GENRE-SPECIFIC CULTIVATION: THE IMPACT OF MEDICAL DRAMA TELEVISION SHOWS ON HEALTH PERCEPTIONS

A THESIS SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAI’I AT MĀNOA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

IN

COMMUNICOLOGY

MAY 2014

By

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Keywords: cultivation theory, health beliefs, medical dramas, television
ABSTRACT

This study examined the effects of exposure to medical drama television programs on health beliefs, including perceptions of personal health risk, doctors’ character, and doctors’ response efficacy toward disease. An experiment that manipulated the amount of exposure to medical dramas was conducted to study these effects. Results showed a significant, positive relationship between increasing exposure to medical dramas and perceptions of doctors’ physical attractiveness and a negative relationship between exposure and perceptions of doctors’ composure. No significant relationship was found between medical drama exposure and perceptions of personal health risk or doctors’ response efficacy.
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CHAPTER 1

INTRODUCTION

It is difficult to consider an American home complete without a television. Television is considered a purveyor of cultural values and norms, acting as a socializing agent in American society (Kahlor & Eastin, 2011). Television programs inform members of society what to buy, how to behave, and even what to believe; that is, television programs have become an important source of information for viewers. Television programs broadcast messages intended to affect viewers’ attitudes or behaviors, but these programs can also lead to unintentional effects. With the growing diversification of television content, the potential influence of television on society is ever increasing (Webster, 2005).

The television can influence people in many ways. Television programs, for instance, can distinguish between socially acceptable and unacceptable behaviors. The things children see on television, for instance, can teach them valuable life lessons, including the negative outcomes of unethical behaviors (Potter, 1990). Television programming can also affect viewers in potentially negative ways. Television viewing has been linked in past research to the construction of racial stereotypes with negative connotations (Lee, Bichard, Irey, Walk, & Carlson, 2009), the acceptance of rape myths (Kahlor & Eastin, 2011), and exposure to advertisements of products that could reduce one’s well-being (e.g., junk food) (Strasburger, Jordan, & Donnerstein, 2010).
Individuals use the television to satisfy entertainment and informational needs (Webster, 2005). In satisfying these needs, they are often exposed to medical information from the relative pervasiveness of this information across many television genres, including the news, educational programs, and talk shows (Lariscy, Reber, & Paek, 2010; Smith, 2011). This exposure may encourage viewers to see television programs as viable sources of health information. Medical drama programs specifically focus on the lives of doctors and medical professionals, allowing viewers to become involved with the plot as third-party observers (Quick, 2009; Ye & Ward, 2010). The intimate perspective of medical professionals presented in the narratives of medical drama makes this genre realistic and believable. Viewers may even believe their own healthcare providers and medical conditions resemble those they see on television (Chory-Assad & Tamborini, 2003; Foss, 2011; Hetsroni, 2009). Viewers can adopt beliefs about the real world based on consistent themes broadcasted on television and use these beliefs in their judgments of real-life situations.

Many researchers have come to recognize and examine the potential influence of television on health beliefs (e.g., Do & Kincaid, 2006; Valente, Murphy, Huang, Gusek, Greene, & Beck, 2007). Television programs address health issues in a variety of direct (e.g., news programs, talk shows) and indirect (e.g., situation comedies, medical dramas) ways. Health messages on television affect viewers’ knowledge, beliefs, and behaviors by increasing awareness of different diseases, promoting higher evaluations of medical practices and procedures, and changing eating and exercising habits (Do & Kincaid, 2006; Hether, Huang, Beck, Murphy, &
Valente, 2008; Knapp et al., 2005; Valente et al., 2007). It is important to focus attention on the knowledge and belief systems cultivated by medical dramas on television given that they can translate into viewers’ health behaviors.

Medical dramas often overemphasize patients’ ailments, often focusing on at least one health condition in each episode (Hetsroni, 2009). Consistent exposure to illness and disease in medical dramas may lead heavy viewers to overestimate their perceived likelihood of becoming ill or encountering other health problems. Consequently, medical dramas can affect viewers’ risk perceptions about illness and disease. Another attribute of medical dramas is that they give viewers a glimpse into the world of doctors. These shows follow doctors while they check up on their patients, interact with colleagues, and engage in intimate relationships. Depictions of medical doctors in these dramas may guide viewers’ beliefs about doctors’ behaviors and personality traits in positive or negative ways (Foss, 2011).

Understanding the effects of medical dramas on real-world health perceptions has several important implications. The effects of medical dramas on beliefs about health risks and efficacy of doctors are complementary when considering their implications. Viewers of medical dramas may overestimate their health risks and underestimate their ability to avoid health problems, causing them unnecessary concern. Heavy viewers of medical dramas, who have inflated estimations of health risk, may decide to seek health information to lessen their risk. The conventional method for seeking health information is visiting a doctor. However, for viewers of medical dramas, the decision to seek the advice of a doctor may be moderated by beliefs cultivated by medical dramas. Viewers will visit their
healthcare providers, with inflated expectations, if they believe doctors are highly personable and respond to their medical conditions with a high degree of efficacy. They may become dissatisfied when the television world cultivated in their mind contradicts their real-world perceptions. This dissatisfaction can prompt individuals to seek alternative, less credible sources of medical information. Conversely, if medical dramas cultivate high perceptions of risk and negative perceptions of doctors, viewers may seek nontraditional sources of health information, such as asking a friend, searching the Internet, or watching more television, from the outset. Therefore, the television not only influences viewers’ estimations of health risk but can also affect their method for relieving anxieties stemming from the risk.

Many practical benefits of this research on medical dramas to clinicians who practice medicine can be ascertained. Medical professionals can better address their patients’ concerns by gaining an understanding of the various ways people acquire health information. The ability to anticipate the effects of medical dramas on viewers’ health beliefs will allow doctors to present accurate information while contextualizing the information viewers acquired from the television. Doctors can also be more informed about their patients’ expectations of them. Physicians who predict their patients’ expectations about their character, formed through television, can adapt behaviors to satisfy their patients better. Patient dissatisfaction is important because it could mean the difference between patients seeking medical advice or neglecting health risks.

Before exploring the link between medical drama television programs and health beliefs, it is necessary to review past research on the effects of television. The
use of television as a health information source is initially explored. This section is followed by examples of television’s influence on knowledge, attitudes, and behaviors. Next, cultivation theory and the growing evidence of genre-specific cultivation effects are discussed. Finally, portrayals of disease, health risk, and doctors on television are reviewed before introducing the hypotheses.

Television as a Health Information Source

People turn to the television to be entertained and can passively become informed on a wealth of topics by virtue of the information presented in programs (Lee & Niederdeppe, 2011). One specific way television programs influence viewers is showing health information that cultivates certain beliefs and exposing the link between certain activities and personal health. Talk shows, for example, cover how everyday behaviors, such as using a cell phone or touching the bottom of a handbag, can be a health risk (Oz, 2010; The Dr. Oz Show, 2013). Other television programs present the negative effects of smoking cigarettes on one’s health and encourage cessation (Flay, 1987). To discourage viewers from behaving recklessly, the harmful effects of driving under the influence of alcohol are frequently addressed in television dramas and public service announcements (Dejong & Atkin, 1995).

Healthy living habits are frequently discussed on television. News stations, for instance, sometimes report research findings on what foods have been linked to health problems, such as cancer or hypertension (Lee & Niederdeppe, 2011). Television programs also address public concerns over the consumption of consuming genetically-modified organisms (GMOs) (Lewison, 2007). Myriad
television genres also feature doctors and the medical environment (Chory-Assad & Tamborini, 2001). Indeed, television viewers are exposed to varied messages about health from multiple programming sources.

The demography of people who use television to gain health knowledge has been examined in research. The findings on who uses the television as their primary health information source seem to be inconclusive (Lariscy, Reber, & Paek, 2010; Smith, 2011). Beyond differences in sex and age, research has also found that characteristics such as health orientation affect the way individuals consume and make sense of health information on television (Dutta, 2007). Health orientation is the degree to which individuals are willing to care for their health (Dutta-Bergman, 2004). People who are less health-oriented are more likely to use the television as a source of health information than those more health conscious. This conclusion may be explained by the characterization of television as a passive consumption channel. Passive consumption channels allow individuals to acquire information without engaging in active information processing (Dutta-Bergman, 2004). Health-oriented individuals are more likely to use active consumption channels, such as interpersonal communication or print sources, to acquire health information while less health-oriented individuals turn to passive consumption channels, such as the television or radio. Because many individuals use television to gather information about health issues, it is not surprising that the television influences individuals’ health knowledge, beliefs, and behavioral intentions.
Effects of Television on Health Knowledge, Attitudes, and Behaviors

The effects of television viewing on health-related knowledge have been well documented in the media effects literature. Television programming can increase viewers’ knowledge about health-related issues, whether intentionally or unintentionally. Research has linked television exposure to increased health knowledge. For example, individuals who viewed *Shabuj Chaya*, a television program focused on sexually transmitted diseases and family planning, had greater awareness of HIV/AIDS, contraceptive use, and general health practices than those who did not watch the program (Do & Kincaid, 2006). Television news viewers also have greater knowledge about breast cancer from the large number of stories that cover it (Morton & Duck, 2001). Further, television viewing increases knowledge of condom use in adolescents (Collins, Elliot, Berry, Kanouse, & Hunter, 2003).

Television programming can also influence viewers’ beliefs and attitudes about health-related issues in addition to increased knowledge. Viewers of crime and emergency shows reported exaggerated beliefs about the prevalence of alcohol-related incidents, such as assaults, automobile crashes, and others injuries (Slater & Jain, 2011). Exposure to television news can change how much viewers believe others are at risk for skin cancer (Morton & Duck, 2001). Among young children, exposure to beer advertisements has been linked to favorable attitudes toward drinking (Grube & Wallack, 1994).

Heavy television viewing is also a factor in perceiving health-related risks. For example, estimates of susceptibility to health problems, such as breast cancer, heart attack, stroke, and diabetes, of self and others has been shown to grow with
television viewing (Ye, 2010). Exposure to local news also contributes to fatalistic beliefs, such as pessimism, helplessness, and confusion or ambiguity, about cancer (Lee & Niederdeppe, 2011; Niederdeppe, Fowler, Goldstein, & Pribble, 2010). News media often focus on sensationalistic or novel causes of cancer but rarely include resources for viewers to follow up on the information presented. News stories precipitate fatalistic beliefs because these stories do not offer viewers a way to alleviate the risks of developing cancer (Niederdeppe et al., 2010). Holding fatalistic beliefs are significant because they reduce individuals’ likelihood of performing behaviors that lower their risk (Han, Moser, & Klien, 2007).

Lastly, research has focused on the relationship between television viewing and behavioral intentions and behaviors. Married couples that viewed a medical show on family planning visited health clinics more than those who did not watch the show (Do & Kincaid, 2006). Children exposed to beer advertisements on television reported greater intentions to drink as an adult (Grube & Wallack, 1994). Gay men who watched a television narrative about syphilis were motivated to get screened for syphilis and pass the information on to members in their social circles (Knapp Whittier, Kennedy, St. Lawrence, Seeley, & Beck, 2005). Viewers also engaged in more exercising, protective behaviors from injuries at work, regular blood pressure checks, frequent checkups, and fruits and vegetables consumption after exposure to healthy eating habit storylines on television (Valente et al., 2007).

Research on a broad range of television programs indicates that viewers’ knowledge, beliefs, and behaviors are cultivated, in some meaningful way, by consistent exposure to television. This is why cultivation theory might be an
appropriate lens to view the effects of medical dramas on health perceptions. In the next section, the origins of cultivation theory and its current modifications are reviewed.

**Cultivation Theory**

**History of Cultivation Theory**

Cultivation theory (Gerbner, Gross, Morgan, & Signorielli, 1980) has been widely used to examine the effects of media on viewers’ perceptions of social reality. Despite the wide range of available media, cultivation theory has been primarily applied to television consumption. The main proposition of cultivation theory is that those who spend more time watching television are more likely to perceive the real world in ways that reflect the most common and recurring messages of the television world (Gerbner, 1998; Gerbner et al., 1980; Gerbner, Gross, Morgan, & Signorielli, 1994; Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002; Hetsroni, 2008; Morgan & Shanahan, 2010; Shanahan & Morgan, 1999). Cultivation involves long-term effects; that is, these effects do not occur after one sitting. The messages that cultivate viewers’ knowledge, beliefs, attitudes, and values are considered part of the television mainstream. Morgan and Shanahan (2010) explained that heavy viewers undergo mainstreaming in long-term television exposure wherein an otherwise divergent group of viewers converge in their outlooks toward the dominant cultural indicators (i.e., central television messages that reflect our culture) on television. In other words, long-term exposure to television affects individuals’ evaluations of social reality such that they believe the television world
accurately represents real-life situations (Gerbner, Gross, Morgan, & Signorielli, 1982).

Original studies of cultivation theory focused on heavy television viewing and fear of crime (Gerbner, 1998; Gerbner et al., 1980, 2002). These studies demonstrated that heavy television viewing cultivates exaggerated perceptions of victimization, mistrust, and danger due, in part, to the high prevalence of violent messages on television (Gerbner, 1998; Gerbner et al., 1980, 2002; Gerbner, Gross, Morgan, Signorielli, & Jackson-Beeck, 1979; Morgan & Shanahan, 2010). The frequent portrayal of violence on television suggests that, at the time, crime was part of the mainstream of television. The term mean world syndrome was borne out of cultivation research, reflecting a general mistrust that television viewers had in people (Gerbner, 1998; Gerbner et al., 2002; Morgan & Shanahan, 2010, Shanahan & Morgan, 1999). Mean world syndrome was therefore a cultivated effect of the themes depicted on television.

The effects described by cultivation theory can be broken into two categories: first-order and second-order effects. First-order effects materialize under conditions in which long-term television exposure leads to general views about the state of the world or public opinion (Bilandzic, 2006; Hawkins & Pingree, 1982, 1990). First-order effects involve learning facts about the real world from what viewers see on the television. Second-order effects occur when long-term television exposure shapes individuals’ beliefs and attitudes (Bilandzic, 2006; Hawkins & Pingree, 1990). Because television reflects mainstream culture, it might be difficult to evaluate the directionality of influence between the mainstream and
these first or second-order effects (Potter, 1990). One way to determine cultivation effects is to identify differences in the realities portrayed in the real world and television world, and see whether viewers report exaggerated beliefs or judgments of the real world consistent with those portrayed in television programs.

Several facts and estimates are cultivated through long-term exposure to the television. For example, television cultivates ideas about elderly people based on the underrepresentation of the elderly on television. In comparison to light television viewers, heavy viewers believed there were fewer old people in 1980 than 20 years prior, older people were generally in bad health, and they did not live as long as before (Gerbner, Gross, Signorielli, & Morgan, 1980).

Television also cultivates a wide variety of second-order beliefs. For example, television cultivates gender-specific stereotypes of women as mothers (Ex, Janssens, & Korzilius, 2002). Even third- to fifth-graders exposed to television messages over time believed the stereotypes of gender-role activities (e.g., cooking, playing sports) and qualities (e.g., warmth, independence) depicted on television (Rothschild, 1984). Morgan (1982) also found that television cultivated beliefs that women are most satisfied at home raising their children and men are born with more ambition.

Television viewing has also been shown to cultivate beliefs about medical issues. Heavy viewers are less accepting of individuals with mental illness and believed that placing mental health institutions in residential neighborhoods would pose a risk to residents (Diefenbach & West, 2007). These beliefs stem from the false portrayal of the mentally ill as more violent than non-mentally disordered people on television (Diefenbach & West, 2007; Granello & Pauley, 2001). Minnebo
and Eggermont (2007) found that heavy viewers of television are also more likely to believe that most young people are substance abusers than light viewers.

Personal values are also strongly cultivated through television viewing. Television can cultivate perceptions of primary values, such as “hard work yields rewards” and “good wins over evil” (Potter, 1990). Potter demonstrated that values portrayed on television were held in higher regard by heavy television viewers compared to light viewers. Heavy viewers of television are more likely to call themselves “moderate” and avoid associating themselves with liberal or conservative labels (Gerbner, Gross, Morgan, & Signorielli, 1984). Other more immediate values, such as materialism, acceptance of capitalistic values, and diminishing concerns for the natural environment, are also cultivated by television (Carlson, 1993; Good, 2009; Shrum, Lee, Burroughs, & Rindfleisch, 2011).

Several scholars have attempted to explain why heavy viewers accept the facts and beliefs presented in television’s mainstream. The various explanations for cultivation effects are all consistent in their focus on cognitive processes underlying cultivation. These explanations describe the process of cultivation effects in different ways but are not mutually exclusive. One explanation of cultivation is the heuristic processing model of cultivation effects (Shrum, 1996). Shrum proposed that heavy television viewers exposed to frequent, recent, and vivid television images are most likely to develop heuristics readily available and easily accessible to them. These heuristics are mental shortcuts that individuals store in their memory to use later when making judgments. These mental constructs are used in reality judgments about events on television. Riddle (2010) tested the heuristic
processing model by applying principles of frequency, recency, and vividness to violent television shows and subsequent estimates of crime. The magnitude of cultivation effects was greatest for frequent exposure to vivid images and lowest 48 hours after exposure with no repeated exposure of the media violence.

Resonance is another explanation for variation in the intensity of cultivation effects. The effects can vary with the frequency of exposure (Shrum, 1996) but also the degree of resonance, or how congruent the television world is with the viewer's environment (Gerbner et al., 2002; Shanahan & Morgan, 1999). Cultivation effects weaken when an individual's surroundings, which provide first-hand personal experience, contradict the portrayed reality of the television world (Gerbner et al., 2002; Shanahan & Morgan, 1999). The mental models approach expands on the resonance hypothesis (Roskos-Ewoldsen, Davies, & Roskos-Ewoldsen, 2004). Mental models are dynamic cognitive representations of a situation, event, or object that can be mapped on to new situations and guide interpretations. These representations are more specific than schema, which instead reflect knowledge of generalized phenomena. The mental models approach suggests that viewers do not engage in careful evaluation of television messages but rather process information thoughtlessly (Wyer & Radvansky, 1999). Through mindless television consumption, individuals construct mental models from television situations (Roskos-Ewoldsen et al., 2004). These models are stored in the same manner as mental models developed from real-life events and are similarly used to process incoming information, form social judgments, and make predictions. Mental models also influence decision making when the model is relevant to the situation and
available in one’s memory (Radvansky & Zacks, 1997; Zwann & Radvansky, 1998). They are activated in memory by personal experience, and similarities between real-life events and the mental model from television viewing result in strong cultivation effects.

Perceived closeness is a third explanation for cultivation effects. Closeness can be captured by viewers being reminded of actual consonant real-world experiences (i.e., experiential closeness) or being transported into the television narrative (i.e., mediated closeness) (Bilandzic, 2006; Schultz, 1970). In experiential closeness, there is a match between television content and individuals’ external reality. Television does not necessarily confirm what happens in real life but instead fails to disconfirm reality, which strengthens existing beliefs similar to those presented in television content (Bilandzic, 2006). Therefore, mainstream messages are most likely to be cultivated in individuals who have real-world experiences that match the television world, a similar principle to the resonance hypothesis. In mediated closeness, full attentional resources become dedicated to processing the television narrative (Bilandzic, 2006; Green & Brock, 2000, 2002). Because the individual becomes completely immersed in the television narrative, critical thoughts and counterarguments are suspended and the narrative is taken as reality without any critical comparison to the real world (Bilandzic, 2006; Green & Brock, 2000, 2002). Bilandzic (2006) argued that television content is judged as more realistic and viewed as a part of social reality as viewers’ grow closer to television content. Individuals with perceived experiential or mediated closeness are most likely to have cultivated beliefs (Bilandzic, 2006). Despite these insights into
cultivation effects, cultivation theory has been criticized on the basis of fundamental conceptual gaps, discussed in the next section.

**Genre-specific Cultivation**

The original construction of cultivation theory has been the focus of criticism for its antiquated assumptions of how media are consumed. The theory is based on the assumption that mass media portray uniform, homogenized messages that are cultivated in heavy viewers. In accordance with this assumption, cultivation studies originally treated all channels and programs as a singular, undifferentiated medium (Hughes, 2001; Morgan & Shanahan, 2010; Potter, 1990). At the time cultivation theory was initially introduced, only a few television channels were available, making it reasonable to study the effects of general television viewing on perceptions. This assumption, however, was no longer tenable with the increasing fragmentation of television (Hughes, 2001; Potter, 1990). Shrum (1996) argued that exposure to mainstream television content could be evaluated by estimating one’s time spent watching television. The limited number of channels, at the time of this remark, led researchers to use total time spent watching television as an indicator of exposure to a homogenized set of television messages. This assumption quickly became anachronistic in the age of multiplex channels. Therefore, cultivation theory had to evolve to accommodate the growing scope of television channels and genres.

A second assumption of cultivation theory is that television consumption was unselective and ritualistic. Individuals did not select television programs on the basis of content but rather programs that fit into their schedules (Gerbner, Gross,
Morgan, & Signorielli, 1994; Gerbner, Gross, Morgan, Signorielli, & Jackson-Beeck, 1979; Potter, 1990). This assumption was the grounds for Gerbner et al.’s (1979, 1994) claim that a heavy viewer could not miss the most frequent and dominant patterns of television content. Viewers today, however, commonly select television programs they want to watch based on their personal preferences and interests. Technologies such as TiVo and the digital video recorder (DVR) have changed the landscape for television viewing by allowing viewers to choose what they want to watch at any time they want to watch it. Additionally, the Internet gives viewers access to television shows out of syndication through platforms such as HuluPlus and Netflix. These advances in technology have made assumptions of indiscriminant television viewing obsolete.

Changes in the television backdrop required scholars to rethink the scope of cultivation effects. The increasing fragmentation of television and introduction of new technologies transitioned cultivation studies from locating small effects to null effects. Cultivation researchers consequently revised the theory to account for changing times. These scholars began to find effects when compartmentalizing television programs by specific genre and examining beliefs espoused in each of them instead of looking at the effects of generalized television exposure. Cultivation effects could be found at a micro level by breaking down the effects by genre.

Noteworthy first- and second-order cultivation effects have been discovered using this micro-level approach. For instance, heavy viewers of entertainment television, such as comedies, music television, movies on television, late-night talk shows viewed Asians as less conscientious and African Americans as less agreeable
and less extroverted (Lee et al., 2009). Viewers of information programming and soap operas perceived Asians as more introverted and rated African Americans as more open. These findings are significant because they demonstrate that the magnitude and direction of a stereotype cultivated through television can change as a function of genre type.

Soap operas is another genre that has been linked to cultivation effects. Soap operas commonly present narratives with exaggerated levels of rape-related content and focus on relationships in which women are portrayed as passive sex objects and men as powerful (Kahlor & Eastin, 2011). Kahlor and Eastin suggested that long-term soap opera viewing is related to the overestimation of false rape accusations, and heavy viewers of soap operas have higher rape myth acceptance. Rape myths include beliefs that women fabricate rape accusations when they regret consensual sex and women who claim rape are promiscuous or dress provocatively. Other research has linked long-term exposure of daytime soap operas to the acceptance of sexual stereotypes, such as the view that females are sex objects and males are sex driven and unfaithful (Ward, 2002).

Talk shows represent another genre that cultivates knowledge, beliefs, and attitudes in their viewers. Talk shows address controversial issues, including running away from home, bringing guns to school, teen pregnancy, and premarital sex (Davis & Mares, 1998). As a result, exaggerated estimates of deviant behaviors of youth are strongly cultivated in those exposed over time to television talk shows (Davis & Mares, 1998; Woo & Dominick, 2001, 2003). Another common theme on talk shows is families in crisis who are in need of collective support (Glynn, Huge,
Reineke, Hardy, & Shanahan, 2007). In response to this dominant theme, heavy viewers of talk shows are more supportive of activist or interventionist governmental policies that support families than light viewers.

A more recent popular genre that has gained influence in America is Korean drama. These dramas consistently depict independent women putting their career first and choosing to have children later in life (Jin & Jeong, 2010). Jin and Jeong found that heavy viewers of Korean dramas overestimate the number of married couples that are without or have fewer children. In addition, the majority of the characters in Korean dramas live luxurious, upper-class lives, leading to the belief among Vietnamese women that South Korean men are affluent and desirable (Vu & Lee, 2013).

Evidence of second-order cultivation effects can also be seen in the romance genre. Segrin and Nabi (2002) found that those who watch romantic programs express more idealistic and romanticized views; they wish to get married at a younger age and believe that “marriage will last forever.” Dating shows also cultivate stereotypes about young men, such as “men are sex-driven,” “dating is a game,” and “women are sex objects” (Ferris, Smith, Greenberg, & Smith, 2007). Exposure to makeover programs was negatively related to self-esteem and positively related to beliefs about perfectionism and body dissatisfaction (Kubic & Chory, 2007).

A large portion of television programs addresses medical issues, including broadcast news, talk shows, and medical dramas. The medical drama genre consistently draws attention to health issues, putting into the spotlight at least one
health condition or disorder in every episode. Medical dramas are in a unique position to convey messages about health to their viewers. Because this investigation is interested in the ways individuals acquire health information and how television affects their beliefs about health, its focus is on the cultivation effects of the medical drama genre. Previous research has demonstrated the effects of medical drama exposure on health attitudes and behaviors. Exposure to themes of hypertension and healthy eating habits in medical dramas resulted in increased knowledge of the 5-A-Day campaign, which targeted eating more fruits and vegetables (Valente et al., 2007). After viewing storylines about breast cancer awareness in television shows, viewers also reported increased knowledge of the breast cancer susceptibility (BRCA) gene and its relation to breast cancer (Hether, Huang, Beck, Murphy, & Valente, 2008). Medical drama exposure can also shift attitudes about medical procedures. Viewing narratives on breast cancer through television programs corresponded to changes in attitudes toward mastectomies (Hether et al., 2008). The positive representation of mastectomies in both shows translated into positive attitudes toward its use in treating breast cancer. Despite these findings, more research must be done to examine the effects of common themes in medical dramas on two specific health beliefs: those about health risks and about doctors. Before predicting the cultivation effects of medical dramas on viewers’ health beliefs, however, research on how health conditions and doctors are represented on medical dramas must first be examined.
Themes Represented in Television Medical Dramas

In the history of American television, there have been many television shows dramas dedicated to medical themes (Pfau et al., 1995; Chory-Assad & Tamborini, 2001). These programs have culminated into what is now called the medical drama genre. Two themes are depicted with relative consistency in the medical drama genre: the overrepresentation of illnesses and the exaggerated character of doctors and their abilities.

Research has focused on the messages related to illness and disease in the medical drama genre. A content analysis of 127 episodes of two medical dramas, Grey’s Anatomy and ER, demonstrated that over half the medical conditions presented were injuries caused by an external source (e.g., transportation accidents, falls, violence); cardiovascular disease and cancer were other common medical conditions depicted (Ye & Ward, 2010). Medical dramas, such as ER, Chicago Hope, and Grey’s Anatomy, overrepresented diagnoses of graphic illnesses, such as mood disorders and bodily injuries (Hetsroni, 2009). Mortality rates on television were also exaggerated, with the survival rate of television patients being almost nine times lower than real-world hospital patients. The overrepresentation of serious medical conditions and high mortality rate makes it possible to detect cultivation effects because these estimates deviate from reality and potentially influence viewers’ perceptions of personal health risk.
Perceptions of Doctors

The second theme represented on medical dramas is the character and efficacy of doctors. Beyond the depiction of general health risk, medical dramas play a role in shaping viewers’ perceptions of doctors. Pfau (1995) found that exposure to primetime medical fictional series was associated with positive perceptions of doctors as competent, physically attractive, powerful, and effective communicators (e.g., sociability, composure, regard for others). Similarly, a content analysis of 229 fictional television physicians across medical dramas found that their competence, ethical character, regard for others, and power did not vary significantly across the shows despite large variability in their physical attractiveness (Chory-Assad & Tamborini, 2001).

Although television portrayals have transitioned over the years to reflect potential weaknesses and struggles of doctors, the overall representation of doctors remains positive. Foss (2011) analyzed the prevalence of medical errors portrayed across medical dramas aired from 1994 to 2007 and found that mistakes were rare and doctors often behaved responsibly. In instances when errors occurred, they were attributed to a healthcare professional’s inexperience, institutional flaws, or temporary personal problems that would not recur. Across the four shows examined, doctors often diagnosed medical conditions unknown to other healthcare professionals and performed risky experimental medical procedures others would not attempt. If a doctor chose not to treat a medical condition, it meant that no other doctor was capable of curing the patient (Foss, 2011). Of the incidences of death
shown in medical dramas, most are not characterized as the doctor’s fault. Accordingly, doctors are characterized as infallible heroes of society.

Medical dramas have also been linked specifically to perceptions of doctors’ courageousness. Quick (2009) examined the effects of viewing *Grey’s Anatomy* on viewers’ perceptions of doctors and overall patient satisfaction. The more an individual watched *Grey’s Anatomy*, the higher their perception of the realism and credibility of the show. Perceptions of doctors as courageous characters grew in magnitude as credibility of the show increased in the eyes of the viewer. The study also found that individuals who perceived doctors as courageous following the exposure had higher overall satisfaction with doctors. This consistent positive representation of doctors supports the assertion that medical dramas include overarching themes involving perceptions of doctors (Chory-Assad & Tamborini, 2001; Foss, 2011; Pfau, Mullen, & Garrow, 1995; Quick, 2009). These constructions of doctors are part of the mainstream of the medical drama genre.

Most research has focused on how specific medical drama programs or episodes portray health risks and characterized doctors. However, genre-specific cultivation theory proposes that there are overarching themes or tenets portrayed across episodes and different programs within the genre that affect viewers’ knowledge and beliefs. Although plotlines and character development in medical dramas differ, it is predicted that shows falling into the medical drama genre present the same dominant messages about health risks and doctors.
Hypotheses

Although evidence reliably supports the existence of cultivation effects from television viewing, further research should explore the specific influence of the medical drama genre on real-world perceptions. Cultivation describes the process of generating knowledge and belief outcomes from long-term exposure to a homogenous set of messages broadcasted through media. Following the framework of genre-specific cultivation, long-term exposure to consistent messages conveyed in medical dramas is likely to cultivate health-related beliefs in viewers. Many individual-level factors can influence perceived health risk. Having family or friends with a disease, self-reported health, perceived ambiguity about health prevention recommendations, and worry about disease collectively predict stronger perceptions of risk (Han, Moser, Klein, 2006; Hay, Coups, Ford, 2006; McQueen, Vernon, Meissner, Rakowski, 2008; Montgomery, Erblich, DiLorenzo, Bovjerg, 2003). In addition to these individual-level factors, it is possible that media, specifically television medical dramas, can affect one’s perception of health risk given the themes presented.

Much has been done to catalog the contents of medical drama television programs, yet it remains unclear how these portrayals relate to real-world perceptions about health. Various studies demonstrate that heavy television viewing can increase individuals’ perceived health risk (e.g., Han et al., 2007; Hetsroni & Tukachinsky, 2006; Niederdeppe et al., 2010; Ye, 2010). With the focus on dramatic, graphic diseases and higher television mortality rates specific to the medical drama genre, it is possible that viewers hold inaccurate estimations of the
prevalence of serious health conditions in the real world. Therefore, it is predicted that there will be a positive association between exposure to medical drama television programs and perceived risks of developing serious health conditions.

H1: There will be a positive association between exposure to medical dramas and participants’ perceptions of health risk.

A second common theme emerging from content analyses of medical dramas is the conceptual construction of doctors as omnipotent, infallible healers who exhaust all possibilities to treat their patients (Chory-Assad & Tamborini, 2001; Foss, 2011; Pfau et al., 1995; Quick, 2009). These dramas frequently show doctors treating health conditions that no other doctor could, at times with novel or experimental treatments, thereby reinforcing the idea that doctors have high response efficacy for various health conditions (Foss, 2011). Although some evidence shows that television portrayals of doctors have evolved to include negative characteristics, the overall image of doctors remains positive (Chory-Assad & Tamborini, 2001; Foss, 2011). The prototypical images of doctors displayed on medical dramas could be viewed as representative depictions of real-world physicians. Exposure to consistent television messages over time could lead viewers to attribute characteristics of television doctors to their real-world doctors. Therefore, this study predicts that higher exposure to medical dramas will be related to viewing doctors more positively across seven different characteristics used in previous content analyses (Pfau et al., 1995, Chory-Assad & Tamborini, 2001, Chory-Assad & Tamborini, 2003). Additionally, it is expected that higher exposure to medical dramas will be associated with stronger beliefs that doctors are likely to respond successfully to generalized medical issues.
H2: There will be a positive association between exposure to medical dramas and participants' perceptions of doctors as having higher (a) competence, (b) ethical character, (c) regard for others, (d) physical attractiveness, (e) composure, (f) sociability, and (g) power.

H3: There will be a positive association between exposure to medical dramas and participants' perceptions of doctors' response efficacy.
CHAPTER 2

METHODS

Participants

Data for this study were collected over a five-week period using an experimental design. In total, 140 undergraduate college students (50 males, 90 females) at the University of Hawai‘i at Mānoa participated in this study. Participants were between 18 and 29 years old \( (M = 20.0, SD = 2.37) \) and came from diverse ethnic backgrounds, including Asian (63.8%), Hawaiian or Pacific Islander (9.2%), Hispanic (12.1%), Mixed Race (2.8%), African American (0.7%), Caucasian (0.7%). The remaining 9.9% of the sample selected an “Other” category when asked their ethnicity.

Participants were asked about their media consumption and health practices in addition to the demographic questions. Participants were asked about their exposure to television viewing each week. Most of the participants (41.8%) said they spent approximately three to five hours a week watching television programs. Others reported 1-2 hours per week (21.3%), 6-9 hours per week (19.1%), 10 or more hours per week (9.2%), and a small proportion (7.8%) reported never watching television. A question also probed whether participants had previously viewed medical dramas. The large majority of participants (70.2%) had not watched a medical drama in the past. Participants were asked whether they visited a doctor in the past six months, with 74.4% of participants reported seeing a doctor at least once in the past six months.
Procedure

Students from undergraduate courses in the Department of Communicology were recruited through a research website. They received extra credit or research credit for their participation. After signaling their willingness to participate in the study, participants were randomly assigned to one of five conditions: zero exposure, one-episode exposure, two-episode exposure, three-episode exposure, or four-episode exposure. All participants read the informed consent form (see Appendix A) and must have agreed to its terms before beginning the study.

Participants in the zero-exposure condition were asked to complete a questionnaire (see Appendix B) that assessed their health beliefs from the first week of the study. The questionnaire assessed participants’ perceptions of health risk, perceptions of doctors’ character, and perceptions of doctors’ response efficacy toward disease. In the four groups exposed to the medical drama episodes, measures were taken a week after participants’ final exposure. For example, measures were taken in Week 2 for participants in the one-exposure condition. The specific episode for a given week was embedded in an Internet-based survey. Participants must have watched the video before completing each wave of the study.

In the one-episode exposure condition, participants viewed a full-length episode of a medical drama in the first week of the study and then completed the same questionnaire as zero-exposure participants assessing health beliefs a week later. In the two-episode exposure condition, participants watched two episodes of a medical drama for the first two weeks and completed the questionnaire in the third week.

Participants in the three-episode exposure condition watched three different
episodes of a medical drama and completed the questionnaire in the fourth week. Finally, participants in the four-episode exposure condition watched four different episodes of a medical drama for four weeks and completed the questionnaire in the fifth week. The week delay between the final exposure and questionnaire was included to ensure that the effects could not be explained by priming.

The five condition design was used to study the relationship between exposure to medical dramas and acquisition of health beliefs and attitudes over time. As Gerbner (1980) theorized, cultivation effects cannot mature after one sitting of television viewing. Previous studies of medical dramas have demonstrated short-term priming effects after watching a single episode of one medical drama (e.g., Knapp Whittier et al., 2005). This study, in contrast, addresses cumulative, long-term effects by exposing participants to multiple episodes of medical dramas spaced over a month-long period.

**Stimulus Materials**

Medical dramas are distinct from other shows that include medical content because they consistently overrepresent the prevalence of rare or severe illnesses and often present exaggerated characteristics and abilities of doctors (Foss, 2011; Hetsroni, 2009; Ye & Ward, 2010). Participants in each exposure conditions were split equally into three groups and shown one of three medical dramas: *Grey’s Anatomy*, *Royal Pains*, and *Chicago Hope*. Three medical dramas of this study were selected because they involve fictional storylines where doctors treat patients’ health conditions. *Grey’s Anatomy* takes place in the emergency room and follows the experiences of a team of surgical interns. *Chicago Hope* takes place in a hospital...
and focuses on surgical doctors and their interactions with patients, hospital administrators, and staff. *Royal Pains* documents the life of Dr. Hank Lawson and his medical assistant as they see patients around the Hamptons. Dr. Lawson practices concierge medicine, which requires him to see patients from any location convenient to them. This drama is therefore not situated in a conventional hospital or office.

Four episodes from each medical drama were selected. Episodes were chosen from the first few seasons rather than later in the show. Starting from the beginning of each series prevents participants from being distracted by ambiguous plotlines or character developments not explained mid-series. Each episode was prescreened to ensure that it involved a doctor treating a patient for a medical condition. Episodes were also eliminated if they focused too much attention on the personal lives of doctors outside of the medical environment.

The majority of research on belief and attitude change from medical dramas focuses on one medical condition in very specific narratives (Hether et al., 2008; Knapp-Whittier et al., 2005; Valente et al., 2007). This study, however, looked at generalized health issues given the axiom that overarching themes of the medical drama genre exist. Previous studies have examined *Grey’s Anatomy* and *Chicago Hope* as part of the medical drama genre (Foss, 2011; Quick, 2009). *Royal Pains* is a newer medical drama, which began in 2009, that contains the same dominant themes of the medical drama genre (e.g., overrepresentation of illness, exaggerated characters and abilities of doctors). Including a newer medical drama aside the
older dramas also tests the genre-specific cultivation assumption that an entire genre can convey consistent central messages.

**Instrumentation**

**Perceptions of health risk.** Participants were asked to rate the likelihood that they will develop five specific health conditions (i.e., cancer, heart disease, heart attack, diabetes, and stroke) or be involved in a serious accident in the future. These diseases were taken from the Center for Disease Control and Prevention (CDC) report on the leading causes of death for 2010 (National Center for Health Statistics, 2013). Scale items were adapted from a measure of health risk created by McQueen et al. (2008). An example item from this scale is “How likely do you think it is that you will develop [health condition] in the future?” The responses ranged from 1 to 7, with “1” indicating that respondents did not feel at all likely they would develop the health condition and “7” indicating they felt it was very likely to develop the health condition in the future. The health risk scale met conventional standards for reliability (Cronbach’s $\alpha = .93$).

**Perceptions of doctors’ character.** Items assessing the character of doctors were adapted from a measure initially developed by Pfau et al. (1995) and later modified by Chory-Assad and Tamborini (2003). The measure consists of 24 items rated on a 7-point semantic differential scale to evaluate doctors’ competence, ethical character, regard for others, physical attractiveness, composure, sociability, and power. For example, participants were asked to rate their perceptions of doctors on a scale of 1 (unintelligent) to 7 (intelligent). All seven subscales, including
competence ($\alpha = .85$), ethical character ($\alpha = .93$), regard for others ($\alpha = .91$), physical attractiveness ($\alpha = .90$), composure ($\alpha = .93$), sociability ($\alpha = .89$), and power ($\alpha = .74$), met the conventional standard for reliability.

**Perceptions of doctors' response efficacy.** Four items were used to assess the belief that doctors are capable of treating, curing, and preventing health conditions. Three items asked, “In general, physicians are capable of [treating/curing/preventing] health conditions of patients,” with response options ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The last item asked, “In general, doctors improve the health of their patients,” with response options ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Across the five exposure groups, the efficacy scale met the conventional standard for scale reliability ($\alpha = .89$).

**Demographics.** Participants were also asked for general information about their gender, age, and ethnicity. Direct experience with doctors was also measured by asking participants to report the number of times in the last six months preceding the study that they had been seen by a doctor (Chory-Assad & Tamborini, 2003). To assess medical drama and television consumption, participants were asked to list any medical drama shows they watched in the past and report how many hours per week they spent watching television.
CHAPTER 3

RESULTS

Three different medical dramas were used to increase the generalizability of the findings. Because each show focused on different contexts of the medical field, it was necessary to examine whether the three shows produced equivalent scores on the dependent measures before collapsing them together by exposure condition. A series of one-way analyses of variance (ANOVAs) was conducted to examine whether there were differences in the medical dramas subjects viewed. In the one-way ANOVAs, the medical drama watched was treated as a three-level categorical independent variable and the dependent variables were the health-related perceptions. The sample was stratified by the experimental conditions (i.e., the number of times each group was exposed to the medical drama) and the ANOVAs were conducted on them independently. In the one-exposure condition, no significant differences were found across the three medical shows for the first-order effect of health risk, $F(2, 23) = 1.36, p = .28$. For second-order effects, including competence, $F(2, 23) = 0.78, p = .47$; ethical character, $F(2, 23) = 0.22, p = .81$; regard for others, $F(2, 23) = 0.14, p = .87$; physical attractiveness, $F(2, 23) = 2.80, p = .08$; composure, $F(2, 23) = 0.42, p = .66$; sociability, $F(2, 23) = 0.61, p = .55$; power, $F(2, 23) = 1.97, p = .16$; and efficacy, $F(2, 23) = 0.36, p = .70$, no significant differences were uncovered across the three medical shows.

The one-way ANOVAs for the two-exposure condition revealed no significant differences among the groups exposed to the three medical dramas in first-order effects of health risk, $F(2, 26) = 0.74, p = .49$. Further, no significant differences were
found among the three medical shows for second-order effects on perceptions of doctors, including competence, $F(2, 26) = 0.86, p = .43$, ethical character, $F(2, 26) = 0.15, p = .86$, regard for others, $F(2, 26) = 0.15, p = .87$, physical attractiveness, $F(2, 26) = 0.57, p = .57$, composure, $F(2, 26) = 0.15, p = .87$, sociability, $F(2, 26) = 2.48, p = .10$, and power, $F(2, 26) = 1.99, p = .16$. The three dramas also did not lead to any differences in perceptions of doctors’ efficacy, $F(2, 26) = 1.51, p = .24$.

The same series of one-way ANOVAs for the three-exposure condition also revealed no significant differences among the medical drama watched for health risk, $F(2, 20) = 0.28, p = .76$. Additionally, no differences were found across the variables measuring attitudes toward doctors and efficacy ratings, including ethical character, $F(2, 20) = 0.30, p = .75$, regard for others, $F(2, 20) = 0.18, p = .84$, physical attractiveness, $F(2, 20) = 1.24, p = .31$, composure, $F(2, 20) = 0.37, p = .70$, sociability, $F(2, 20) = 0.03, p = .97$, power, $F(2, 20) = 0.01, p = .99$, and efficacy, $F(2, 20) = 1.48, p = .25$, with one exception. In this condition, significant differences across the three shows were found on doctors’ competence, $F(2, 20) = 3.73, p = .04$.

Lastly, all one-way ANOVAs for the four-exposure condition that tested differences across the medical drama were nonsignificant for health-related variables. For health risk, the ANOVA revealed no significant differences among the three medical shows, $F(2, 29) = 0.96, p = .40$. Additionally, no significant differences were discovered among the three shows for responses on doctors’ competence, $F(2, 29) = 2.24, p = .12$, ethical character, $F(2, 29) = 0.88, p = .43$, regard for others, $F(2, 29) = 0.75, p = .48$, physical attractiveness, $F(2, 29) = 1.67, p = .21$, composure, $F(2, 29) = 0.94, p = .40$, sociability, $F(2, 29) = 1.48, p = .40$, power, $F(2, 29) = 1.45, p = .25$, and
and efficacy, \( F(2, 29) = 0.31, p = .74 \). The results of this initial set of analyses provided confidence that the three medical drama categories could be collapsed by exposure condition to test genre-specific, not show-specific, cultivation effects.

**Hypothesis 1: Exposure and Health Risk**

Hypothesis 1 predicted a positive association between exposure to medical dramas and participants’ perceptions of health risk. This hypothesis is derived from the application of cultivation theory to medical dramas; health perceptions rise on account of cumulative exposure to medical dramas. The associative relationship between exposure and health-relevant beliefs and attitudes is best assessed through Pearson’s \( r \) correlation coefficient. Correlation analyses assess the linear bivariate relationship in an easily interpretable manner; it provides a metric for determining the direction and magnitude of the effects. A test for the linearity across the five conditions could also be assessed through a one-way ANOVA, but it yields results identical to the correlation analyses.

The exposure variable represented the number of episodes of a medical drama each participant viewed. The zero-exposure group (i.e., exposed to no medical drama episodes) was coded as zero, the one-exposure group was coded as one, the two-exposure group was coded as two, the three-exposure group was coded as three, and the four-exposure group was coded as four. The results demonstrate that the association between exposure and perceptions of health risk, or the likelihood that participants feel they would develop specific health conditions (e.g., cancer, diabetes, heart disease) in the future, was nonsignificant, \( r(138) = .07, p = .40 \). Therefore, Hypothesis 1 was not supported by the data.
Hypothesis 2: Exposure and Perceptions of Doctors’ Character

Hypothesis 2 predicted a positive association between exposure to medical dramas and perceptions of doctors’ (a) competence, (b) ethical character, (c) regard for others, (d) physical attractiveness, (e) composure, (f) sociability, and (g) power. These seven characteristics were derived from a content analysis of Pfau et al. (1995). Seven bivariate correlations were estimated between medical drama exposure and the seven perceptions of doctors. Hypothesis 2 received mixed support. The correlation of exposure and doctors’ physical attractiveness was significant, $r(138) = .22, p < .05$; therefore, increasing exposure to medical dramas was related to higher ratings of doctors’ physical attractiveness. The correlation of exposure to medical dramas and composure was significant yet in the opposite direction as hypothesized, $r(138) = -.23, p < .01$. As exposure to medical dramas increased, doctors were rated as having less composure. The correlations between competence, $r(138) = -.04, p = .68$, ethical character, $r(138) = -.11, p = .18$, regard for others, $r(138) = -.08, p = .34$, sociability, $r(138) = -.06, p = .47$, and power, $r(138) = -.15, p = .09$, and exposure to medical dramas were nonsignificant.

Hypothesis 3: Exposure and Perceptions of Doctors’ Response Efficacy

Hypothesis 3 predicted that there would be a positive association between exposure to medical dramas and participants’ perceptions of doctors’ response efficacy. The correlation between exposure and perceptions of response efficacy was nonsignificant, $r(138) = .13, p = .12$. Therefore, Hypothesis 3 was not supported. Although the correlation fell short of statistical significance, the relationship
between exposure to medical dramas and doctors’ response efficacy was positive as predicted.
CHAPTER 4

DISCUSSION

Medical dramas are a popular genre of television often steeped in real-world situations. These real-world scenarios can lead viewers to adopt what they see on television in their beliefs and attitudes about the world outside of television. It is therefore important to determine the effects of medical dramas on viewers’ attitude and belief systems. This study focused on whether televisions shows with narratives centered on health issues have practical import on one’s personal health. More specifically, this study was aimed at whether medical dramas influence viewers’ perceptions of personal health risk and examined how medical dramas affect viewers’ perceptions of doctors’ character and response efficacy toward disease. Cultivation theory was used as a framework for organizing the hypothesized effects of medical dramas given interest in their influence on beliefs and attitudes in long-term cumulative exposure.

Two findings of this investigation point to the existence of genre-specific cultivation effects. Repeated exposure to medical dramas led to higher perceptions of doctors as physically attractive. Although previous research on the relationship between perceptions of doctors’ physical attractiveness and exposure to medical dramas has been mixed (e.g., Chory-Assad & Tamborini, 2001, 2003), this study provides evidence that physicians are perceived as more attractive when television viewers are exposed to the actors of medical dramas on television. It may be that actors paid to play the roles of physicians are often selected not because they mirror the average person in the population but because they are physically appealing.
Research on television portrayals suggests that people cast in television roles tend to be more Caucasian and more attractive than the average person in the population (Seggar & Wheeler, 1973). The increased physical attractiveness of doctors may also be explained by the familiarity effect on attraction (Zajonc, 1968, 2001), which states that repeated exposure to a stimulus leads to increased attraction to that stimulus. In this study, repeated exposure to the same doctors in the medical drama shows may have increased liking and attraction to the doctors, resulting in higher perceptions of doctors as physically attractive.

The present study also found that a negative characteristic, namely low composure, can be attributed to doctors following consistent exposure to medical dramas. Composure measured the degree to which doctors appear poised, relaxed, and calm (Chory-Assad & Tamborini, 2003). The three medical dramas used in this study often portrayed emergency situations in which doctors needed to respond quickly to patients’ health conditions. The rushed urgent care that doctors must provide may have contributed to the perception that doctors are less calm and relaxed. Taken together, these results suggest the medical drama genre consistently portrays doctors as attractive characters who have little composure and these portrayals color attitudes viewers have about doctors. These results parallel the mixed findings of other research that studied the same set of doctor characteristics in relation to medical drama exposure. Chory-Assad and Tamborini (2003) found significant negative relationships between exposure and perceptions of doctors’ ethical character and regard for others but failed to find any associations between exposure and competence, sociability, and power.
Although this study found that exposure to medical dramas changed perceptions of doctors’ physical attractiveness and composure, it failed to find support for the relationship between exposure and perceptions of health risk. This study also found that exposure to medical dramas did not alter perceptions of doctors’ competence, ethical character, regard for others, sociability, and power. Lastly, no significant relationship was found between exposure and perceptions of doctors’ response efficacy toward disease.

The nonsignificant effect of medical dramas on perceptions of health risk may be explained by a psychological disconnect between evaluations of others and themselves. It is possible that participants’ general perceptions of health risk for others were increased by exposure to medical dramas but estimations of personal health risk remained unaffected. Weinstein (1982) demonstrated that college-aged students perceived less personal health risk in comparison to their peers, which demonstrates their resilience to health problems. Therefore, college students may see themselves as less susceptible to health risks than the average person. Because the posttest assessed perceptions of personal health risk rather than beliefs about risks of the average person, responses may not have appropriately evaluated the influence of medical dramas on generalized health beliefs. Participants’ ages could be another factor that explains the null findings between exposure and health-risk perceptions. The younger ages of the college student population may contribute to the overall low estimations of personal health risk. College-aged individuals believe they are invulnerable to major health problems because they feel invincible to serious medical conditions (Mickler, 1993; Weinstein, 1984). The general
assumption among younger adults may be that serious health issues catalogued in
the health risk scale, such as cancer, heart disease, and diabetes, are only applicable
to older individuals. Even though 74.4% of participants reported seeing a doctor
within the last six months, it is most likely that participants were not seen for any
serious health condition. Therefore, even a recent visit to the doctor may have left
perceptions of health risk unaffected.

An explanation for the nonsignificant relationship between exposure and
doctors’ characteristics can be ascertained by considering the mental models
approach to cultivation effects. The mental models approach suggests that
individuals are passive consumers of television and construct mental models from
television scenarios that may influence future decision making and social judgments
(Roskos-Ewoldsen, Davies, & Roskos-Ewoldsen, 2004). As television exposure
accumulates, television representations and an individual’s reality become
intertwined as the original source of information becomes indistinguishable or
forgotten (Mares, 1996). Therefore, as medical drama exposure increases,
individuals may forget whether their health information originated from real-world
experiences or from medical drama television programs.

Young adults are likely to have well-formed mental representations of
doctors given that they visit them biannually, annually, or biennially. The large
majority of participants reported seeing a doctor at least once within the past six
months. The recency of interacting with a primary healthcare physician may have
constructed a readily available referent for these individuals when responding to
scales about doctors’ characteristics. Further, it is possible that participants still
visit their pediatricians or family doctors. Therefore, participants might have concrete mental models of their primary care physicians formed and strengthened over 18 years of real-world experience. Although mental models of doctors may have been formed during exposure to medical dramas, these mental models were perhaps not accessible or salient when participants responded to questions that surveyed their attitudes toward doctors “in general.” Therefore, the television mental models formed over a maximum of four weeks may not have overridden existing assessments of real-world doctors developed over many years.

The perceived closeness explanation of cultivation effects predicts that cultivation effects are weak when there is discordance between the images on television and viewer’s real-world experiences (Bilandzic, 2006). Therefore, cultivation effects may have been attenuated when the mental representation of one’s physician did not conform to the archetypal doctor in the television show. Results may have been more consistent with cultivation theory if data were collected from a sample of individuals who had not recently seen a doctor.

What further complicates the results of this study is that participants may have already had strongly established mental models of television doctors. In this study, 29.8% of the sample had previously watched a medical drama in the past. People who have had previous exposure to medical dramas may already have had preexisting television mental models toward medical doctors, which would not change perceptions of doctors or health risk even with greater exposure.

“Transportation” can also explain the lack of significant findings. Participants may not have become immersed in the television narrative because the media failed
to transport them into the storyline. Transportation is a state in which individuals become so focused on the storyline of a television show that they temporarily forget about the real world (Green & Brock, 2002). Transportation has shown to be a powerful predictor of knowledge, attitude, and behavior change following exposure to media narratives (Tukachinsky & Tokunaga, 2013). One element necessary for transportation is that viewers can easily picture the narrative occurring in real life (Green, Brock, & Kaufman, 2004). Therefore, any artifact of the study that called attention to the line between fantasy and reality could have reduced the chances that participants were transported into the narratives. For example, if participants evaluated the episodes as outdated, given that the episodes of Chicago Hope were filmed in 1994, it may have sensitized them to the distinction between real-world doctors and television doctors, thus reducing transportation.

Lastly, the hypotheses were based on the assumption that the degree of cultivation effects (i.e., belief and attitude acquisition) increases proportionally to the number of medical drama episodes participants viewed. That is, the exposure to medical drama episodes variable was assumed to be a continuous, interval level measure. This assumption, however, may be invalid. It may be worthwhile to rethink whether exposure to a television show is an interval-level variable or should be considered an ordinal variable given that viewers can begin to contextualize characters and learn plotlines more effectively over time. In other words, the assumption that the interval between 1-2 episodes may not be the not same as the interval between 3-4 episodes might need to be revisited. The large majority of research on cultivation effects, mental models, and scripting, compares a group not
exposed to media with a group exposed to a media stimulus to observe cultivation effects (e.g., Knapp-Whittier et al., 2005). Here, an attempt was made to go beyond the “ever-never” dichotomy and examine over time whether cumulative exposure to a television show produces belief and attitude change.

Theoretical and Practical Implications

The findings of this study carry important implications for cultivation theory. Cultivation theory is based on two key premises: (a) consistent, relatively homogenous messages pervade episodes of a specific genre and those who view episodes from this genre have some kind of consistent interaction with these dominant messages, and (b) over time, consistent interactions with these messages change viewers’ outlook and move their beliefs or attitudes in line with the images shown on television. The series of one-way ANOVAs demonstrate that no matter which of the three shows participants watched, participants had generally similar views toward health risk, perceptions of doctors, and doctors’ efficacy. In addition, the data show partial support for attitudes about doctors’ character but not for beliefs about health risk or doctors’ efficacy. Shrum (2009) addressed why some cultivation studies find support for the acquisition of second-order attitudes but not first-order beliefs. He reasoned that participants in cultivation experiments who pay close attention to the narrative, because they are concerned about being asked questions about the study, make a clearer distinction between the fantasy of the television world and reality. This distinction reduces first-order cultivation effects but maintains second-order effects.
This study offers methodological contribution to cultivation research. Few studies of cultivation theory, with some exceptions (e.g., O'Bryant & Corder-Bolz, 1978), have tested the contribution of multiple episodes to first or second-order outcomes in an experimental design. Cultivation research has relied heavily on self-report data of television consumption and other proposed cultivated beliefs and attitudes (e.g., Do & Kincaid, 2006; Hether et al., 2008), which is a problem given that people are often inaccurate in estimating their own media consumption. In this controlled experimental design, media exposure was regulated such that participants were not required to estimate their media consumption. Further, studies of cultivation effects using experimental designs have rarely used more than one episode of a television show to represent exposure. This investigation accordingly provided a rigorous test of cultivation theory rarely undertaken in the literature.

Practical implications for the medical field can be ascertained by the findings of this study. The findings demonstrate that what individuals watch on television can affect some of their attitudes toward doctors. This study demonstrated that cumulative exposure to medical dramas resulted in lower estimates of doctors’ composure. In line with other research (Chory-Assad & Tamborini, 2003), heavy viewers of medical dramas come to expect their doctors to be nervous, tense, and anxious. Low perceptions of doctors’ composure may lead some people to seek nontraditional sources of health information, such as consulting a friend or self-diagnosing an ailment using information available on the Internet. However, it may be impossible for individuals to avoid seeing a doctor at some point. During doctor
visits, perceptions of doctors’ low composure may contribute to diminishing levels of credibility. McCroskey, Scott, and Young (1971) found that composure was one of five dimensions of credibility. Lower evaluations of composure may affect credibility judgments overall, influencing other aspects of credibility including trust and expertise. Low trust of doctors may lead patients to refute or disregard medical advice. Further, the low trust and credibility might result in patients’ anxiety about putting their health in doctors’ hands, leading to heightened worry and lower perceptions of efficacy to overcome disease or illness.

**Limitations**

This study is not without its limitations. First, the stimulus was administered online to provide a naturalistic setting, enabling participants to view the episode at a time and location in which they would normally watch television. However, without the control of a lab setting, there was no way to guarantee that participants actually watched the episode in its entirety. Failing to watch the medical drama would make it impossible for health beliefs and attitudes to change from exposure. In addition, Richins (2004) found that those who paid more attention and were more motivated to cognitively elaborate when watching television experienced significantly stronger cultivation effects. Giving the participants freedom to view the medical drama under their own terms invited substantial variance in how much attention was paid to the medical drama episodes, which could have potentially influenced the media effects.

Second, the instrumentation used to measure perceptions of doctors may need to be reconsidered. The directions for the scales that evaluate doctors’
character asked participants to evaluate doctors “in general.” The lack of specificity in identifying a referent may have led to differences in interpretation of these instructions. It may be that some answered these items using their real-world doctors as referents, whereas others may have responded to these items evaluating doctors in the medical drama. Differences in who participants chose as the referent to this question could have led to a large variations in responses.

Third, the lack of significant cultivation effects may be attributed to the inadvertent priming of source information. Morgan and Shanahan (1996) found that many studies failed to uncover cultivation effects when subjects were told the investigation they are participating in is a study of television viewing or asked to provide estimates of their television viewing habits at the outset. Participants aware that the study relates to television viewing make a more concrete distinction between reality and fantasy. By highlighting the purpose of the current study to participants, it may have sensitized them to the distinction between the television world and the real world. The mental models established through exposure to the medical drama may have been labeled as fantasy irrelevant to real-world judgments of doctors.

**Future Directions of Research**

Future research should examine variables that moderate the relationship between exposure and health beliefs. It may be too simplistic to view exposure and health beliefs without considering other variables that may affect the magnitude and direction of this relationship. For example, Lau and Ware (1981) developed a health-specific locus of control scale and found that people who believed in self-
control over health, compared to the role of chance, saw doctors as having higher efficacy. Individuals with an internal locus of control, who believe that health outcomes could be controlled, tend to believe that they themselves and their physicians are capable of achieving desired health outcomes (Lau & Ware, 1981). It is possible that locus of control moderates the relationship between exposure to medical dramas and health beliefs regarding doctors. Among people with high internal health locus of control, no relationship exists between exposure and health outcomes because those with high internal locus of control may be less likely to believe the messages about health on television. The skepticism toward health-related messages on television stem from the belief that viewers and their real-world doctor control personal health outcomes. In contrast, people with a high external health locus of control, who believe their health outcomes are influenced by fate, luck, or chance, may be more open to taking information from the television and applying it to their own lives. Therefore, a positive relationship between exposure and health outcomes emerges among those high in external locus of control.

Another possible moderator in the relationship between television exposure and health beliefs is the formation of parasocial relationships with television characters. Parasocial relationships are formed when viewers perceive friendliness and companionship with television characters (Levy, 1979). The emergence of a parasocial relationship can encourage perceived closeness with the narrative, leading to increased cultivation effects. Individuals who form parasocial relationships with medical drama characters and develop liking for these characters
may transform these positive perceptions into enhanced evaluations of doctor characteristics and efficacy. If individuals do not form parasocial relationships with medical drama personas, they may experience no belief or attitude change from exposure.

Future studies should also examine the potential influence of perceived realism on cultivation effects, or the belief that television portrayals accurately reflect reality. Some individuals may be more likely to perceive that television is realistic, thus leading to stronger cultivation effects (Shapiro & Lang, 1991). Measures of perceived realism of medical dramas may qualify some of the effects that were not seen in this study. Due to time constraints, this study only observed exposure and health beliefs in a five-week span. However, future research may employ a longer data collection period, such as an entire season of a medical drama, giving participants a longer time period to become immersed in the television narrative and experience cultivation effects.

This study examined the influence of medical drama television shows on viewers’ health beliefs and attitudes. However, researchers must remember that these shows are essentially dramas that include medical themes. Actual health issues may be less emphasized in medical drama plotlines, which instead focus more on the lives of the doctors. Future research should examine other genres that may potentially include more realistic health content.

**Conclusion**

This study was an application of cultivation theory to the medical drama genre, representing one attempt to better understand the influence of these shows
on personal perceptions of health. Research is still needed to examine the full effects of this genre using other theoretical frameworks, such as scripting or priming. Overall, continued research is necessary to understand the complexities of attitude and belief acquisition from watching television shows.
Table 1.

**Zero-Order Correlation Matrix of All Variables.**

| Variable                  | M   | SD  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   |
|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. Number of episodes     |     |     |     |     |     |     |     |     |     |     |     | --  |
| 2. Health risk            | 3.41| 1.35| .07 | --  |     |     |     |     |     |     |     |     |
| 3. Competence             | 5.92| 1.00| -.04| -.02| --  |     |     |     |     |     |     |     |
| 4. Ethical character      | 5.59| 0.94| -.11| -.05| .74**| --  |     |     |     |     |     |     |
| 5. Regard for others      | 5.54| 1.04| -.08| -.02| .56**| .76**| --  |     |     |     |     |     |
| 6. Physical attractiveness| 4.34| 1.12| .22*| .05 | .12 | .13 | .25**| --  |     |     |     |     |
| 7. Composure              | 5.50| 1.14| -.23**| -.12| .52**| .65**| .64**| .07 | --  |     |     |     |
| 8. Sociability            | 5.52| 1.04| -.06| -.03| .61**| .77**| .78**| .25**| .73**| --  |     |     |
| 9. Power                  | 5.66| 0.89| -.15| -.02| .59**| .54**| .45**| .20 | .49**| .46**| --  |     |
| 10. Efficacy              | 5.15| 1.09| .13 | -.08| .55**| .58**| .42**| .16 | .31**| .44**| .38**| --  |

*p < .05, **p < .01
**CONSENT FORM for Zero-Episode Exposure Condition**

Consent to Participate in Research
Television Shows about Health

My name is Chelsey Nakanishi, and I am a graduate student at the University of Hawaii (UH). A requirement of my Master’s degree program is to conduct a research project. The purpose of my project is to develop a baseline of your attitudes on health perceptions. Participation in this study will involve the completion of an anonymous online questionnaire. I am asking you to participate in this project because you are at least 18 years old and enrolled as a student at UH Manoa.

**Project Description – Activities and Time Commitment:** This study will span five weeks. For five weeks, you will fill out an Internet-based questionnaire that includes several attitude scales. You will spend no more than 30 minutes completing this questionnaire. Around 200 people will take part in this project.

**Benefits and Risks:** You will receive 0.75 SONA credits for participating in this survey. There is little risk to you by participating in this project.

**Confidentiality and Privacy:** This survey is anonymous. You will not be asked to provide any personal information that could be used to identify you.

**Voluntary Participation:** Participation in this project is voluntary. You can freely choose to participate or to not participate in this study, and there will be no penalty or loss of benefits for either decision. If you agree to participate, you can stop at any time without any penalty or loss of benefits to which you are otherwise entitled.

**Questions:** If you have any questions about this study, you can contact the researcher at: Chelsey Nakanishi – camn@hawaii.edu, 956-2260

You can also contact the faculty advisor, Robert Tokunaga, at rstokuna@hawaii.edu or 808.956.3323. If you have any questions about your rights as a research participant, you can contact the UH Committee on Human Studies at 808.956.5007 or uhirb@hawaii.edu.

**To Access the Survey:** Please go to the following web page for a link to the questionnaire and instructions for completing it. Submittal of the questionnaire will be considered as your consent to participate in this study. Please print a copy of this page for your reference.
**CONSENT FORM for One-Episode Exposure Condition**

Consent to Participate in Research Television Shows about Health

My name is Chelsey Nakanishi, and I am a graduate student at the University of Hawaii (UH). A requirement of my Master’s degree program is to conduct a research project. The purpose of my project is to determine the effects of exposure to television programs on your attitudes. Participation in this study will involve viewing an episode of a television program and the completion of an anonymous Internet-based survey. I am asking you to participate in this project because you are at least 18 years old and enrolled as a student at UH Manoa.

**Project Description – Activities and Time Commitment:** This study will span five weeks. For the first week, you will view an episode of a television program and fill out a questionnaire that is posted on the Internet. In the last four weeks of the study, you will complete the same questionnaire but will not view an episode of a television program. For the first week, you will spend approximately one hour watching a television program and completing the online questionnaire. For the last four weeks, you will spend approximately 30-minutes completing the questionnaire. Around 200 people will take part in this project.

**Benefits and Risks:** You will receive 1.0 SONA credits for participating in this survey. There is little risk to you in participating in this project.

**Confidentiality and Privacy:** This survey is anonymous. You will not be asked to provide any personal information that could be used to identify you.

**Voluntary Participation:** Participation in this project is voluntary. You can freely choose to participate or to not participate in this study, and there will be no penalty or loss of benefits for either decision. If you agree to participate, you can stop at any time without any penalty or loss of benefits to which you are otherwise entitled.

**Questions:** If you have any questions about this study, you can contact the researcher at: Chelsey Nakanishi – camn@hawaii.edu, 956-2260

You can also contact the faculty advisory, Robert Tokunaga, atrstokuna@hawaii.edu or 956-3323. If you have any questions about your rights as a research participant, you can contact the UH Committee on Human Studies at 808.956.5007 or uhirb@hawaii.edu.

**To Access the Survey:** Please go to the following web page for a link to the television episode and questionnaire and instructions for completing it. Viewing of the television episode and submittal of the questionnaire will be considered as your consent to participate in this study. Please print a copy of this page for your reference.
**CONSENT FORM for Two-Episode Exposure Condition**

Consent to Participate in Research
Television Shows about Health

My name is Chelsey Nakanishi, and I am a graduate student at the University of Hawaii (UH). A requirement of my Master’s degree program is to conduct a research project. The purpose of my project is to determine the effects of exposure to television programs on your attitudes. Participation in this study will involve viewing an episode of a television program and the completion of an anonymous Internet-based survey. I am asking you to participate in this project because you are at least 18 years old and enrolled as a student at UH Manoa.

**Project Description – Activities and Time Commitment:** This study will span five weeks. For two weeks, you will view an episode of a television program and fill out a questionnaire that is posted on the Internet. In the last three weeks of the study, you will complete the same questionnaire but will not view an episode of a television program. For the first two weeks, you will spend approximately one hour watching a television program and completing the online questionnaire. For the last three weeks, you will spend approximately 30-minutes completing the questionnaire. Around 200 people will take part in this project.

**Benefits and Risks:** You will receive 1.0 SONA credits for participating in this survey. There is little risk to you in participating in this project.

**Confidentiality and Privacy:** This survey is anonymous. You will not be asked to provide any personal information that could be used to identify you.

**Voluntary Participation:** Participation in this project is voluntary. You can freely choose to participate or to not participate in this study, and there will be no penalty or loss of benefits for either decision. If you agree to participate, you can stop at any time without any penalty or loss of benefits to which you are otherwise entitled.

**Questions:** If you have any questions about this study, you can contact the researcher at: Chelsey Nakanishi – camn@hawaii.edu, 956-2260

You can also contact the faculty advisory, Robert Tokunaga, at rstokuna@hawaii.edu or 956-3323. If you have any questions about your rights as a research participant, you can contact the UH Committee on Human Studies at 808.956.5007 or uhirb@hawaii.edu.

**To Access the Survey:** Please go to the following web page for a link to the television episode and questionnaire and instructions for completing it. Viewing of the television episode and submittal of the questionnaire will be considered as your consent to participate in this study.
**CONSENT FORM for Three-Episode Exposure Condition**

Consent to Participate in Research
Television Shows about Health

My name is Chelsey Nakanishi, and I am a graduate student at the University of Hawaii (UH). A requirement of my Master’s degree program is to conduct a research project. The purpose of my project is to determine the effects of exposure to television programs on your attitudes. Participation in this study will involve viewing an episode of a television program and the completion of an anonymous Internet-based survey. I am asking you to participate in this project because you are at least 18 years old and enrolled as a student at UH Manoa.

**Project Description – Activities and Time Commitment:** This study will span five weeks. For the first three weeks, you will view an episode of a television program and fill out a questionnaire that is posted on the Internet. In the last two weeks of the study, you will complete the same questionnaire but will not view an episode of a television program. For the first three weeks, you will spend approximately one hour watching a television program and completing the online questionnaire. For the last two weeks, you will spend approximately 30-minutes completing the questionnaire. Around 200 people will take part in this project.

**Benefits and Risks:** You will receive 2.0 SONA credits for participating in this survey. There is little risk to you in participating in this project.

**Confidentiality and Privacy:** This survey is anonymous. You will not be asked to provide any personal information that could be used to identify you.

**Voluntary Participation:** Participation in this project is voluntary. You can freely choose to participate or to not participate in this study, and there will be no penalty or loss of benefits for either decision. If you agree to participate, you can stop at any time without any penalty or loss of benefits to which you are otherwise entitled.

**Questions:** If you have any questions about this study, you can contact the researcher at: Chelsey Nakanishi – camn@hawaii.edu, 956-2260

You can also contact the faculty advisory, Robert Tokunaga, at rstokuna@hawaii.edu or 956-3323. If you have any questions about your rights as a research participant, you can contact the UH Committee on Human Studies at 808.956.5007 or uhirb@hawaii.edu.

**To Access the Survey:** Please go to the following web page for a link to the television episode and questionnaire and instructions for completing it. Viewing of the television episode and submittal of the questionnaire will be considered as your consent to participate in this study.
**CONSENT FORM for Four-Episode Exposure Condition**

Consent to Participate in Research
Television Shows about Health

My name is Chelsey Nakanishi, and I am a graduate student at the University of Hawaii (UH). A requirement of my Master’s degree program is to conduct a research project. The purpose of my project is to determine the effects of exposure to television programs on your attitudes. Participation in this study will involve viewing an episode of a television program and the completion of an anonymous Internet-based survey. I am asking you to participate in this project because you are at least 18 years old and enrolled as a student at UH Manoa.

**Project Description – Activities and Time Commitment:** This study will span five weeks. For the first four weeks, you will view an episode of a television program and fill out a questionnaire that is posted on the Internet. In the last week of the study, you will complete the same questionnaire but will not view an episode of a television program. For the first four weeks, you will spend approximately one hour watching a television program and completing the online questionnaire. For the last week, you will spend approximately 30-minutes completing the questionnaire. Around 200 people will take part in this project.

**Benefits and Risks:** You will receive 2.0 SONA credits for participating in this survey. There is little risk to you in participating in this project.

**Confidentiality and Privacy:** This survey is anonymous. You will not be asked to provide any personal information that could be used to identify you.

**Voluntary Participation:** Participation in this project is voluntary. You can freely choose to participate or to not participate in this study, and there will be no penalty or loss of benefits for either decision. If you agree to participate, you can stop at any time without any penalty or loss of benefits to which you are otherwise entitled.

**Questions:** If you have any questions about this study, you can contact the researcher at: Chelsey Nakanishi – camn@hawaii.edu, 956-2260

You can also contact the faculty advisory, Robert Tokunaga, at rstkuna@hawaii.edu or 956-3323. If you have any questions about your rights as a research participant, you can contact the UH Committee on Human Studies at 808.956.5007 or uhirb@hawaii.edu.

**To Access the Survey:** Please go to the following web page for a link to the television episode and questionnaire and instructions for completing it. Viewing of the television episode and submittal of the questionnaire will be considered as your consent to participate in this study.
APPENDIX B

Survey Instruments

Survey of Health Risk, Perceptions of Doctors, and Perceptions of Response Efficacy

Select Gender: Male ____ Female ____

Age: ____

Which ethnicity do you most associate with?:
Asian (Chinese, Filipino, Asian Indian, Japanese, Korean, Laotian, Thai, Vietnamese, Other Asian, Mixed Asian)
Hawaiian or Pacific Islander (Guamanian or Chamorro, Native Hawaiian/Part Hawaiian, Micronesian, Samoan, Tongan, Other Pacific Islander, Mixed Pacific Islander)
African-American/Black
American-Indian/Alaska Native
Caucasian/White
Hispanic
Mixed Race
Other: ____________

Demographic Questions:

1. In the past six months, how many times have you been seen or treated by a doctor?
2. What was the overall outcome of the health condition for which you were seen by a doctor?
3. Are any of your relatives or close friends currently practicing medicine as doctors?
4. Which medical dramas have you watched in the past? List all shows.
5. How many hours a week do you watch medical dramas?
6. How many hours a week do you watch television?

Please answer the following questions about your personal health risks.

1. How likely do you think it is that you will develop cancer in the future?
2. How likely do you think it is that you will develop heart disease in the future?
3. How likely do you think it is that you will have a heart attack in the future?
4. How likely do you think it is that you will develop diabetes in the future?
5. How likely do you think it is that you will have a stroke in the future?
6. How likely do you think it is that you will be involved in a serious accident in the future? (1-not likely, 7-extremely likely)

**Please rate doctors on the following characteristics:**

1. Unintelligent (1)  2  3  4  5  6  Intelligent (7)
2. Incompetent (1)  2  3  4  5  6  Competent (7)
3. Unqualified (1)  2  3  4  5  6  Qualified (7)
4. Selfish (1)  2  3  4  5  6  Unselfish (7)
5. Bad (1)  2  3  4  5  6  Good (7)
6. Dishonest (1)  2  3  4  5  6  Honest (7)
7. Immoral (1)  2  3  4  5  6  Moral (7)
8. Wrong (1)  2  3  4  5  6  Right (7)
9. Improper (1)  2  3  4  5  6  Proper (7)
10. Uncaring (1)  2  3  4  5  6  Caring (7)
11. Cold (1)  2  3  4  5  6  Warm (7)
12. Unfriendly (1)  2  3  4  5  6  Friendly (7)
13. Unattractive (1)  2  3  4  5  6  Attractive (7)
14. Plain (1)  2  3  4  5  6  Stylish (7)
15. Unsexy (1)  2  3  4  5  6  Sexy (7)
16. Nervous (1)  2  3  4  5  6  Poised (7)
17. Tense (1)  2  3  4  5  6  Relaxed (7)
18. Anxious (1)  2  3  4  5  6  Calm (7)
19. Irritable (1)  2  3  4  5  6  Good-natured (7)
20. Gloomy (1)  2  3  4  5  6  Cheerful (7)
21. Unpleasant (1)  2  3  4  5  6  Pleasant (7)
22. Poor (1)  2  3  4  5  6  Wealthy (7)
23. Low status (1)  2  3  4  5  6  High status (7)
24. Weak (1)  2  3  4  5  6  Strong (7)

1. In general, physicians are capable of treating health conditions of patients.
2. In general, physicians are capable of curing patients of health conditions.
   In general, physicians are capable of preventing health conditions in patients.
3. In general, doctors improve the health of their patients.
   (1-strongly disagree, 7-strongly agree)

**Instructions:** Here are several statements about the television show characters you watched throughout this study. For each statement, please circle the number that best expresses your own feelings about your favorite television show character(s) from the program you viewed. If you strongly agree with the statement circle a 5. If you agree with it circle a 4. If you disagree some and agree some circle a 3. If you disagree with it circle a 2. If you strongly disagree with the statement circle a 1.

1. I feel sorry for the television show characters when they make mistakes.
2. The television show characters make me feel comfortable, as if I am with friends.
3. I see my favorite television show characters as natural, down-to-earth people.
4. I look forward to watching the television show characters on television.
5. If my favorite television characters appeared on another TV program, I would watch that program.
6. My favorite television show characters understand the kinds of things I want to see on television.
7. If there were a story told about my favorite television characters in a newspaper or magazine, I would read it.
8. I miss seeing my favorite television characters when they are not being shown in the episode.
9. I would like to meet my favorite television show characters in person.
10. I find my favorite television show characters to be attractive.
   (1-strongly disagree, 5-strongly agree)
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