. Future scholarship ought to seek a population of heavy viewers of medical dramas and explore the ways in which patient expectations vary among that particular group, while still applying para-social interaction to Cultivation Theory. Perhaps qualitative research would add depth to attempts at discovering themes and patterns prevalent on *Grey's Anatomy* that may shape viewers' attitudes and expectations. Seeking a population of people who are heavy viewers of *Grey's Anatomy* or any other medical drama would be an interesting area for study in regards to the effects of heavy viewing on perceived accuracy and physician communication. Specifically, how selective exposure to a variety of medical dramas might motivate patient expectations towards physician communicative behavior. Studying the role of selective exposure might contribute to the body of knowledge on the subject.

Conclusion

For many decades, scholars have adamantly suggested that television can influence viewers' attitudes, beliefs, and expectations. Medical entertainment shows could have unintentional persuasive influences on viewers, who may develop expectations of providers and provider behavior based on television portrayals (Quick, 2009). Although the findings in the current study do not strongly support this claim, research maintains the idea that exposure to

medical entertainment programming could influence viewer's social reality perceptions regarding health care providers (Jain & Slater, 2013). Research on para-social contact with television characters remains an important area of study because it sheds light on how viewers may learn about certain types of people and behaviors (Eyal & Rubin, 2003). Indeed, the findings of this study suggest that the higher the selective para-social connection with television characters, generally speaking, the higher the levels of expectations of empathic physician communication will exist.

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Appendix A – Consent Form

Project Title: Grey's Anatomy's Influence on Patient Expectations of Physician Communication Behavior

Principle Investigator: Kayla Fadenrecht

Purpose: The purpose of this research is to discover the ways in which viewers perceive characters on medical dramas. I am inviting people to participate in the research because they have expressed interest in my study and are eligible to participate. I am seeking people who are in COMX 111 and available on two nights during the month of March, 2015 in order to watch a couple episodes of *Grey's Anatomy*.

Procedure: You will receive an email from the researcher providing further instructions on how to participate in the study. The email will ask you to take an online survey in which the direct link will be provided. It should not exceed 20 minutes. Following the survey, you will be contact a second time and given instructions regarding where to go to watch *Grey's Anatomy*, should you be selected to be a part of the treatment group (the group that will be randomly selected to watch *Grey's Anatomy*). After the episodes are watched, you will be either emailed a link to a second survey, or will be given a paper/pencil survey to complete. The control group will be contacted via email and instructed to complete the posttest survey on the link given to them in the email.

Risks: Because you are asked to fill out a survey referring television viewing, there is a low level of discomfort in the survey portion of this study. However, in the stimuli viewing of this study, participants will be exposed to some graphic fictional content pertaining to surgery and the practice of medicine. Although the content is the same as on all network television, you may withdrawal at any time from the study.

Benefits: There may be no personal benefit from participating in this study. However, it is hoped that the results of this study provide more evidence to assist health communication scholars to better understand the effects on viewers' perceptions of medical dramas.

Compensation: Compensation will be offered in the form of extra credit as employed by your Graduate Instructor in COMX111 as well as popcorn and pizza available at the viewing as incentive for your participation.

Confidentiality: Name and email will be collected from participants but will remain on a detached sheet of paper, separate from the surveys. Data will be kept confidential and names will not be used in the current study.

Voluntary Participation: All participation is voluntary. There is no penalty for those who do not wish to participate. You may withdrawal from this study at any time.

Questions: Should you have any questions pertaining to the current study, please contact: Kayla Fadenrecht, Kayla.fadenrecht@gmail.com

Resources: Should participants feel any discomfort, I will provide a contact for counseling available at the Curry Health Center at University of Montana.

Subject's Name (Printed): _____

Date: _____

Subject's Signature: _____

Appendix B – Episode Index

Season 5 – Episode 11 – Aired 01/08/09

With You Were Here (part 1 of 3)

“Bailey teams with Seattle Grace’s new pediatric surgeon, Dr. Arizona Robbins, to save the life of a young patient” (ABC, 2011).

Season 5 – Episode 12 – Aired 01/15/09

Sympathy for the Devil (part 2 or 3)

“Derek’s mother makes a surprise visit to Seattle and meets Meredith for the first time, as Mark tries to conceal his relationship with Lexie from her” (ABC, 2011).

Season 5 – Episode 13 – Aired 01/22/09

Stairway to Heaven (part 3 or 3)

“Bailey grows desperate as a patient’s condition becomes more and more dire” (ABC, 2011).

Appendix C – Participant Viewing Habits
(Pretest version to both treatment and control group)

Please respond to each item by checking the appropriate box, indicating the number that best represents your medical drama viewing.				
<p>1 = I have never seen an episode 2 = I have seen a couple episodes 3 = I have seen almost half of the episodes 4 = I have seen over half of the episodes 5 = I have seen nearly every episode</p>				
1. How many episodes of <i>Grey’s Anatomy</i> have you seen?	1 - <input type="checkbox"/>	2 - <input type="checkbox"/>	3 - <input type="checkbox"/>	4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
2. How many episodes of <i>House, M.D.</i> have you seen?	1 - <input type="checkbox"/>	2 - <input type="checkbox"/>	3 - <input type="checkbox"/>	4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
3. How many episodes of <i>General Hospital</i> have you seen?	1 - <input type="checkbox"/>	2 - <input type="checkbox"/>	3 - <input type="checkbox"/>	4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
4. How many episodes of <i>E.R.</i> have you seen?	1 - <input type="checkbox"/>	2 - <input type="checkbox"/>	3 - <input type="checkbox"/>	4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
5. How many episodes of <i>Private Practice</i> have you seen?	1 - <input type="checkbox"/>	2 - <input type="checkbox"/>	3 - <input type="checkbox"/>	4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
6. How many episodes of <i>Scrubs</i> have you seen?	1 - <input type="checkbox"/>	2 - <input type="checkbox"/>	3 - <input type="checkbox"/>	4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
7. How many episodes of any other medical drama (Such as <i>Heartland, Hawthorne, Miami Medical, Nip/Tuck, Nurse Jackie, Off the Map, Royal Pains, Saved, Strong Medicine, Third Watch, & Trauma</i>) have you seen?	1 - <input type="checkbox"/>	2 - <input type="checkbox"/>	3 - <input type="checkbox"/>	4 - <input type="checkbox"/> 5 - <input type="checkbox"/>

Appendix D – Participant Viewing Habits
(Posttest version, to both treatment and control group)

<p>Please respond to each item by checking the appropriate box, indicating the number that best represents your medical drama viewing <i>in the last week.</i></p>						
<p align="center"> 1 = I have never seen an episode 2 = I have seen a couple episodes 3 = I have seen almost half of the episodes 4 = I have seen over half of the episodes 5 = I have seen nearly every episode </p>						
1.	How many episodes of <i>Grey’s Anatomy</i> have you seen?	1 - <input type="checkbox"/>	2 - <input type="checkbox"/>	3 - <input type="checkbox"/>	4 - <input type="checkbox"/>	5 - <input type="checkbox"/>
2.	How many episodes of <i>House, M.D.</i> have you seen?	1 - <input type="checkbox"/>	2 - <input type="checkbox"/>	3 - <input type="checkbox"/>	4 - <input type="checkbox"/>	5 - <input type="checkbox"/>
3.	How many episodes of <i>General Hospital</i> have you seen?	1 - <input type="checkbox"/>	2 - <input type="checkbox"/>	3 - <input type="checkbox"/>	4 - <input type="checkbox"/>	5 - <input type="checkbox"/>
4.	How many episodes of <i>E.R.</i> have you seen?	1 - <input type="checkbox"/>	2 - <input type="checkbox"/>	3 - <input type="checkbox"/>	4 - <input type="checkbox"/>	5 - <input type="checkbox"/>
5.	How many episodes of <i>Private Practice</i> have you seen?	1 - <input type="checkbox"/>	2 - <input type="checkbox"/>	3 - <input type="checkbox"/>	4 - <input type="checkbox"/>	5 - <input type="checkbox"/>
6.	How many episodes of <i>Scrubs</i> have you seen?	1 - <input type="checkbox"/>	2 - <input type="checkbox"/>	3 - <input type="checkbox"/>	4 - <input type="checkbox"/>	5 - <input type="checkbox"/>
7.	How many episodes of any other medical drama (Such as <i>Heartland, Hawthorne, Miami Medical, Nip/Tuck, Nurse Jackie, Off the Map, Royal Pains, Saved, Strong Medicine, Third Watch, & Trauma</i>) have you seen?	1 - <input type="checkbox"/>	2 - <input type="checkbox"/>	3 - <input type="checkbox"/>	4 - <input type="checkbox"/>	5 - <input type="checkbox"/>

Appendix F – Para-social Interaction Scale
 (Pretest Version, Control and Treatment Group
 Posttest Version, Control Group only)

Please respond to each item by checking the appropriate box, indicating the degree to which you agree with the statement below.	
1 = Strongly Disagree 2 = Somewhat Disagree 3 = Neutral 4 = Somewhat Agree 5 = Strongly Agree	
1. Medical Dramas show me what doctors are like.	1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
2. When the fictional doctors on medical dramas joke around with one another it makes it easier to watch.	1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
3. When my favorite character shows me how he/she feels about medical issues, it helps me make up my own mind about the issue.	1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
4. I feel sorry for my favorite medical doctor when he/she makes a mistake.	1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
5. When I am watching a medical drama, I feel as though I am part of their group.	1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
6. I like to compare my ideas with what my favorite medical drama character says.	1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
7. The doctors seen on TV make me feel comfortable, as if I am with friends.	1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
8. I see my favorite character as a natural, down-to-earth person.	1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
9. I like hearing the voice of my favorite character in my home.	1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
10. My favorite character keeps me company when the television program is on television.	1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/>
11. I look forward to watching my favorite character on the medical drama program.	1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/>

<p>12. If my favorite television character appeared on another television program, I would watch that program.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>13. When my favorite character shares medical information, it is the kind of things I would like to know.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>14. I sometimes make remarks to my favorite television character during the medical drama program.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>15. If there were a story about my favorite character in a magazine, I would read it.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>16. I miss seeing my favorite character when he/she isn't on the medical programs.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>17. I would like to meet my favorite character in person.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>18. I think my favorite character would be like an old friend.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>19. I find my favorite character to be attractive.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>20. I am not satisfied when I watch other characters different than my favorite character.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>

Appendix G – Para-social Interaction Scale
 (Posttest Version, Treatment Group only)

<p>Please respond to each item by checking the appropriate box, indicating the degree to which you agree with the statement below.</p>	
<p>1 = Strongly Disagree 2 = Somewhat Disagree 3 = Neutral 4 = Somewhat Agree 5 = Strongly Agree</p>	
<p>1. <i>Grey's Anatomy</i> showed me what medical doctors are like.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>2. When the fictional doctors on this medical drama joked around with one another, it was easier to watch.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>3. When my favorite character on this medical drama showed me how he/she feels about a medical issue, it helped me make up my own mind about the issue.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>4. I felt sorry for my favorite medical doctor on <i>Grey's Anatomy</i> if he/she makes a mistake.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>5. While watching this medical drama, I felt as though I was part of their group.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>6. I compared my ideas with what my favorite medical drama character on <i>Grey's Anatomy</i> said.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>7. The doctors from this medical drama made me feel comfortable, as if I was with friends.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>8. I saw my favorite character on <i>Grey's Anatomy</i> as a natural, down-to-earth person.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>9. I liked hearing the voice of my favorite character while watching this medical drama.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>10. My favorite character kept me company while watching this medical drama.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>11. I look forward to watching my favorite character on this medical drama program in the future.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p> </p>	

<p>12. If my favorite television character from <i>Grey's Anatomy</i> appeared on another television program, I would watch that program.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>13. When my favorite character from this medical drama shared medical information, it is the kind of thing I would like to know.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>14. I sometimes made remarks to my favorite television character during this medical drama program.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>15. If there were a story about my favorite character from <i>Grey's Anatomy</i> in a magazine, I would read it.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>16. I will miss seeing my favorite character from this medical drama.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>17. I would like to meet my favorite character from this medical drama in person.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>18. I think my favorite character from <i>Grey's Anatomy</i> would be like an old friend.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>19. I find my favorite character from this medical drama to be attractive.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>
<p>20. I am not satisfied when I watched other characters different than my favorite character in <i>Grey's Anatomy</i>.</p>	<p>1 - <input type="checkbox"/> 2 - <input type="checkbox"/> 3 - <input type="checkbox"/> 4 - <input type="checkbox"/> 5 - <input type="checkbox"/></p>