

Cultivation Effects of Medical Television Viewing on Aspiring Doctors

by

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Abstract

Using a cultivation analysis approach, this study involved analysis of the effects of media drama viewing on the career choices, career perceptions, and career motivations of pre-medical students. Survey questions investigate the intersection of medical television programming, pre-medical coursework, and other sources of career information in producing career perceptions, as well as motivations and reasoning for choosing a medical career. Television viewing was linked to an increased rating of the prevalence of cancer and lower levels of some aspects of intrinsic motivation. Medical documentary viewing had a positive relationship with ratings of common diseases, particularly heart disease. Higher ratings of intrinsic motivation were linked to more direct experience in the health field, defined as shadowing, volunteering, or having a paid position in a medical setting.

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Introduction

Choosing a career path is a daunting task for many young people, which, as Beaton (2016) of *Forbes* suggested, is due to a wide range of options and often due to having too many passions. Moghangard (2016) stated that fear of failure and of putting oneself out there is a culprit behind this difficulty, as young adults with dreams face reality and choose realistic careers. Nine out of the top ten careers listed in the US and World Report Top Careers list for 2016 are in the health field, and four of these are a specialty of medicine (The 100 Best Jobs, 2016). However, students face a wide variety of information about these and other careers, from sources that convey varying levels of accuracy (Jablin & Putnam, 2000; Foskett & Hemsley-Brown, 1999). Information about health and, by extension, the health professions, is also provided by a variety of sources that have a wide range of credibility. According to Kindig, Panzer, and Nielsen-Bohlman (2004), “The quantity, quality, and lack of quality control over ...[health] messages have exploded in the past 10 years” (p. 119). The potential for receiving less than accurate information related to medicine extends into careers, as television shows often center around careers such as those in law enforcement and medicine (Gerbner & Gross, 1976).

The medical field is a career that is frequently depicted in the media. As Turow (1986) explained, medical dramas achieved success on the big screen as early as the 1930s, when Dr. Kildare was conceptualized and have been a part of television ever since. While Dr. Kildare was an ethically minded intern with high ideals, and Ben Casey, who followed, was portrayed as a courageous hero, depictions began to trend more toward showing the human and flawed side of doctors, starting with *M.A.S.H.*. This show became popular during the Vietnam War and showed

disenchanted doctors who, despite their benevolence, were negatively affected by war and dealt with their troubles through shenanigans and excessive drinking (Turow, 1986; Tapper, 2010).

This trend of showing imperfect doctors continued, and today, medical dramas portray doctors who are deeply flawed. *House, M.D.*, a popular medical drama created by David Shore that ran from 2005 until 2012, depicts a doctor who is misanthropic and addicted to painkillers; in addition, the show focuses on the treatment of rare and bizarre illnesses (Sandeep, 2005; “House Announces”, 2012). This show provides an unrealistic depiction of a teaching hospital, in which doctors solve medical mysteries. *Grey’s Anatomy*, an award-winning medical drama which received positive reviews and attracted a large fan base from its beginning in 2005, is full of dramatic depictions of medical situations (Bianco, 2015; Jones, 2016; Toff, 2009; “About Grey’s Anatomy,” n.d.). The show is still being produced, having been renewed for a thirteenth season in 2016 (Jones, 2016). In her article on the best pre-medical programs, Aguero (2016), a writer for *College Magazine*, contrasted the entertaining nature of dramas such as *Grey’s Anatomy* with the difficulties of actually becoming a doctor.

These shows seem to be viewed as inaccurate; however, researchers have observed that medical students watch these shows. The physical therapy industry publication *PT in Motion* (2010) reported that research has shown that medical dramas portray medical professionals deviating from ethical standards of the profession, including informed consent. As Czarny, Nolan, Bodensiek, and Sugarman (2008) pointed out, medical dramas are watched by over 80% of medical students. This presents questions about what students are learning about their potential future careers and from what sources they are obtaining that information. Motivation and career perceptions have been found to relate to behaviors in the classroom and in specific careers (Williams, Saizow, & Ryan, 1999; Mann, 2011; DeCelles, 2007); for example, Williams,

Saizow, and Ryan's (1999) study showed that medical students' goals in the classroom can have an impact on the overall success of the curriculum. This study will focus on the relationship between watching television and premedical/medical students' career perceptions and career objectives.

Literature Review

From the time that television became prevalent, many studies have focused on the effects that television and other media have on attitudes and beliefs. Werder (2009) pointed out that in the 1960s, as television became more popular, scholars moved from a limited effects model, such as the multi-step flow model proposed by Katz and Lazarsfeld (1955), to theories positing that media content has strong effects over time. Jakobovits and Lambert (1963) argued for the need to evaluate the relationship between the repetition of certain themes on television and attitudes in order to determine a link to behavior. Some of the newer theories developed were uses and gratifications theory, which posits that audiences actively select media based on the needs and wants satisfied by the media content as well as the benefits obtained from media programming; and cultivation theory, which focuses on the effects of how television presents the social world as a whole and how television depictions affect perceptions of the real world.

Cultivation Theory

Cultivation theory posits that the mass media we are exposed to, and television in particular, influence how we view the world (Gerbner, 1970; Gerbner & Gross, 1976). Signorielli and Morgan (1990) explained, "The substance of the consciousness cultivated by television is not so much composed of specific attitudes and opinions as it is by broad, underlying, global assumptions about the 'facts' of life"(p. 14). The relation to career perception

stems from the fact that many careers that aren't otherwise easily accessible are shown through the media and are portrayed as more exciting than in real life (Gerbner & Gross, 1976). If students make career choices based on misconceptions and later discover that their chosen career isn't a good fit for them, then this may result in negative consequences for the student, the academic institution, and potential employers.

Essential to cultivation theory is the idea that even if people are aware that television is fictional, the content can still affect people's perceptions at a subliminal level. People receive consistent messaging from television including mainstreaming, or convergence of attitudes and beliefs around a conservative, conventional mean, which is thought to take place due to the television industry's aim to reach the broadest audience possible (Gerbner, Gross, Morgan, & Signorielli, 1980). Mean world effects, referring to an increased belief that the world is dangerous, result from television being more dramatic than real life (Gerbner & Gross, 1976; Romer, Jamieson, and Aday, 2003; Mulligan & Habel, 2013). If television can have such an impact on people's views of the social world, then it follows that these views might extend into people's own careers, which make up a large part of many people's individual social world.

The method of cultivation analysis is aligned with the theoretical perspective of cultivation theory, which is based on the idea that the influence of television is often unconscious and that information from television is frequently absorbed through peripheral channels. As Morgan, Signorielli, and Shanahan (2008) explained, "We want to determine whether those who spend more time watching television are more likely to perceive social reality that reflects the potential lessons of the television world" (p. 35). Before looking at how cultivation effects can play a part in students' career perceptions, the paper will examine how television influences

other attitudes and behaviors, how professions portrayed in the media are viewed in general, and the different factors that can come into play in anticipatory socialization.

Criticisms of Cultivation Theory

Just as many groundbreaking theories garner mixed reactions from those with more traditional theoretical perspectives, cultivation theory has been the subject of controversy and criticism. The debate about the validity of cultivation theory has been ongoing and contentious at times, with critics denigrating the theory and method as not being valid. As Morgan and Shanahan (1997) pointed out, cultivation theory represented a shift from the prevalent idea that the best way to measure effects of media content was to test behavior before and after exposure to a particular message. Instead, cultivation theory was built on the premise that these effects build over time and after exposure to many messages with similar themes. Cultivation analysis was viewed by quantitative researchers as not being empirically rigorous enough, while qualitative researchers criticized the method of study on the basis that it didn't go into enough depth in the texts studied (Morgan & Shanahan, 1998). Hirsch (1980) criticized the methods of analysis used and claimed that cultivation effects completely disappeared when confounding variables were accounted for. Early cultivation research didn't apply the rigorous controls that were to be used in later studies; however, even when applying controls, mild to moderate cultivation effects remained (Shanahan & Morgan, 1999; Morgan and Shanahan, 1997). However, new criticisms of cultivation theory emerged in the 1990s.

One of the most recent criticisms came from Potter (1993), in which the author asserted, "there is a serious problem with providing an a priori justification for what the television world answer should be when using second-order (or belief system) measures" (p. 568). The main premise of this argument is that cultivation researchers can't make an assumption of how

television's depiction of attitudes and beliefs will be interpreted by viewers and thus cannot reliably extend cultivation hypotheses into this realm. The data collected in multiple studies and reviewed by Shanahan and Morgan (1999), however, showed statistically significant second order effects in the direction predicted by the researchers. Also criticized were the tendency for cultivation predictions to be linear (Potter, 1991), while Shanahan and Morgan (1999) criticized this argument on the basis that items asking about viewership can't be guaranteed to be exact, especially when, as Potter (1991) did, participants are asked about how many hours they watch many different genres and when the sample is broken down into very small subgroups. Also, Morgan and Shanahan (1997) conducted a meta-analysis that showed that in many studies, cultivation hypotheses are supported, with weak to moderate but consistent cultivation effects demonstrated. Over the years, many studies have demonstrated numerous influences that television can have.

Television has been found to produce inaccurate and problematic perceptions of the social world pertaining to crime and violence. Cultivation studies have demonstrated that television portrays crime as more prevalent and casts people in stereotypical roles, which may lead heavy viewers to view the real world as being similar to the world portrayed on television and exhibit increased fear of crime (Gerbner & Gross, 1976; Gerbner, Gross, Morgan, & Signorielli, 1980; Romer, Jamieson, & Aday, 2003). An example is that white males on television tend to play the role of heroes, while members of minority groups are more likely to be victims and perpetrators (Gerbner & Gross, 1976). The effects on perception of social reality have the potential to extend to the world of work because socialization has been found to be significant to work and because the workplace makes up a large part of people's social world, as will be discussed in a later section. Additional studies have shown that television not only leads

to fear of crime but also is associated with differences in perceptions of careers, including professionalism and what various careers entail, such as showing more extrinsic career factors and portraying careers as being more dramatic than they are in real life.

However, the changing media landscape has led researchers to question how the vast variety of media choices and niche programming has affected cultivation and whether this theory is still applicable. Many viewers now watch programs through venues besides cable, such as downloading, streaming, and recording content to watch later via DVR (Bury & Li, 2013; Banerjee, Alleman, & Rapoport, 2013). As Morgan, Shanahan, and Signorielli (2015) pointed out, there is much more specialization in television, with niche subgenres making it possible for people to choose programs that are aligned with their own interests. While people choose what programs and genres to watch, the genres, in turn, may convey certain messages to the audiences that choose them. New technologies make it easier for audiences to access the television programming that produces cultivation effects. This paper will include an argument for cultivation effects interacting with uses and gratifications processes.

Uses and Gratifications Theory

Uses and gratifications theory focuses on how audiences choose what media and programs to consume (Cortese, 2014). In the 1940s, Herzog was one of the first to argue that audiences use entertainment programs to satisfy various wants and needs. Herzog (1942) found that among other uses, such as entertainment and relaxation, viewers of radio soap opera programs used these programs to obtain information about how they might respond in situations similar to those faced by the characters. Katz, Blumler, and Gurevitch (1973) argued that in addition to media sources satisfying needs, genres and media types may differ from each other in

what kind of needs they satisfy and what gratifications they provide. One of these media is television.

Later studies focused specifically on the medium of television. A significant motive that has been found for college students who watch television soap operas is orientation, which is defined as information seeking about social situations and finding potential solutions to problems (Rubin, 1985). Greenberg, Neuendorf, Buerkel- Rothfuss, and Henderson (1982) reported that college students may experience attraction to soap operas because they portray types of adult relationships that young adults just leaving home may not have experienced yet in real life. While young adults actively use media to meet their needs, television is related to perceptual differences in heavy viewers. Uses and gratifications research suggests that the programs one chooses can have a relationship with that person's motivations as well as what they learn. Banerjee, Greene, Kromar, Bagdasarov, and Ruginyte (2008) found that people who score highly on sensation seeking are more likely to seek out high action movies, showing a motivation to seek out exciting situations through media choices.

Furthermore, factors such as arousal seeking as a motive in media consumption can have a relationship with what individuals seek out in their careers. Giammarco, E. A., Schneider, T. J., Carswell, J. J., & Knipe (2015) found a positive relationship between playing video games for the purposes of arousal and indicating a preference for exciting careers. The authors indicated medical services as an example of exciting careers, although they specified exciting medical careers as mostly occurring within the area of emergency medical services. Although Katz, Blumler, and Gurevitch (1973) believed that viewers were active in their seeking out and consumption of media, they acknowledged the potential for this consumption to have side effects beyond satisfying needs and providing gratifications

Portrayals of Careers on Television

Studies have examined the portrayals of certain types of careers on television in general, without focusing on a particular genre, and found discrepancies between television depictions and how these careers appear in the real world. Pfau, Mullen, Deidrich, & Garrow (1995) examined the views of the public and attorneys regarding lawyers and compared these views to how lawyers are depicted on television. Television portrayals and public perceptions of lawyers' competence and personal appearance were found to be more positive than lawyers' own perceptions of attorneys, while, interestingly, both television and attorneys rated lawyers higher than the general public in terms of how ethical they are. According to Lichter, Lichter, and Amundson (1997), the field of business receives proportionately more negative depictions on television than other career areas. The authors attributed the negative depiction of business to the television industry's opposition to the field of business. These studies show that television can produce views of professions in ways that show biases and potential inaccuracies. Beyond general depictions of professions, certain television genres focus on particular professions and feature main characters in certain career fields.

More recently, specific genres of television have been examined using cultivation analysis, and one focus has been on genres such as the crime drama, which contain plots centering on different careers and areas of the criminal justice system. Shanahan and Morgan (2010) argued that people doing research on a genre need to define the effects of a particular genre and distinguish genre effects from the effects of television in general. One such genre cultivation effect that has been studied is the "CSI Effect," in which watching criminal justice related programming supposedly leads to certain biases (Podlas, 2006; Mancini, 2013). Evaluations regarding the existence of this effect have yielded mixed results, which perhaps

shows the importance of distinguishing a specific genre. Podlas (2006) interviewed attorneys to ask about their perceptions of the CSI Effect and then went back through case files to see if the verdicts matched up with their perceptions. From the court cases, Podlas (2006) found no evidence of a prejudice toward the defense in court cases, despite the fact that many working for the criminal justice system reported that this effect was present. Possible explanations posited for prosecutors' belief in this phenomenon were that there is an egocentric bias basic to humans in which we view our perspective or position as more valid and making more sense than the other side. Therefore, the authors theorized that there is more of an indirect impact on those working in the field.

However, some studies have found support for the CSI Effect. Other studies have found that watching criminal justice dramas has perceptual effects on juror populations. Studies that paid more attention to defining specific genres had results that were more supportive of media effects. In an experiment that recruited participants to watch a real court case and indicate whether they would have supported the defense or prosecution, Mancini (2013) later tested the hypothesis of the CSI effect. This study differed from previous projects in this area because it separated the genre of forensic fiction from fictional forensic dramas and found that the CSI effect was present in participants who were heavy viewers of fictional programs. This finding is consistent with the conclusions of Grabe and Drew (2007), who found that while watching television news that focuses on crime leads to positive views of the current criminal justice system, viewing of criminal justice dramas is associated with increased perceptions of dishonesty within the criminal justice system. The fact that Podlas's hypothesis wasn't supported and Mancini's was demonstrates the importance of carefully defining the genre that is being studied.

In addition to the significance of genre to effects, television's effects on people's perceptions of health issues have been studied.

Beyond affecting how the general public views criminal justice professions, television has been found to have an impact on the career beliefs and perceptions of students in the forensics and criminal justice fields. Criminal justice students tend to have misconceptions about human trafficking that were consistent with media portrayals of this type of criminal activity (Haroldson, 2014). Barthe, Leone, and Lateano (2013) discovered a relationship between career misperceptions and viewing criminal dramas, with shows focusing on police influencing career choices, while forensics-specific and courtroom specific programs were associated with inaccurate perceptions of criminal justice careers. Therefore, even students who are already pursuing a field that is portrayed on television learn inaccurate information about these careers that contradict the realities of the field. In addition to having an impact on views regarding career fields television has been found to influence how people view health issues.

Television and Health Perceptions

Television has been shown to have a connection to people's beliefs about the health implications of various activities. Shanahan, Scheufele, Fang, and Hizi (2004) found that heavy viewers of television overestimated the percentage of people who smoke and were more likely to favor stricter smoking policies. This finding contradicted their hypothesis that because smoking is portrayed less in television, viewers would underestimate the prevalence of smoking. The authors of this study theorized that the contradictory finding might be a result of public service announcements and ad campaigns against smoking. Interestingly, people who watch more television have been found to underestimate the negative health effects of eating junk food (Russell and Buhrau, 2015). These underestimations may reflect a lack of public health

campaigns supporting healthy eating habits and the fact that television advertisements for food products are prevalent, while cigarette ads are illegal. Another perception that is affected by television is that of body image, with heavy viewers more likely to value body types shown on television (Eisend & Moller, 2007). However, sometimes fictional programs can increase knowledge of health conditions in some cases.

Fictional television programs have been shown to be used by viewers as a source of medical information, and in some cases these programs can increase knowledge and awareness. In a study examining the consumption motivations in *Desperate Housewives* viewers, Murphy, Frank, Moran, and Patnoe-Woodley (2011), discovered that viewers of this program who became involved with the show and identified with its characters experienced changes in their knowledge of health issues portrayed on the show. According to Lapsansky et al. (2010), viewers of *The Bold and the Beautiful* who watched episodes in a story line focusing on bone marrow donation learned about the process from this particular television program. However, due to entertainment television's purpose of being entertaining, the information gained from television varies in its accuracy. Beyond health risks of specific products, television consumption has been linked to views of medical procedures and conditions that reflect the television world in ways that are inconsistent with the real world.

Medical dramas in particular have the potential to forward such perceptions because of their focus on the medical profession. In a study on beliefs regarding organ donation, Quick, Morgan, La Voie, and Bosch (2013) found that people who watched *Grey's Anatomy* more frequently viewed the show as more accurate as opposed to non-viewers. Those who perceived the show as accurate were found to have less accurate knowledge about organ donation, and those with inaccurate knowledge were less likely to be willing to be an organ donor (Quick et al.,

2013). Beyond influencing attitudes toward health policy, television portrays health conditions and diseases in ways that differ from real life, and these depictions have been shown to affect viewers' health perceptions. These beliefs are significant particularly in people going into health fields, as new physicians and other health professionals may carry health beliefs from television into their jobs.

Studies have demonstrated that medical television programs present a skewed view on the prevalence of some conditions as being more common and others as being less common than their prevalence in real life. The prevalence of injuries and other conditions with highly visible symptoms is greater in television than in real life, while chronic conditions are underrepresented on television (Ye & Ward, 2010; Hetsroni, 2009). Hetsroni (2009) pointed out that the general mortality rate is also unrealistically high on television. Because the health conditions doctors see are a large part of their day-to-day work life, pre-medical students who have skewed perceptions of the conditions that they will one day treat may have perceptions about their careers that aren't entirely accurate.

Survey research has shown that these skewed depictions can influence the viewing public's perceptions of health behaviors. Television also links to people's beliefs about their own behaviors related to preventing illnesses, which is troubling considering that the CDC (2012) reported that chronic diseases are often preventable, that around half of American adults suffer from a chronic disease, and around seven out of ten deaths are attributed to chronic illness. Chung (2014) discovered that heavy viewers of television were likely to underestimate the ability to prevent cancer and showed more "fatalistic views" of this type of disorder. Given that the majority of deaths are caused by chronic illnesses that can be prevented, this finding is

concerning, especially regarding the perceptions of doctors who are expected to give information about how to prevent illnesses.

The portrayals of medical conditions and treatments on televisions are often unrealistic. Fictional patients' chances of survival after undergoing cardiopulmonary resuscitation is higher than the survival rates in real life (Diem, Lantos, & Tulskey, 1996); furthermore, watching medical dramas is related to an inaccurately high rating of someone's chances of recovery after cardiopulmonary resuscitation (Van den Bulck, 2002). Viewing television dramas has been linked to beliefs about medical miracles as well, while sometimes the results have been counterintuitive. Contrary to the hypothesis that heavy television viewers would expect more medical miracles, Record (2011) found that heavy viewers of the medical drama genre reported lower levels of belief in medical miracles than did nonviewers, suggesting that multiple factors may be at play. Hetsroni's (2009) observations that a patient portrayed on television is significantly more likely to die provides a potential explanation for these seemingly unintuitive findings. Quick (2009) explained, "heavy viewers of *Grey's Anatomy* perceive the content to be realistic, which leads to believing doctors are courageous, which leads to being more satisfied with one's real-world doctor" (p. 53). The portrayal of doctors as being either unrealistically heroic or dramatically unethical on television raises concerns about how this can influence students who are going into the field of medicine and other careers frequently portrayed on television. These studies indicate that medical television programs produce inaccurate views of the world of medicine relating to the success levels and amount of drama found in real-life medicine. How doctors and other medical professionals are portrayed is also of significance, as this may relate to the professional identity of new and aspiring doctors.

Specific television genres and time periods have been found to portray physicians in distinct ways, most notably in the genre of the medical drama. Turow (1986) pointed out that the field of medicine has been frequently portrayed on television since the beginning of television. A few decades before the rise of television as a popular entertainment, scientific breakthroughs in the early twentieth century transformed medicine from a disreputable vocation rooted in pseudoscience to a respected scientific profession. In the 1930s, motion pictures began to give ordinary people a unique look at professions such as medicine, while also dramatizing these occupations in order to produce entertaining programs. In the 1930s, the author Frederick Faust had a vision for a storyline in which doctors would be shown as courageous heroes, similar to the kinds of larger than life protagonists that were common in Westerns at the time (Turow, 1989). Faust created a story based on the heroic and ethical character known as Dr. Kildare, a young doctor in training, which would become the motion picture *Internes Can't Take Money*, a successful movie that was the first of several based on the character. This trend of focusing on doctors in narratives would continue with television. Decades after the introduction of Dr. Kildare, the first widely successful medical drama was broadcast on television. *Medic*, written by James Moser, was envisioned as portraying an unvarnished image of the medical field. This show got the attention of the public through the gritty and controversial health and social issues portrayed on the show, representing

While some of the first shows portrayed doctors in the best light possible, that began to change with *M.A.S.H.*, which showed doctors as flawed and human (Tapper, 2010). The trend would continue, with *St. Elsewhere* also presenting doctors as flawed humans living in an imperfect world. Then, *E.R.*, which originally wasn't taken on by the television networks because of its controversial portrayal of doctors, was eventually aired and became successful

(Tapper, 2010). Tapper (2010) found that while the medical dramas produced decades ago were found to portray doctors in a very positive light, over time, programs began to emphasize the character flaws of doctors, such as cynicism and corruptibility. Medical dramas have consistently been part of television canon ever since, with the portrayal of doctors changing over time.

The information given by television programs continued to move in the direction of showing doctors as flawed individuals and emphasizing negative qualities. A popular medical drama, *House, M.D.*, frequently showed the main protagonist going against patients' wishes and being both courageous and abrasive; he also frequently abused opioid pain medication (Wicclair, 2008; Strauman & Goodier, 2011). Goodman (2007) argued that doctors are portrayed as going against the ethical standards of medicine by performing unrealistic and risky miracle cures while breaking policies with regard to areas such as resuscitation and organ transplant. These problematic portrayals of doctors on television have also been linked to how viewers perceive real world doctors, in areas such as ethics and professionalism.

Studies have also shown that viewership of contemporary medical dramas is associated with perceptions of doctors that differ from those of people who don't watch as frequently. Viewing television programs has been found to result in viewers having a more positive view of physicians in terms of social skills (Pfau & Mullen, 1995) but has been associated with viewers' holding negative perceptions of doctors in areas related to ethics and composure (Pfau & Mullen, 1995; Chory-Assad and Tamborini, 2003). Therefore, beyond depicting doctors in certain ways, television viewing has been shown to have effects on people's real life perceptions of doctors. A few studies have supported the idea of television causing consumers to view doctors in the role of a courageous hero. Heavy viewers of *Grey's Anatomy* have been found to view the show as more credible than nonviewers (Quick, 2009; Quick et al., 2013). Heavy viewers were also were

more likely to view doctors as courageous (Quick, 2009). However, the effects were subtle, and the author did not find that people were aware of television's influence on their beliefs. Quick (2009) explained, "heavy viewers of *Grey's Anatomy* perceive the content to be realistic, which leads to believing doctors are courageous, which leads to being more satisfied with one's real-world doctor" (p. 53). The portrayal of doctors as being either unrealistically heroic or dramatically unethical on television raises concerns about how this can influence students who are going into the field of medicine and other careers frequently portrayed on television.

Medical dramas have been shown to have different effects on perceptions than other genres. Chory-Assad and Tamborini (2001) looked at the portrayal of doctors in entertainment genres and news programs and found differences. In this study, news programs showed higher levels of social skills and professional competence in doctors, while entertainment programs, such as daytime soap operas and primetime dramatic programs, portrayed doctors as more physically attractive than did news-based programs. Therefore, the type of program plays a role in determining how doctors are portrayed; for this reason, the types of programs watched by pre-medical students may influence their perspectives as well.

Medical Television

Medicine has been a staple in television for many years, and basically started when television became popular in the 1950s. This trend was carried over from other media such as novels and film (Malmsheimer, 1988). The field of medicine has been frequently portrayed on television since television became a popular entertainment medium (Turow, 1986). According to Franklin, Hamer and Hanna (2005), television began to rapidly increase in popularity in the late 1940s and early 1950s. Decades after the introduction of Dr. Kildare, *Medic* became the first widely successful television medical drama broadcast on television and ran from 1954 until 1956

(Turow, 1986). Envisioned by creator James Moser as a program that would depict an unvarnished image of medicine, this show got the attention of the public through its portrayal of the gritty and controversial health and social issues (Turow, 1986). Malmshiemer (1988) described the medical drama *Marcus Welby, M.D.* (1969-1976) as furthering the portrayal of doctors as heroes by focusing on a wise and almost saintly character as the leading role. The heroic portrayal of doctors was characteristic of medical shows at the time.

While some of the first shows portrayed doctors in the best light possible, that began to change with *M.A.S.H.* (1972-1983), which showed doctors as flawed and human (Tapper, 2010). The trend would continue with *St. Elsewhere* (1982-1988), a show which also portrayed doctors as flawed humans living in an imperfect world. Then, *E.R.* (1994-2009), which originally wasn't taken on by the television networks because of its controversial portrayal of doctors, was eventually aired and became successful (Turow, 1986; Tapper, 2010). Tapper (2010) found that while the medical dramas produced decades ago were found to portray doctors in a very positive light, over time, programs began to emphasize the character flaws of doctors, such as cynicism and corruptibility. Medical dramas have consistently been part of television canon ever since, with the portrayal of doctors changing over time.

The information given by television programs continued to move in the direction of showing doctors as flawed individuals and emphasizing negative qualities. A popular medical drama, *House, M.D.* (2004-2012) frequently showed the main protagonist going against patients' wishes and being both courageous and abrasive; he also frequently abused opioid pain medication (Wicclair, 2008; Strauman & Goodier, 2011). Goodman (2007) argued that doctors are portrayed as going against the ethical standards of medicine by performing unrealistic and risky miracle cures while breaking policies with regard to areas such as resuscitation and organ

transplant. These problematic portrayals of doctors on television have also been linked to how viewers perceive real world doctors, in areas such as ethics and professionalism.

Studies have also shown that viewership of contemporary medical dramas is associated with perceptions of doctors that differ from those of people who don't watch as frequently. Viewing television programs has been found to result in viewers having a more positive view of physicians in terms of social skills (Pfau & Mullen, 1995) but has been associated with viewers' holding negative perceptions of doctors in areas related to ethics and composure (Pfau & Mullen, 1995; Chory-Assad and Tamborini, 2003). Therefore, beyond depicting doctors in certain ways, television viewing has been shown to have effects on people's real life perceptions of doctors. *Grey's Anatomy*, which premiered in 2005 and as of 2016 is still being produced, has also been linked to perceptual effects. More frequent viewing of *Grey's Anatomy*, as measured by a scale from 1, which signified never watching the show, and 5, referring to watching every or almost every episode, has been linked to viewing the show as more credible than nonviewers (Quick, 2009; Quick et al., 2013). Heavy viewers were also more likely to view doctors as courageous (Quick, 2009). However, the effects were subtle, and the author did not find that people were aware of television's influence on their beliefs. Medical dramas have been shown to have different effects on perceptions than other genres. Chory-Assad and Tamborini (2001) looked at the portrayal of doctors in entertainment genres and news programs and found differences. In this study, news programs showed higher levels of social skills and professional competence in doctors, while fictional medical programs portrayed doctors as more physically attractive than did news-based programs. Therefore, the type of program plays a role in determining how doctors are portrayed; for this reason, the types of programs watched by pre-medical students may influence their perspectives as well.

In addition to fictional medical dramas, documentaries have also focused on doctors and the field of medicine. Just as medical dramas were controversial in the medical profession, early medical documentaries didn't escape the scrutiny of doctors. . Essex-Lopresti (2006) stated that the first British medical documentary series depicting live patients, which was produced by the BBC in 1958, was well-received by viewers but was criticized by the *British Medical Journal*. The documentary, entitled *Your Life in Their Hands*, aimed to increase the public's knowledge about medicine and to decrease fear of medical conditions by showcasing the abilities of modern medicine. The *British Medical Journal* (1975) found medical documentaries to be unhelpful because instead of objectively portraying the realities of health, they tended to portray the most dramatic cases and sensationalize the information portrayed.

However, not much current research has been conducted on medical documentaries. Weprin (2009) brought up the point that due to doctor-patient confidentiality issues that came to the attention of Joint Commission on Accreditation of Healthcare Organizations in the year 2000, medical documentaries, which were previously common, became rare. Renes, Mutsaers, and Woerkum (2012) found that the creators of Dutch health documentary *For Thick and Thin* faced difficulties due to the often competing goals of first, providing an accurate and educational depiction of health issues and treatments, and second, producing entertaining content that keeps the audience's attention. According to Genzlinger (2014), medical documentaries such as *Untold Stories of the ER* and *Sex Sent Me to the ER* have something to offer that is unique from what everyone has seen in fictional medical dramas, in that they offer a look at what happens in real life medicine and give the perspectives of the real life doctors who appear on the shows. Since pre-medical students are going into the health field, however, they may be more likely to attend to educational programming, as the information is particularly relevant to this population.

Anticipatory Socialization

Anticipatory socialization is the first step in people's socialization process to the working world and occurs before people have actual work experience. This stage of socialization includes everything that children learn about what jobs, careers, and work in general is like. Studies have emphasized the role of multiple sources at a young age, including parents, friends, school, and media sources (Jablin & Putnam, 2000; Levine & Hoffner, 2006). Foskett and Hemsley-Brown (1999) argued that because messages about work and careers are conveyed and received, often unconsciously and before children learn how to evaluate career choices, career counseling needs to begin at an earlier age. Taking active steps to become involved in one's career field results in higher levels of commitment to the chosen career (Scholarios, Lockyer, & Johnson, 2003), while being influenced to choose a career by an inaccurate perception can lead to lower levels of satisfaction (Sang, Ison, Dainty, & Powell, 2009). Therefore, multiple sources can play into anticipatory socialization, but actual participation in the career leads to more accurate knowledge than knowledge obtained from media and other sources.

The availability of alternative anticipatory socialization sources such as parents can mitigate or enhance the salience of television messages. Multiple sources, such as friends and adult role models, have the potential to provide sources of information about careers, but these sources may be limited depending on factors such as parental career experience. Levine and Hoffner (2006) reported that parents' and friends' communications about work tend to be focused on more of the negative factors. However, parental employment and economic status may play a role in the communication and, by extension, the extent to which students rely on sources such as television. The type of job held by a child's parents may influence the work values conveyed to a child (Ryu & Mortimer, 1996), while parental economic aspirations and

achievements interact to influence a child's own aspirations in terms of what career motivations they hold, with extrinsic concerns such as financial stability being more important in low-income students, and intrinsic factors such as fulfillment being more significant in students of higher socioeconomic status (Mortimer, Zhang, Hussemann, & Wu, 2014). The extent to which teenagers focus on intrinsic and extrinsic values and goals can have an effect on what work values teenagers view as important, which can influence what types of jobs teenagers seek out.

The role of intrinsic and extrinsic motivation, which is related to information sources used in the process of anticipatory socialization, is related to cultivation effects on career perceptions, with more television viewing being associated with more extrinsic motivation. Intrinsic motivation has also been found to be an important factor in education, with intrinsic motivation being associated with deeper learning and higher interest, and extrinsic motivation being associated with burnout (Chang, Lee, Byeon, & Lee, 2014; Vansteenkiste, Matos, Lens, & Soenens, 2007). This is important in students going into the medical field because burnout is a major concern in health fields and is more likely to occur when students haven't had a realistic job preview (Muldary, 1983). Students who are mainly concerned with extrinsic goals may be especially susceptible to these burnout effects, particularly if they have unrealistic expectations that lead to shock when they enter the field.

Furthermore, negative effects of extrinsic motivation have been shown in medical students. In a study looking at the motivation of medical students, Williams, Saizow, and Ryan (1999) found that students who were motivated by outside factors were less likely to experience positive outcomes in terms of wanting to learn compared with students whose motivation came from within. How students frame their tasks and goals has an impact on their performance. Mann's (2011) study showed that students' perceptions of the work they do in school has an

impact on the success of training. In this project, students in a course framed the presentation of medical cases as a school assignment, in which being questioned was a bad thing, while teachers wished to open a dialogue to help students in their development of a professional identity. Concern for external factors such as grades was more important to students, while intrinsic factors of learning and understanding were more important to teachers. Television viewing has been found to be related to valuing extrinsic things such as jobs with external benefits and high income (Signorielli, 1993). Students who are heavy television viewers and who also experienced more financial problems growing up may have a predisposition for focusing on extrinsic factors in their career choices.

Television is a part of the socialization process, particularly in those without real life role models, and may contain exaggerated or false information. From a more critical perspective, television may cause difficulties for people from people who are disadvantaged. Hoffner, Levine, and Toohey (2008) found that students whose parents have attained lower levels of education are more likely to aspire to the career of a favorite television character, showing that parental educational level may be a mediating factor in the influence of television. Nivet (2008) argued that media portrayals are one of many societal influences that can decrease the effectiveness of organizational efforts to increase opportunities for minorities in academic medicine. These studies demonstrate the need to understand the effects of television watching and potential challenges that media effects of watching television can pose to particular populations of students. However, research indicates that factors such as the values of the university attended and participating in university education programs can have an influence on medical students; therefore, perhaps by understanding how these motivations arise can help to counter the potentially harmful effects of too much extrinsic motivation.

Research has shown that medical students can be influenced by multiple sources, including messages that are officially communicated by medical schools, and outside factors, such as the social environment at the university. Medical students' perceptions and values are susceptible to the influences of numerous outside sources. The goals and values of medical students are significant, as doctors are expected to display high professionalism, ethical awareness, and excellence in knowledge of medicine (Baszanger, 1985; Irvine, 1999). Students' perceptions of what is important in their education has been found to relate to learning and performance outcomes. Simmons (2005) discovered that, contrary to the "pre-med syndrome" in which students care only about medical school at the expense of studying other subjects, the participants thought that a humanities education was important. They suggested that this might be attributed to the fact that the students were at a liberal arts college, which might mean that they cared more about the humanities and a well-rounded education than the average student or that being at that college taught them the value of such an education. Therefore, factors beyond the particular academic department may have an influence on young aspiring doctors.

Universities have started to take initiative in making sure that values of professionalism are developed in the field of medicine. Steinert, et al. (2007) detailed a long-term professionalism development initiative in which leaders, faculty, and students in a university medical program were educated on developing characteristics of doctors as healers and professionals. In this program, values emphasized were focused on intrinsic goals such as healing and helping others in an ethical way. The research shows that a focus on intrinsic motivation is beneficial to student success. According to Chertok, Barnes, and Gilleland (2014), medical students who attended a training program on medical ethics scored higher on a test examining how closely students' ethical standards matched those expected in the field of

medicine. While official sources of career socialization can make a difference, sources outside of the university, such as television, can also have an impact on career perceptions.

Television and Anticipatory Socialization

Researchers have demonstrated that television can affect the social development of children; because anticipatory socialization begins at an early age, it is reasonable to expect that television has at least some effects on the anticipatory socialization process. Greenberg (1982) stated that television provides information that informs how people perceive their roles, ranging from family roles, ethnic and racial roles, to career roles; this influence is troubling, considering that women and minorities have been found to be underrepresented in television's depiction of the workplace (Greenberg, 1982; Signorielli & Kahlenberg, 2001). Therefore, if people enact their various roles based on what they see on television, then they might limit themselves to the possibilities shown on such programs.

Beyond giving skewed information about roles, television portrays the world as being more dramatic than it is in real life. Vande Berg and Trujillo (1989) pointed out that television programming is determined by the motive to produce an entertaining show; as a result, content related to work is more exciting and dramatic than what the work actually or usually entails. Therefore, task roles are not emphasized. Actual routine tasks were more likely to be carried out by minor characters in the background, while the main characters who were a major part of programming were engaged in predominantly more social behaviors. Routine tasks that make up a large portion of occupational roles and activities are not emphasized in television, and political realities and challenges are often omitted (Signorielli, 1993; Steenland, 1990). Rather, relational and social behaviors are more prominent in career portrayals on television, which indicates if

television is a primary source of career information, task information, which is related to what the job actually entails, may be left out or minimized.

Cultivation effects have been found in the perception of careers, with factors that are more salient on television being viewed as more important to young people in their own careers. Levine and Hoffner (2006) discovered that while the high school students surveyed viewed media as a source of information, along with parents, friends, and part time jobs, they were skeptical of media's accuracy as an information source. However, the effects may not be based in logic or belief that the information is correct due to the often subconscious nature of career messages that people absorb (Foskett & Hemsley-Brown, 1999). This is why it isn't enough to ask students if they think that their career perceptions are affected by television; rather, media exposure and perceptions should be asked about separately, so that the researcher can measure the presence and extent of effects.

Television has been shown to have effects on anticipatory socialization in the form of changing perceptions of careers and influencing choices. Career portrayals ranging from the realistic genre of documentary to the outlandish genre of science fiction have been found to influence students in their aspirations to particular fields (Van den Bulck & Beullens, 2007; Herring, 2007). For example, in Herring's (2007) study, a participant reported that his interest in *Star Trek* was a factor in his dream job of becoming an astronaut, despite the show's obviously fictional nature. Therefore, television may start to sway people's career perceptions at a young age.

Just as television leads to more materialistic views in their buying habits and attitudes to environmentalism, viewers of television display higher levels of extrinsic motivation. Signorielli (1993) made the discovery that teenagers who watched more television had a greater expectation

for having jobs that provide extrinsic rewards such as ease, vacation time, and prestige. In addition to wanting particular extrinsic benefits, students tend to aspire to favorite characters' careers on the basis of extrinsic but not intrinsic rewards (Hoffner, Levine, & Toohey, 2008). These results are consistent with cultivation studies that showed a positive relationship between entertainment programming and materialism, producing effects such as a positive view of materialism, a lack of willingness to make financial sacrifices for the environment and attitudes toward making purchase decisions based on ethical considerations (Cho & Krasser, 2011; Shrum, Burroughs, & Rindfleisch, 2005; Shanahan, Morgan, & Stenbjørre, 1997; Ahern, 2012). However, choosing a career based on extrinsic factors may cause problems.

Students focusing on extrinsic rewards may go into a field because of the benefits that the job provides instead of what the actual work entails, but television can also alter perceptions of motivation when students aspire to have a career like that of a television character. Hoffner, et al.'s (2006) study on television effects on students from low income backgrounds indicated that students were more likely to aspire to a character's job if extrinsic rewards were present. The aforementioned research indicates that television might increase the salience of certain aspects of careers in general, primarily extrinsic ones; other studies indicate a relationship between media consumptions and students' perceptions of their own career choices.

Health fields other than medicine have also been studied to determine whether television is influential in the areas of career perception and career decisions. Students asked about the influence of mass media sources acknowledged media sources as giving information about medical careers; however, they didn't believe that television had impacted their career choices personally (Law & Arthur; 2003; Larsen, McGill, & Palmer, 2003). While students admitted that the media are a major source of information about specific careers, students didn't believe that

the media influence their own career choices. The results of these study might be different, however, if a cultivation approach is taken, because cultivation has more of an ability to measure unconscious influences. The findings of the two aforementioned studies may also have to do with the fact that nursing has largely backgrounded on television programs (Kalisch, Kalisch, & Scobey, 1983). However, in recent years, nurses have been featured on television in a more active role in series such as *Nurse Jackie*, and for this reason, other health professions may be subject to the effects of media portrayals more than in the past now and in the future (McHugh, 2012). Media portrayals may become more significant to the field of nursing in the future due to the current foregrounding of nurses on television.

Medical Drama Viewing and Aspiring Doctors

Viewership of medical television programs among medical students is high, and some effects of media exposure on medical students have been revealed. A high proportion of medical students have been found to watch medical television programs, with Czarny et al. (2008) reporting viewing levels at over than 80% of the nursing and medical students who participated in their study, while 93% of Weaver and Wilson's (2011) participants reporting watching this genre of shows. However, experience in the field may lessen the effects of viewing. The authors found that students with clinical experience view these shows as less realistic. However, this raises the question of whether medical students first choose the profession based on false expectations for the field. Students with more experience have been shown to have a more realistic perception of their careers and more confidence in their career choices (Scholarios, Lockyer, and Johnson, 2003). If this finding extends to the effect of medical drama viewing on aspiring doctors, then there may be ways that active engagement in career related activities can

give aspiring doctors a more realistic impression of the life of a physician before committing to medical school.

In addition to watching medical dramas, medical students also remember what they learn on these programs. Weaver and Wilson (2011) observed that students have overall positive perception of professionalism and remember issues portrayed on medical shows, despite research that has shown negative depictions of physicians. The potential for medical dramas to produce perceptual inaccuracies about what happens in the field of medicine is problematic if these effects are also produced in students who are either considering career choices in health professions or already pursuing the field of medicine or a related health field. Beyond displays of professionalism, television has been shown to result in perceptual inaccuracies regarding the realities of medicine, such as in Van Den Bulck's (2002) study about the perceptions of survival rates after cardiopulmonary resuscitation and Chung's (2014) paper on illness prevention. Students who don't have a good idea of how often they will lose patients or how often they will deal with chronic illness may not be making fully informed decisions about their careers.

However, students who are informed about their careers and made aware of the potential effects of watching medical dramas may be able to use these programs to their advantage. Teachers may even be able to incorporate such programs into lessons about ethics and related philosophical issues regarding medicine. Weaver, Wilson, and Langendyk (2014) argued that because medical dramas encourage thinking about ethical issues and current events, the effects of watching these programs are not all bad. Whiting (1963) suggested that educational television in particular should be studied as a potential way of intentionally enhancing medical education and suggested that the learning process and its relationship with television needs to be studied in greater depth. This idea is aligned with the uses and gratifications studies that have shown that

students can learn social information from soap operas (Rubin, 1985) and that the general public can receive health education from entertainment programs (Murphy, Frank, Moran, & Patnoe-Woodley, 2011; Lapsansky et al., 2010).

However, the career socialization of students begins far before they begin to pursue a college major and has many sources, including television. Therefore, the education process may need to begin at a younger age. Gaining insight into students' perceptions of medical dramas could yield insight into how not only how to guard against the most likely negative effects but show such shows could be utilized for educational purposes when students are given the information they need regarding media literacy.

Hypotheses

Hypothesis 1: Undergraduate pre-medical students who report the heaviest viewing of medical dramas will also report views about the prevalence of health conditions that align with the frequency of health conditions on television, as opposed to the statistics reported by the CDC.

Hypothesis 2: Participants who report the heaviest viewing of medical dramas will also report views about chronic illness and CPR survival rates that reflect how these issues are shown (or not shown) on television, as opposed to real world statistics.

Hypothesis 3: Students who report having more experience in the medical field will report having perceptions about medical conditions that are more closely aligned to the real world of medicine than to the television world.

Hypothesis 4a: Students who report having more real world experience will also report higher levels of intrinsic motivation.

Hypothesis 4b: Students who report having more real world experience will also report lower lower levels of extrinsic motivation.

Hypothesis 5a: Students who report heavy viewing of medical dramas will report lower levels of intrinsic motivation.

Hypothesis 5b: Students who report heavy viewing of medical dramas will report higher levels of extrinsic motivation.

Research questions:

Research Question 1: Do factors such as whether television shows are watched when broadcast or binge watched have an impact on the extent of cultivation effects?

Research Question 2: Does watching medical dramas with other pre-medical students have an impact on the cultivation effects experienced?

Research Question 3: Does parental income and socioeconomic status relate to intrinsic and extrinsic motivation in pre-medical students?

Research Question 4: Do demographic factors, such as parental income and year in school, have a relationship with cultivation effects?

Method

Justification

In this study, a survey was conducted in order to measure cultivation effects of medical dramas on medical students. To test the validity of the survey questions, the principal investigator conducted a pilot study in undergraduate classes in which the participants went over the survey questions and voiced aloud their perceptions of what the questions were asking of

them. The current project was approved by the IRB on October 6, 2016, after the author made modifications to the study based on IRB feedback. The approvals are attached as Appendix 2 at the end of the thesis.

The current study is unique in that it adapted survey items of cultivation effects on people's perception of health issues and the medical profession that have been conducted on the general public to find out the extent to which aspiring medical students and current medical students are susceptible to the same effects. The survey also included items adapted from Banerjee, Alleman, & Rapoport (2013) and Bury and Li (2013) on the mode of viewing. As Czarny et al. (2008) pointed out, four out of five medical students watch medical dramas, and as Weaver and Wilson (2011) found, they also tend to remember depictions of ethical issues on these shows. Two items in the area asking about perceptions of illness and medical procedures were modified after the pilot study based on participants' comments.

The study took account instances in which media effects hypotheses regarding television and health professions have not been supported. Some contradictions are present in the literature; for example, Van den Bulck's (2002) finding that CPR survival rates are higher in television than in real life somewhat contradict Hetsroni's (2009) finding that deaths are more common among medical drama patients than they are in the real world. Hypotheses in the area of cultivation effects on career perceptions have not always been supported, such as in the case of Larsen, McGill, and Palmer (2012), who found media to be rated lowest among students asked to report where they learned about the field of nursing, and Law and Arthur (2003), who discovered that there wasn't a statistically significant relationship between media exposure and perception of the nursing field among nursing students. The hypotheses from these studies may not have been supported because they directly asked students what influenced them, or it could have resulted

from the secondary role that nurses often play in medical dramas. However, cultivation analysis asks about exposure and perceptions independently to draw a correlation between viewing television and giving a “television answer” to questions.

Sample and Survey Design

The sample was taken from the pre-health student organization at a mid-sized southeastern university. The pre-health student organization from which the sample was drawn includes students ranging in classification from freshman to senior. The survey was created through Qualtrics and was sent to the email Listserv of the pre-health student organization in order to recruit participants. The principal investigator attended a meeting of this organization on a date with high attendance to introduce the project to the potential participants.

The survey included questions in the area of television viewing, college major, career intention, career motivation, perceptions of the career, and active steps that the participants have taken to learn about their careers. The survey can be found in Appendix A at the end of the paper. The survey included questions, adapted from Czarny et al. (2008) to determine whether or not the participant is engaged in a pre-health curriculum or plans to attend medical school and how far the student is in their career. To gauge television viewing, the survey contained a section designed to measure how often the participants view television in general and medical dramas and particular. General television habits were first gauged through questions that were taken from the Annenberg Health Survey. Questions adapted from Bury and Li (2013) as well as Banerjee, Alleman, and Rapoport (2013) were utilized to examine the use of streaming and other new viewing technologies in medical drama viewing.

Next, questions adapted from Czarny et al. (2008) and the Annenberg Health Survey were used to measure whether the participants watch medical dramas. Then, questions about the frequency of illnesses measured the extent to which students give the television answer as opposed to the real world answer in regard to health conditions. Students were asked to rate how the conditions that they diagnose might be distributed. The television answers are taken from Ye and Ward (2010), and the real world answers are taken from the CDC's National Hospital Care Survey factsheet. The pilot study yielded a need to more clearly define the scale for the different illnesses, with participants being confused as to whether they were being asked how many patients total or out of what number. In addition, the question about CPR needed to be changed because participants weren't sure if CPR itself was attributed to saving lives or whether the question applied to all patients who received CPR along with other lifesaving measures.

Next, extrinsic and intrinsic motivation were measured, using Kusrkar, Croiset, Kruitwagen, & ten Cate's (2011) survey on medical student motivation. Participants were asked yes/no questions about whether students have taken active steps to learn about their careers, such as by attending student organization meetings, taking orientation courses, or working in a medical setting. The survey developed by Scholarios, Lockyer, and Johnson (2003) was used to develop these questions.

Results

In this study, 108 responses were recorded from the pre-health organization, and out of these responses, 58 were usable. Possible reasons for the low completion rate include the fact that students were recruited from the pre-health student organization, which includes many students who are pre-dental, pre-physical therapy, and pre-pharmacy majors. Also, the information letter had to be put in the survey, and many participants dropped out after reading

the information letter. The survey was designed to take 10-15 minutes, aligned with the recommendations of Asiu et al. (1998) and Handwerk et al. (2000, cited in Fan and Yan, 2010). Asiu (1998) found that students feel over-surveyed; perhaps this had an impact. Due to the goal of maintaining anonymity, an impersonal letter was used (Heerwegh, 2005), which is related to lower responses. Perhaps today's students are more sensitive to survey completion times, which could indicate another reason for difficulties.

Students in each phase of their pre-medical education were recruited, with 17 participants in their freshman year, 13 in their sophomore year, 13 in their junior year, and 15 in their senior year of college. It turned out that more students were watching the major medical dramas from a few years ago than they are the new medical dramas that are only a few seasons old. Students responded to the open-ended question requesting that participants list the medical television programs that they watched and more commonly watched fictional medical dramas have been around a while and that ended a few years ago, such as *Scrubs* and *House*, and one of the longest running medical dramas, *Grey's Anatomy*, which is in its 13th season. The television programs reported can be found in Table 1. Among the documentary and reality programs were *Untold Stories of the ER*, *Code Black*, and *Botched*, which can be found in Table 2. Some of the results, such as the link between television viewing and motivation, were expected, while other results contradicted the hypotheses.

Medical Drama Viewing and Perceptions of Health Conditions

In this study, participants were asked questions about their perceptions of the prevalence of various common health issues; their intrinsic and extrinsic career motivations; their television viewing habits both in general and pertaining to programs that focus on medicine; experience in the career field of medicine; and demographic factors such as year in school and parents'

income. One question included in the survey asked what percentage of patients have certain types of conditions, but this item was recoded after it was found that students with more career experience simply put lower percentages for everything to convey a better idea of what conditions students thought were most common.

A positive relationship between medical drama viewing and estimates of the commonality of cancer was statistically significant when measured based on recoding the percentage ratings as rankings ($r=.304$, $n=49$, $p<.05$). The correlation approached statistical significance when measured based on students' estimations of how many cases out of 100 fell into that category. Viewing medical dramas was linked to an increased perception of the prevalence of cancer, which is one of the most frequently portrayed health issues on medical dramas, but there was no relationship between viewing medical dramas and rankings of other health conditions. Medical documentary viewing was linked to an increased perception of the prevalence of nonischemic heart disease ($r=.401$, $n=49$, $p<.05$). Therefore, Hypothesis 1 was partly supported. The author recoded the percentage ratings as rankings upon seeing discrepancies in which increased experience led to consistently decreased ratings. When the items were recoded into categories based on whether they were common real life conditions or common conditions portrayed on television, watching medical documentaries had a moderate positive relationship with estimates of the prevalence of conditions that are the most common in real life. The results of the Pearson correlation tests performed to find relationships between viewing and medical conditions is shown in Table 3.

Watching medical television had no statistically significant relationship with estimating the percentage of deaths caused by chronic and acute illnesses, nor with CPR survival rates. Therefore, Hypothesis 2 was not supported, and the results were contrary to the expected results

and Van Den Bulck's (2002) findings that CPR survival rates are higher on television than in real life. This finding is contrary to the expected results and those found by Van Den Bulck (2002) among the general population but potentially extending the findings of Hetsroni (2009), who found that patients on medical dramas were more likely to die than patients in real life, to a sample of pre-medical students.

Experience in the Medical Field and Perceptions of Health Conditions

In addition to the items related to television viewing as a source of information about medicine, students were asked questions about their experience in the medical field. Different types of experiences, including actual job experience related to the health field volunteer work in several health-related settings, attending meetings of student and professional organizations were asked about. After responses were collected, the author combined the job, shadowing, and volunteering items into one variable, called "direct experience" to create a higher level of variable and enable more robust statistical testing. The items for student and professional organization participation, as well as communicating with academic staff and employer, were recoded under the variable called "indirect experience." All of the experience items were also added together to create the variable "total experience," which was used to determine correlations between type of experience and the other variables examined in the study. The common television conditions identified by Ye & Ward (2010) were combined under the variable "Television Conditions," while those identified by the CDC Emergency Room Factsheet were recoded under the variable "Real Life Conditions." Direct experience had a negative relationship with students' estimates of nonischemic heart disease at the level of statistical significance, as shown in Table 4 ($r=-.265$, $n=49$, $p<.05$). Therefore, Hypothesis 3 was not

supported in the current study, as each health condition was for the most part rated lower, both when examined as percentages and rankings.

Direct Experience and Career Perceptions

The analysis demonstrated a strong and significant relationship between direct experience and intrinsic motivation, as shown in Table 10 ($r=.484$, $n=59$, $p<.05$); therefore, Hypothesis 4a was supported. No relationship was found between experience and extrinsic motivation; consequently, Hypothesis 4b was not supported. Items of intrinsic and extrinsic motivation were examined to determine a relationship between television viewing and motivation, as well as with experience in the field. The intrinsic items were coded together in the category of Intrinsic Motivation, while the extrinsic items were grouped into the variable called Extrinsic Motivation. Extrinsic motivation did not have a relationship with direct experience, but it a strong positive correlation existed between extrinsic and intrinsic motivation, showing that when students experience one type of motivation, they tend to experience the other as well. The author recoded the variables to see if the results would be any different if the percentage rankings were converted into rankings, with the lowest percentage being assigned to the value of “1,” the next to the lowest to the value of “2” up to highest percentage, which was coded as “9.” However, the results of the recoding didn’t differ significantly from the original results. The relationship between the recoded ranking variables and experience can be found in Table 8.

Motivation Types and Television Viewing

Viewing television had a negative relationship with several intrinsic motivation items. . Medical drama and documentary viewing both had a negative relationship with experiencing intense feelings when communicating one’s own ideas related to the medical field ($n=59$, $r=.360$,

$p < .05$ for documentaries; $n = 59$; $r = .361$; $p < .05$ for medical dramas). The results of the correlation test can be seen in Table 5. Therefore, Hypothesis 5A was partially supported. No relationship was found between medical television viewing and extrinsic motivation, with the exception of a negative relationship between viewing documentaries and feeling important when succeeding in medical studies ($r = -.327$; $n = 59$; $p < .05$); therefore, Hypothesis 5b was mostly unsupported. The results can be seen in Table 6. General television viewing had a negative relationship with experiencing pleasure when reading works by interesting medical authors ($r = -.329$, $n = 53$; $p < .05$) However, general television viewing was linked to higher ratings of experiencing a “high” feeling when learning about medicine ($r = .284$, $n = 53$, $p < .05$) and as can be seen in Table 7.

Research Questions

In this study, medical documentaries had a positive relationship with percentage ratings of the commonality of heart disease, chest pain, and cerebrovascular disease at the level of statistical significance. The correlation test showed that general television viewing was aligned with the effects of medical drama viewing in that general viewing had a negative relationship with rankings of pneumonia, which is one of the top reasons for emergency room visits in real life, at the level of statistical significance. Medical drama viewing didn't show a relationship with pneumonia estimates, but it did have a relationship with cancer, as previously mentioned. This finding supports that in some cases, genre can have an impact on the effects experienced. General television viewing had a slight negative relationship with CPR survival rates that approached statistical significance, but medical television viewing had no relationship with CPR survival rates. Therefore, the answer to Research Question 1 is that in this study, genre did influence the effects experience, and that medical documentaries, medical dramas, and general television viewing had distinct effects.

Characteristics of viewing such as watching television with others and watching through traditional means such as cable or through new technologies such as through streaming services were also analyzed. A positive but nonsignificant relationship was discovered between reported Netflix preference and weekend viewing. Another positive relationship, albeit one that didn't reach the level of significance, was discovered between viewing television through streaming services such as Netflix and YouTube hours spent viewing medical dramas. Therefore, the answer to Research Question 2 was that the mode of viewing appears to have some impact on the volume of viewing. However, the vast majority of participants indicated preferring Netflix; therefore, the sample of those who rated YouTube, cable/satellite, and other streaming services is relatively small. Those who reported that they most often watched television through Netflix, free streaming services, and timeshifting had a tendency to rate their medical documentary viewing as higher than other participants. ANOVA tests determined that students who reported most often watching medical dramas in the company family, friends, other pre-medical students, or alone didn't have a significant impact on viewing habits in most categories, but students who assigned a high rating to watching medical dramas with family watched more of these programs. Therefore, the answer to Research Question 3 was that while viewing with other pre-medical students didn't have a relationship with viewing, watching programs with family had a slight but nonsignificant relationship with medical drama viewing.

Discussion

The current study provides a view of the genre effects that can occur when students watch television programming related to their chosen careers and gives more insight into the relationship between several aspects of anticipatory socialization and career perceptions. Like Grabe and Drew (2007), the current thesis provides a response to Morgan and Shanahan's call

for genre studies to demonstrate how the effects of watching particular genres differ from watching television in general.

The fact that cultivation effects were found through correlations provides an answer to the criticism of those such as Potter (1993), who argued that rigorous statistical tests don't support the existence of cultivation effects. In the current study, television viewing had a solid relationship with measures of intrinsic motivation, which is arguably the form of motivation most linked to increased performance. The study adds to the body of research beginning with Signorielli (1993) showing that television encourages a way of thinking about the world of work that isn't focused on an inherent satisfaction with the work itself. Also, it adds to the idea that heavy viewers believe that certain occurrences that are overrepresented on television are more common in the real world than they actually are. In the current study, cancer was the item overrepresented in medical television that was also linked to perceptions that it is more common in the real world than it actually is.

Medical drama viewing had a negative relationship with intrinsic motivation as a whole but had a positive relationship with feeling a "high" related to one's medical studies. Uses and gratifications researchers have found that seeking out dramatic content through television is related to seeking excitement through one's career. The study supports both the idea that cultivation effects related to viewing medical dramas are present in medical students, as well as to the uses and gratifications research that suggests that people tend to seek to meet their needs and wants both through media and through career choices.

The finding that general television viewing had a slight negative relationship with CPR survival rates, while contradicting the hypothesis, supports the idea that television portrays the world as being more dangerous and less positive than real life. General television viewing, on the

other hand, had a negative relationship, which shows that in this case, the finding that heavy viewers hold higher estimates than light viewers doesn't extend to pre-medical students. However, they support Hetsroni's (2009) finding that the patients on medical dramas are at greater risk of dying than patients in the real world.

The current study demonstrated the importance of genre in that documentary viewing had distinct effects that were distinct from medical drama and general television viewing, thus echoing and focusing the findings of Barthe, Leone, and Lateano (2007) and Mancini (2013), who each found that genre has an impact on the effects experienced. Medical documentaries showed a potential for increasing awareness of the major health conditions in contemporary society. In the current study, medical documentary viewing was related to increased ratings of the most common health problems that appear in emergency rooms, including heart disease, chest pain, and cerebrovascular disease. Perhaps this also has to do with these diseases being serious and more interesting for the purposes of reality-based programming, which would also be aligned with mean world effects, in which more dramatic events are portrayed on television. That the increased awareness of common health conditions was related to medical documentary viewing but not to the other genres studied or even to experience shows the unique potential of documentaries to educate future doctors on common chronic health conditions.

An active awareness of how medical dramas and documentaries function to influence our perceptions could help to maximize the benefits of both genres by knowing what uses and gratifications are most effectively provided by each genre. For example, students, advisors, and professors could benefit from the knowledge that watching documentaries has the potential to increase knowledge of common medical conditions, and that viewing medical dramas has the potential to encourage critical thought on how doctors in the real world should respond to

difficult medical dilemmas. As mentioned by Weaver, Wilson, and Langendyk (2014), that isn't to say that medical dramas don't have their own value, as they can provide students with examples of the most difficult ethical issues faced by doctors and provide a starting point for discussions on medical ethics.

The author observed that experience seemed to actually have a negative relationship with the ratings of the prevalence of health conditions, suggesting that something else may be going on, such as that as students gain experience, they see a more diverse range of conditions and thus rate each individual critical health condition lower. However, even when the ratings were recoded as rankings, the hypothesis was not supported. Students with more experience perhaps had the perspective of seeing the full range of health conditions that aren't shown on television, including less serious medical conditions, and thus rated the prevalence of each individual health condition lower.

Experience, medical dramas, and medical documentaries each provided a perspective on the medical field, showing the importance of learning about one's career from a variety of places. Intrinsic motivation was found to be strongly linked with direct experience and to also have a slight positive relationship with higher estimates of chronic illness, but direct experience did not have a significant correlation with estimates of chronic and acute illness in the current study. Perhaps students with intrinsic motivation use more sources of information, including those not asked about in this study, thus explaining their more realistic ratings of chronic illness as well as higher ratings of personal experience. Students who are interested in the science aspect of medicine may go out of their way, using a number of sources, including Netflix, YouTube, and Ted Talks, which were each mentioned when students were asked what documentaries they saw, to select niche-type documentaries that align with their interests, certainly supporting the

idea that new communication technologies increase the relevance of uses and gratifications theory at a time when there are more choices than ever before.

Each source of information about the medical field, including medical dramas, medical documentaries, general television, and experience, had a unique relationship with motivation. Interestingly, viewing medical dramas had a relationship with experiencing a “high” when learning about medicine, perhaps indicating the tendency for viewers of dramatic television to seek out exciting situations both in entertainment and career areas. Otherwise, viewing television appeared to have a negative relationship with intrinsic motivation items. Perhaps this has to do with students being more interested in the relational aspects of being a doctor than the actual subject material, which aligns with Signorielli (1993), who noticed an emphasis on content not relevant to the job itself but more related to extrinsic benefits and relational aspects of the job. From a uses and gratifications perspective, perhaps students with lower motivation are less sure about their career choices and watch medical dramas to gain more information on why people become doctors and about doctors’ lives.

Direct experience was the strongest predictor of intrinsic motivation, showing that going out of one’s way to learn about one’s career field through volunteer work or shadowing indicates more passion for the career in question. From a uses and gratifications perspective, going beyond the comfort of one’s television or computer screen shows a greater desire for knowledge and participation in the field. In general, while medical documentaries were associated with a greater awareness of health conditions, viewing television of any genre wasn’t positively associated with motivation, with the exception of the positive relationship between experiencing a “high” when learning about medicine and medical drama viewing. None of the factors studied appeared to have a large relationship with extrinsic motivation as a whole.

While the study extended research on career motivation, this study is cross-sectional in nature, which makes it impossible to determine causation. For example, it is difficult to tell if the positive relationship between career motivation and years in school has to do with motivation increasing over time or less motivated students changing majors. Also, it is difficult to tell for certain if medical drama viewing causes lower motivation or if students who aren't as motivated by the content of these studies more often seek out these programs for their suspenseful content. Longitudinal research examining the same group of students over their college career could help to answer some of these questions.

From this study, intrinsic and extrinsic motivation were positively correlated, showing that they are closely related. In fact, the strongest indicator of extrinsic motivation was actually intrinsic motivation, and vice versa. It appears that students who watch more medical dramas have lower motivation, but it is hard to tell if this is because medical dramas led to an inaccurate perception and uninformed decision to pursue the career, or if the relationship may have to do with the fact that these shows present a more negative view of the medical profession.

Limitations and Conclusion

In conclusion, this study aimed to gain insight into the relationship between pre-medical students' perceptions of their careers, as well as any proactive career-related behaviors that mediate these effects. The effects measured included how students view health conditions, thus extending the research of Chung (2014) and Van den Bulck (2002) on media effects on the general public's view of health issues. However, limitations of these findings included that the participants weren't questioned about family medical history and other factors that could lead to differing perceptions, and the author wasn't able to conduct focus groups to gain additional context as to why experience is linked to lower ratings of conditions.

Sampling limitations also present limitations in this study. The small sample size was a significant limitation and limits the potential for generalizing the study to the population as a whole. The use of a sample from one university in the Southeast is also a limitation, as regional cultural differences and characteristics of the particular institution could have an impact on results. The recruitment of voluntary participants also presents a limitation, as students more interested in academic research and career motivations may be more likely to participate in such a study. The participants were also recruited from the pre-health student organization, which could indicate that the students surveyed have a higher level of motivation and engagement than pre-medical majors who don't participate in such an organization.

This study has the potential to help pre-health advisors and professors in guiding students, such as through showing that medical documentaries may be helpful in learning about common conditions that students may treat as doctors. Also, the link between direct experience and intrinsic motivation supports the importance of work and/or volunteer experience as a prerequisite to medical school, as students with experience have more intrinsic motivation. Also, a link between streaming television and increased viewing shows a potential of new communication technologies to create more heavy viewers of television and thus increase cultivation effects.

References

- About *Grey's Anatomy* (n.d.). Retrieved from <http://abc.go.com/shows/greys-anatomy/about-the-show>
- Aguero (2016). CM's top 10 universities for pre-med students. *College Magazine*. Retrieved from <http://www.collegemagazine.com/cms-top-10-universities-pre-med-students/>
- Ahern, L. (2012). The role of media system development in the emergence of postmaterialist values and environmental concern: A cross-national analysis. *Social Science Quarterly*, 93(2), 538-557.
- Asiu, B. W., Antons, C. M., & Fultz, M. L. (1998). Undergraduate perceptions of survey participation: Improving response rates and validity. Paper presented at the The Annual Meeting of the Association of Institutional Research, Minneapolis, Minn.
- Banerjee, A., Alleman, J., & Rappoport, P. (2013). Video-viewing behavior in the era of connected devices. *Communications & Strategies*, (92), 19.
- Banerjee, S. C., Greene, K., Krcmar, M., Bagdasarov, Z., & Ruginyte, D. (2008). The role of gender and sensation seeking in film choice: Exploring mood and arousal. *Journal of Media Psychology*, 20(3), 97-105.
- Barthe, E. P., Leone, M. C., & Lateano, T. A. (2013). Commercializing success: The impact of popular media on the career decisions and perceptual accuracy of criminal justice students. *Teaching in Higher Education*, 18(1), 13-26.
doi:10.1080/13562517.2012.694099
- Baszanger, I. (1985). Professional socialization and social control: From medical students to general practitioners. *Social Science & Medicine*, 20(2), 133-143. doi:10.1016/0277-9536(85)90298-9

- Beaton, C. (2016). The too-many-passions problem: 4 tips to help millennials choose a perfect career. Retrieved from <http://www.forbes.com/sites/carolinebeaton/2016/03/29/the-too-many-passions-problem-4-things-you-can-do-today-to-choose-your-perfect-career/#4360444e646f>
- Becker, H.S., Hughes, E. G., & Geer, B. (1963). *Boys in white: Student culture in medical school*. University of Chicago Press.
- Bianco, R. (2015, September 24). Critic's corner. *USA Today*.
- Bury, R., & Li, J. (2013). Is it live or is it timeshifted, streamed or downloaded? Watching television in the era of multiple screens. *New Media & Society*, 592-610. doi: 10.1177/1461444813508368
- Centers for Disease Control (2012). Chronic diseases: The leading causes of death and disability in the United States. Retrieved from <http://www.cdc.gov/chronicdisease/overview/index.htm>
- Centers for Disease Control (n.d.). National Hospital Care Survey. Retrieved from http://www.cdc.gov/nchs/data/nhcs/ED_Factsheet.pdf
- Centers for Disease Control and Prevention (2012). Chronic disease review. Retrieved from <http://www.cdc.gov/chronicdisease/overview/>
- Chang, E., Lee, A., Byeon, E., & Lee, S. M. (2015). Role of motivation in the relation between perfectionism and academic burnout in Korean students. *Personality and Individual Differences*, 82, 221-226. doi:10.1016/j.paid.2015.03.027
- Chertok, I. R. A., Barnes, E. R., & Gilleland, D. (2014). Academic integrity in the online learning environment for health sciences students. *Nurse Education Today*, 34(10), 1324-1329.

- Cho, S., & Krasser, A. H. (2011). What makes us care? The impact of cultural values, individual factors, and attention to media content on motivation for ethical consumerism. *International Social Science Review*, 86(1/2), 3-23.
- Chory-Assad, R. M., & Tamborini, R. (2003). Television exposure and the public's perceptions of physicians. *Journal of Broadcasting & Electronic Media*, 47(2), 197-215.
- Chung, J. E. (2014). Medical dramas and viewer perception of health: Testing cultivation effects. *Human Communication Research*, 40(3), 333-349.
- Cortese, J. (2014). Uses and gratifications perspective of media effects. In M. Eastin (Ed.), *Encyclopedia of media violence* (pp. 367-370). Thousand Oaks: SAGE Publications Ltd. doi: 10.4135/9781452299655.n147
- Czarny, M. J., Faden, R. R., & Sugarman, J. (2010). Bioethics and professionalism in popular television medical dramas. *Journal of Medical Ethics*, 36(4), 203-206.
- Czarny, M. J., Faden, R. R., Nolan, M. T., Bodensiek, E., & Sugarman, J. (2008). Medical and nursing students' television viewing habits: Potential implications for bioethics. *The American Journal of Bioethics*, 8(12), 1-8.
- Dainton, M., & Zelle, E. D. (2005). Explaining theories of mediated communication. In M. Dainton & E.D. Zelle (Eds.), *Applying communication theory for professional life: A practical introduction* (pp. 196-218). Thousand Oaks, CA: Sage.
- DeCelles, K. A. (2007). *Locked up: Exploring the complex nature of conflicting values systems and their effects on work attitudes* (Doctoral dissertation, University of Maryland, College Park).
- Diem, S. J., Lantos, J. D., & Tulsy, J. A. (1996). Cardiopulmonary resuscitation on television—miracles and misinformation. *New England Journal of Medicine*, 334(24), 1578-1582.

- Dorfman, L., Woodruff, K., Chavez, V., & Wallack, L. (1997). Youth and violence on local television news in California. *American Journal of Public Health, 87*(8), 1311-1316.
- Eisend, M., & Möller, J. (2007). The influence of TV viewing on consumers' body images and related consumption behavior. *Marketing Letters, 18*(1-2), 101-116.
- Essex-Lopresti, M. (2006). Essay: Your Life in Their Hands. *The Lancet, 368*, S24-S25.
- Foskett, N. H., & Hemsley-Brown, J. (1999). Invisibility, perceptions and image: Mapping the career choice landscape. *Research in Post-Compulsory Education, 4*(3), 233-248.
- Genzlinger, N. (November 1, 2014 Saturday). Pass the scalpel, please, I'm ready for my close-up. *The New York Times*. Retrieved from www.lexisnexis.com/hottopics/lnacademic
- Gerbner, G. (1970). Cultural indicators: The case of violence in television drama. *The Annals of the American Academy of Political and Social Science, 388*(1), 69-81.
- Gerbner, G., & Gross, L. (1976). Living with television: The violence profile. *Journal of Communication, 26*(2), 172-194.
- Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1980). The “mainstreaming” of America: Violence profile no. 11. *Journal of Communication, 30*(3), 10-29.
- Gerbner, G., Gross, L., Morgan, M., Signorielli, N., & Shanahan, J. (2002). Growing up with television: Cultivation processes. In Bryant, J., & Zillmann, D. *Media Effects: Advances in Theory and Research*. Mahwah, N.J.: Lawrence Erlbaum Associates.
- Giammarco, E. A., Schneider, T. J., Carswell, J. J., & Knipe, W. S. (2015). Video game preferences and their relation to career interests. *Personality and Individual Differences, 73*, 98-104.
- Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. Harvard University Press.

- Goodman, K. (2007). Imagining doctors: Medical students and the TV medical drama. *Virtual Mentor*, 9(3), 182.
- Grabe, M. E., & Drew, D. G. (2007). Crime cultivation: Comparisons across media genres and channels. *Journal of Broadcasting & Electronic Media*, 51(1), 147-171.
doi:10.1080/08838150701308143
- Greenberg, B. S. (1982). Television and role socialization: An overview. *Television and behavior: Ten years of scientific progress and implications for the Eighties*, 2, 179-190.
- Greenberg, B. S., Neuendorf, K., Rothfuss, N. B., & Henderson, L. (1982). The soaps: What's on and who cares? *Journal of Broadcasting & Electronic Media*, 26(2), 519-535.
- Hallam, J. (2009). Grey's Anatomy: scalpels, sex and stereotypes. *Medical Humanities*, 35(1), 60-61.
- Haroldson, R. (2014). *Human trafficking: As viewed through the eyes of criminal justice students* (Doctoral dissertation, Iowa State University).
- Heerwegh, D. (2005). Effects of personal salutations in e-mail invitations to participate in a web survey. *Public Opinion Quarterly*, 69, 588-598
- Herring, J. L. (2007). Media influence on the work ethic among the baby boom generation.
- Herzog, H. (1942). What do we really know about daytime serial listeners. *Radio research*, 1943, 3-33.
- Hetsroni, A. (2009). If You Must Be Hospitalized, Television Is Not the Place: Diagnoses, Survival Rates and Demographic Characteristics of Patients in TV Hospital Dramas. *Communication Research Reports*, 26(4), 311-322.
doi:10.1080/08824090903293585

- Hirsch, P. M. (1980). The “Scary World” of the Nonviewer and Other Anomalies: A Reanalysis of Gerbner et al.'s Findings on Cultivation Analysis Part I. *Communication Research*, 7(4), 403-456.
- Hoffner, C. A., Levine, K. J., & Toohey, R. A. (2008). Socialization to work in late adolescence: The role of television and family. *Journal of Broadcasting & Electronic Media*, 52(2), 282-302.
- Hoffner, C. A., Levine, K. J., Sullivan, Q. E., Crowell, D., Pedrick, L., & Berndt, P. (2006). TV characters at work: Television’s role in the occupational aspirations of economically disadvantaged youths. *Journal of Career Development*, 33(1), 3-18.
- Holbert, R. L., Kwak, N., & Shah, D. V. (2003). Environmental concern, patterns of television viewing, and pro-environmental behaviors: Integrating models of media consumption and effects. *Journal of Broadcasting & Electronic Media*, 47(2), 177-196.
- 'House M.D.' announces the end (2013). . *AFP - Relaxnews* (English International Version), Retrieved from www.lexisnexis.com/hottopic/Inacademic
- Irvine, D. (1999). The performance of doctors: the new professionalism. *The Lancet*, 353(9159), 1174-1177.
- Jablin, F. M., & Putnam, L. L. (Eds.). (2000). *The new handbook of organizational communication: Advances in theory, research, and methods*. Sage Publications.
- Jakobovits, L. A., & Lambert, W. E. (1963). The effects of repetition in communication on meanings and attitudes. *Television and human behavior*, 167-76.
- Jones, A. (2016). *Grey's Anatomy* renewed for Season 13 at ABC. Retrieved from <http://www.cinemablend.com/television/Grey-Anatomy-Renewed-Season-13-ABC-122427.html>

- Kalisch, P. A., Kalisch, B. J., & Scobey, M. (1983). *Images of nurses on television*. Springer Pub.
- Katz, E., & Lazarsfeld, P. F. (1955). *Personal influence: The part played by people in the flow of mass communications*. Transaction Publishers.
- Katz, E., Blumler, J. G., & Gurevitch, M. (1973). Uses and gratifications research. *The Public Opinion Quarterly*, 37(4), 509-523.
- Kim, S., Carvalho, J. P., Davis, A. G., & Mullins, A. M. (2011). The view of the border: News framing of the definition, causes, and solutions to illegal immigration. *Mass Communication & Society*, 14(3), 292-314. doi:10.1080/15205431003743679
- Kindig, D. A., Panzer, A. M., & Nielsen-Bohlman, L. (Eds.). (2004). *Health literacy: A prescription to end confusion*. National Academies Press.
- Kusurkar, R., Croiset, G., Kruitwagen, C., & ten Cate, O. (2011). Validity evidence for the measurement of the strength of motivation for medical school. *Advances in Health Sciences Education*, 16(2), 183-195.
- Lapsansky, C. (2010). Evaluating the “Baby Jack” Storyline on *the Bold and the Beautiful*. *Cases in Public Health Communication & Marketing*, 4, 8-27.
- Larsen, P. D., McGill, J. S., & Palmer, S. J. (2003). Factors influencing career decisions: Perspectives of nursing students in three types of programs. *Journal of Nursing Education*, 42(4), 168-173.
- Law, W., & Arthur, D. (2003). What factors influence Hong Kong school students in their choice of a career in nursing? *International Journal of Nursing Studies*, 40(1), 23-32.
- Levine, K. J., & Hoffner, C. A. (2006). Adolescents' conceptions of work: What Is learned from different sources during anticipatory socialization? *Journal of Adolescent Research*, 21(6), 647-669. doi:10.1177/0743558406293963

- Levine, K. J., & Hoffner, C. A. (2006). Adolescents' Conceptions of Work What Is Learned From Different Sources During Anticipatory Socialization?. *Journal of Adolescent Research, 21*(6), 647-669.
- Lichter, S. R., Lichter, L. S., & Amundson, D. (1997). Does Hollywood hate business or money? *Journal of Communication, 47*(1), 68-84.
- Maharaj, S. H. (2008). *An investigation of the factors affecting the career choice of selected health-care students (physiotherapy, chiropractic, medicine and occupational therapy) in KwaZulu Natal* (Unpublished doctoral dissertation). Durban University of Technology, South Africa
- Malmsheimer, R. (1988). *Doctors only: The evolving image of the American physician* (No. 25). Greenwood Pub Group.
- Mancini, D. E. (2013). The "CSI effect" in an actual juror sample: Why crime show genre may matter. *North American Journal of Psychology, 15*(3), 543-564.
- Mann, K. V. (2011). Theoretical perspectives in medical education: past experience and future possibilities. *Medical Education, 45*(1), 60-68.
- McGrath, D. L. (2012). Extrinsic and Intrinsic Workplace Values in Education. *International Journal of Learning, 18*(3).
- McHugh, K. (2012). Nurse Jackie and the politics of care. *Nursing Outlook, 60*(5 Suppl), S12-S18.
doi:10.1016/j.outlook.2012.06.003
- Medicine on Television. (1975). *British Medical Journal, 1*(5957), 539.
- Moghangard, E. (2016). Is fear suffocating your potential? The Millennial Kryptonite. *HuffPost Arts and Culture*. Retrieved from http://www.huffingtonpost.com/elnaz-moghangard/is-fear-suffocating-your-_b_9572532.html

- Morgan, M., & Shanahan, J. (1997). Two decades of cultivation research: An appraisal and meta-analysis. *Annals of the International Communication Association*, 20(1), 1-45.
- Morgan, M., & Shanahan, J. (2010). The state of cultivation. *Journal of Broadcasting & Electronic Media*, 54(2), 337-355.
- Morgan, M., Shanahan, J., & Signorielli, N. (2008). Cultivation processes. In J. Bryant & M.B. Oliver (Eds.) *Media effects: Advances in theory and research*, 34.
- Morgan, M., Shanahan, J., & Signorielli, N. (2015). Yesterday's new cultivation, tomorrow. *Mass Communication and Society*, 18(5), 674-699.
- Mortimer, J. T., Zhang, F. L., Hussemann, J., & Wu, C. Y. (2014). Parental economic hardship and children's achievement orientations. *Longitudinal and life course studies*, 5(2), 105.
- Mulligan, K., & Habel, P. (2013). The implications of fictional media for political beliefs. *American Politics Research*, 41(1), 122-146. doi:10.1177/1532673X12453758
- Muldary, T. W. (1983). *Burnout among health professionals: Manifestations and management*. Appleton-Century-Crofts.
- Murphy, S. T., Frank, L. B., Moran, M. B., & Patnoe-Woodley, P. (2011). Involved, transported, or emotional? Exploring the determinants of change in knowledge, attitudes, and behavior in entertainment-education. *Journal of Communication*, 61(3), 407-431.
- Mutz, D. C., & Nir, L. (2010). Not necessarily the news: Does fictional television influence real-world policy preferences? *Mass Communication and Society*, 13(2), 196-217.
- Nivet, M. A. (2008). Envisioning future selves: African American medical students on the path to careers in academic medicine.
- Pfau, M., & Mullen, L. J. (1995). The influence of television viewing on public perceptions of physicians. *Journal of Broadcasting & Electronic Media*, 39(4), 441.

- Pfau, M., Mullen, L. J., Deidrich, T., & Garrow, K. (1995). Television viewing and public perceptions of attorneys. *Human Communication Research, 21*(3), 307-330.
doi:10.1111/j.1468-2958.1995.tb00349.x
- Podlas, K. (2006). The CSI Effect and Other Forensic Fictions. *Loy. LA Ent. L. Rev., 27*, 87.
- Potter, W. J. (1991). The linearity assumption in cultivation research. *Human Communication Research, 17*(4), 562-583.
- Potter, W. J. (1993). Cultivation theory and research. *Human Communication Research, 19*(4), 564-601.
- Quick, B. L., Morgan, S. E., LaVoie, N. R., & Bosch, D. (2013). Grey's Anatomy viewing and organ donation attitude formation: Examining mediators bridging this relationship among African Americans, Caucasians, and Latinos. *Communication Research, 0093650213475476*.
- Record, R. A. (2011). Cultivating Miracle Perceptions: Cultivation Theory and Medical Dramas. (Unpublished master's thesis, University of Kentucky).
- Renes, R. J., Mutsaers, K., & van Woerkum, C. (2012). The difficult balance between entertainment and education a qualitative evaluation of a Dutch health-promoting documentary series. *Health promotion practice, 13*(2), 259-264.
- Romer, D., Jamieson, K. H., & Aday, S. (2003). Television news and the cultivation of fear of crime. *Journal of Communication, 53*(1), 88-104.
- Rubin, A. M. (1985). Uses of Daytime Television Soap Operas by College Students. *Journal of Broadcasting and Electronic Media, 29*(3), 241-58.

- Russell, C. A., & Buhrau, D. (2015). The role of television viewing and direct experience in predicting adolescents' beliefs about the health risks of fast-food consumption. *Appetite*, 92, 200-206.
- Ryu, S., & Mortimer, J. T. (1996). The “occupational linkage hypothesis” applied to occupational value formation in adolescence. In *Adolescents, work, and family: An intergenerational developmental analysis* (Vol. 6, pp. 167-190). Sage Publications, Inc. Thousand Oaks, CA.
- Sandeep, J. (July 19, 2005). Magical medicine on the TV. *The New York Times*, Retrieved from www.lexisnexis.com/hottopic/inacademic
- Sang, K., Ison, S., Dainty, A., & Powell, A. (2009). Anticipatory socialisation amongst architects: a qualitative examination. *Education + Training*, 51(4), 309-321.
- Scholarios, D., Lockyer, C., & Johnson, H. (2003). Anticipatory socialisation: The effect of recruitment and selection experiences on career expectations. *Career Development International*, 8(4), 182-197.
- Shah, D. V., McLeod, D. M., Kim, E., Lee, S. Y., Gotlieb, M. R., Ho, S. S., & Breivik, H. (2007). Political consumerism: How communication and consumption orientations drive “lifestyle politics”. *The ANNALS of the American Academy of Political and Social Science*, 611(1), 217-235.
- Shanahan, J., Morgan, M., & Stenbjørne, M. (1997). Green or brown? Television and the cultivation of environmental concern. *Journal of Broadcasting & Electronic Media*, 41(3), 305-323.
- Shanahan, J., & Morgan, M. (1999). *Television and its viewers: Cultivation theory and research*. Cambridge University Press.

- Shanahan, J., Scheufele, D., Fang, Y., & Hizi, S. (2004). Cultivation and spiral of silence effects: The case of smoking. *Mass Communication & Society*, 7(4), 413-428.
- Shrum, L. J., Burroughs, J. E., & Rindfleisch, A. (2005). Television's cultivation of material values. *Journal of Consumer Research*, 32(3), 473-479.
- Signorielli, N. (1993). Television and adolescents' perceptions about work. *Youth & Society*, 24(3), 314-341. doi:10.1177/0044118X93024003004
- Signorielli, N., & Kahlenberg, S. (2001). Television's world of work in the nineties. *Journal of Broadcasting & Electronic Media*, 45(1), 4-22.
- Signorielli, N., & Morgan, M. (1990). *Cultivation analysis: New directions in media effects research* (Vol. 108). Sage Publications, Inc.
- Simmons, A. (2005). Beyond the premedical syndrome: premedical student attitudes toward liberal education and implications for advising. *NACADA Journal*, 25(1), 64-73.
- Steenland, S. (1990). *What's Wrong with this Picture?: The Status of Women on Screen and Behind the Camera in Entertainment TV*. National Commission on Working Women of Wider Opportunities for Women.
- Steinert, Y., Cruess, R. L., Cruess, S. R., Boudreau, J. D., & Fuks, A. (2007). Faculty development as an instrument of change: A case study on teaching professionalism. *Academic Medicine*, 82(11), 1057-1064.
- Strauman, E. C., & Goodier, B. C. (2011). The doctor (s) in House: An analysis of the evolution of the television doctor-hero. *Journal of Medical Humanities*, 32(1), 31-46.
- Tapper, E. B. (2010). Doctors on display: the evolution of television's doctors. *Proceedings (Baylor University. Medical Center)*, 23(4), 393.
- The 100 Best Jobs (2016). Retrieved from <http://money.usnews.com/careers/best-jobs/rankings/the-100-best-jobs>

- Toff, B. (2009, May 16). 'Grey's' Wins Ratings. *New York Times*. p. 2.
- Turow J. (2010) *Playing Doctor*. New York: Oxford University Press; 1989.
- TV Medical dramas rife with bioethical issues, breaches of professional conduct. (2010, June). *PT in Motion*, 2(5), 12. Retrieved from http://go.galegroup.com/ps/i.do?id=GALE%7CA228508762&v=2.1&u=naal_aub&it=r&p=ITOF&sw=w&asid=9511c609b7be309daf3a939b20d14be3
- Van den Bulck, J. J. (2002). The impact of television fiction on public expectations of survival following inhospital cardiopulmonary resuscitation by medical professionals. *European Journal of Emergency Medicine*, 9(4), 325-329.
- Van den Bulck, J., & Beullens, K. (2007). The Relationship between Docu Soap Exposure and Adolescents' Career Aspirations. *European Journal of Communication*, 22(3), 355-366.
- Vande Berg, L. R. V., & O'Donnell-Trujillo, N. (1989). *Organizational life on television*. Praeger Pub Text.
- Vansteenkiste, M., Matos, L., Lens, W., & Soenens, B. (2007). Understanding the impact of intrinsic versus extrinsic goal framing on exercise performance: The conflicting role of task and ego involvement. *Psychology of Sport and Exercise*, 8(5), 771-794.
- Weaver, R., & Wilson, I. (2011). Australian medical students' perceptions of professionalism and ethics in medical television programs. *BMC medical education*, 11(1), 50.
- Weaver, R., Wilson, I., & Langendyk, V. (2014). Medical professionalism on television: Student perceptions and pedagogical implications. *Health*, 18(6), 597-612
- Weprin, A. (2009). Reviving the Medical Reality Genre. *Broadcasting & Cable*, 139(33), 4.
- Werder, O. (2009). Media effects theories. In S. W. Littlejohn & K. A. Foss (Eds.), *Encyclopedia of communication theory* (Vol. 2, pp. 633-635). Thousand Oaks, CA: SAGE Publications Ltd. doi: 10.4135/9781412959384.n235

- Whiting, J. F. (1963). Plan 17. Physician education, medical television, and patient care. *Television and Human Behavior: Tomorrow's Research in Mass Communication*, 274.
- Wicclair, M. R. (2008). Medical paternalism in *House, MD*. *Medical Humanities*, 34(2), 93-99.
- Williams, G. C., & Deci, E. L. (1996). Internalization of biopsychosocial values by medical students: a test of self-determination theory. *Journal of personality and social psychology*, 70(4), 767.
- Williams, G. C., Saizow, R. B., & Ryan, R. M. (1999). The importance of self-determination theory for medical education. *Academic Medicine*, 74(9), 992-5.
- Ye, Y., & Ward, K. E. (2010). The depiction of illness and related matters in two top-ranked primetime network medical dramas in the United States: a content analysis. *Journal of Health Communication*, 15(5), 555-570

Appendix 1: Survey

This survey includes questions about your career perceptions and goals, as well as your television viewing habits.

The survey is anonymous, meaning that your survey responses cannot be linked to your name or other identifying information, and it is also voluntary. If at any point you decide to not complete the survey, that is fine.

1. Let's start with a question about your career choices. Are you considering becoming a physician?

Answer choices: Yes or No

2. What is your major?
3. Please indicate how many times you have done the following activities to investigate medicine as a career.

Answer choices: Rarely or never, A couple of times, Multiple times

- A. Attending premedical or pre-health student organization meetings
- B. Volunteering with a hospice organization
- C. Attending organized visits from employers
- D. Contacting academic staff
- E. Volunteering at a hospital
- F. Attending employer seminars
- G. Attending professional meetings
- H. Discussing career opportunities with personal or family contacts
- I. Shadowing physicians
- J. Having a job in a medical setting
- K. Contacting employers in your profession
- L. Attending organized visits from professional groups or bodies
- M. Volunteering at a nursing home

4. Please indicate if you have taken the following courses.

- A. The preceptorship course at Auburn
- B. A pre-medical orientation class at Auburn
- C. A pre-medical orientation class at another university

5. Now, let's move on to some questions about your career motivation. Rate the extent to which the following items motivated you toward your career of choice.

Answer choices: Strongly agree, Agree, Somewhat, agree, Neither agree nor disagree, Somewhat disagree, Disagree, Strongly disagree

- A. Because I experience pleasure and satisfaction while learning new things about the medical field
- B. For the pleasure that I experience in broadening my knowledge about medical subjects which appeal to me
- C. Because my premedical studies allow me to continue to learn about many things that interest me
- D. For the pleasure I experience while surpassing myself in my premedical studies
- E. In order to have a better salary later on
- F. For the pleasure I experience when I discover new things never seen before
- G. Because my premedical classes allow me to experience a personal
- H. satisfaction in my quest for excellence in my studies

- I. For the pleasure that I experience when I read interesting authors in the field of medicine
- J. Because of the fact that when I succeed in my premedical studies I feel important
- K. For the satisfaction I feel when I am in the process of accomplishing difficult academic activities
- L. Because I want to have “the good life” later on
- M. For the “high” feeling that I experience while reading about various interesting subjects related to medicine
- N. Because this will help me make a better choice regarding my career
- O. For the pleasure that I experience when I feel completely absorbed by what certain authors have written
- P. Because I think that a medical education will help me better prepare for the career I believe I will enjoy
- Q. For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments
- R. accomplishments
- S. Because eventually it will enable me to enter the job market in a field that I like
- T. Because I want to show myself that I can succeed in my premedical studies
- U. Because I believe that a few additional years of medical education will improve my professional competency
- V. To prove to myself that I am capable of completing medical school
- W. For the intense feelings I experience when I am communicating my own ideas about the field of medicine to others
- X. In order to obtain a more prestigious job later on

6. Now, let's move on to some questions about television viewing. Have you watched a television program in the past year?
7. Please select the response that most accurately represents how often you engage in the following activity.
8. Have you watched a program that can be considered a medical documentary program or medical reality show in the past year?
9. What reality or documentary programs depicting medicine have you watched? If you haven't watched any, write "none."
10. Have you watched a program that can be considered a fictional medical drama in the past year?
11. What fictional medical drama programs have you watched?
12. With whom do you normally watch television shows depicting medicine? Please rank the items below, with the first item being the one that most often applies to you, the second one being the one that applies to you the second most, and so on. Rank only the top three.
 - A. With friends who are also prehealth
 - B. or premedical
 - C. students
 - D. By myself
13. During a typical weekend, including Saturday and Sunday, about how many total hours do you watch television?

14. On a typical weekday, Monday through Friday, about how many hours do you watch television each day?
15. What items best characterize your viewing of medical dramas? Please rank the items below, with the first item being the one that most often applies to you, the second one being the one that applies to you the second most, and so on. Rank only the top three.
 - A. New episodes as they are broadcast on cable/satellite channels
 - B. Reruns on cable/satellite channels
 - C. Reruns on streaming services
 - D. Timeshifted new episodes (saved on DVR or accessed through network sites or apps)
 - E. New episodes and seasons as released on Netflix and other streaming services
16. Select the response that most accurately represents how often you engage in the following activities. Which service/device do you use to watch medical dramas? If you use multiple services, please rank them, with the first item being the one that you most often use, the second one being the one you use the second most, and so on. Rank only the top three.
 - A. cable or satellite
 - B. Netflix
 - C. Other Paid Streaming (Hulu Plus, Amazon Prime, YouTube, etc.)
 - D. Free Streaming Services (YouTube, Hulu, etc.)
 - E. Streaming services provided by networks (such as ABC App and LiveStream, FOX Now, etc.)
17. How many hours do you spend watching programs in the genre of fictional medical dramas in a typical week, including both weekdays and the weekend?
18. How many documentaries or reality television programs about medical topics do you watch in a typical week, including both weekdays and the weekend?
19. Now, let's move on to some health care related items. Please give your closest estimate of what percentage of patients who suffer from cardiopulmonary arrest in a hospital environment and receive CPR survive.
20. Please give your closest estimate of what proportion of hospital visits are caused by the following types of problems. Out of 100 patients, how many suffer from the following?
 - A. Nonischemic heart disease
 - B. Chest pain
 - C. Pneumonia
 - D. Psychosis
 - E. Cerebrovascular disease (includes stroke, aneurysm)
 - F. Injury
 - G. Cancer
 - H. Women's health
 - I. Issues
 - J. Infection
21. Please indicate how often the following types of conditions are attributed as cause of death.
 - A. Chronic Illness
 - B. Acute Illness or Injury

22. Now, we're going to move on to a set of questions about demographics. What year of school are you currently in?

Answer choices: Freshman, Sophomore, Junior, Senior

23. What is your gender?

24. Is a member of your immediate family (brother, sister, parent) in the medical field?

25. Is a member of your extended family (including grandparents, aunts, uncles, cousins) in the medical field?

26. Please estimate your mother's yearly salary.

27. Please estimate your father's yearly salary.

Tables

Table 1

Medical Documentaries Reported

Medical Documentaries	Number
Botched	3
Untold stories of the ER	6
The Incredible Dr. Pol	1
Dr. Jeff: Rocky Mountain Vet	1
Dr. Oakly, Yukon Vet	1
Dr. Dee: Alaskan Vet	1
Sex Sent Me to the ER	1
Resistance	1
Twice Born	2
Ted Talks	1
Extremis	1
surgery and dissection videos on YouTube.	1
Trauma: Life in the ER	2
Mystery Diagnosis	2
Monsters Inside Me	2
Boston Med	3
Mysteries of the ER	1
NY Med	1
Save My Life	1
NY Med	1
Documentaries on Netflix	1

Table 2

Medical Dramas Reported

Medical Dramas	Number
Scrubs	13
Grey's Anatomy	38
Private Practice	2
ER	1
Chicago Med	3
Bones	1
, House	8
Body of Proof	1
Code Black	3
Night Shift	4
Royal Pains	1
Three Rivers	1
Hart of Dixie	1

Table 3

Relationship Between Medical Television Viewing and Rankings of Health Conditions (n=49)

	Medical Drama Viewing	Medical Documentary Viewing
Nonischemic Heart Disease	-.118	.401*
Chest pain	-.005	.014
Pneumonia	-.110	-.102
Psychosis	-.020	-.067
Cerebrovascular	-.055	.146
Injury	-.023	-.165
Cancer	.304*	-.191
Women's Health	.232	-.034
Infection	.155	-.111

**Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 4

Experience and Estimates of Health Conditions, n=49

	Direct Experience	Total Experience	Indirect Experience
Nonischemic Heart Disease	-.265*	-.259*	-.181
Chest pain	.131	.158	.133
Pneumonia	-.083	-.092	-.072
Psychosis	.004	-.027	-.042
Cerebrovascular Disease	-.071	.005	.060
Injury	.123	-.005	-.099
Cancer	-.082	-.062	-.029
Women's Health	-.150	-.129	-.077
Infection	.038	.135	.168

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 5

Medical Television Viewing and Intrinsic Motivation (n=59)

<i>Intrinsic Motivation</i>	Medical Drama Viewing	Medical Documentary Viewing
Satisfaction while learning new things about medicine	-.152	-.265
Pleasure experienced in broadening medical knowledge	-.016	-.087
My studies allow me to learn about interesting things.	-.166	-.057
The pleasure experienced when surpassing myself in my studies	.061	-.045
The intense feelings experienced when I am communicating my own ideas	-.361*	-.360*
The pleasure I experience when I discover new things	-.233	-.139
My classes allow me to experience a personal satisfaction	-.102	.270
The pleasure experienced when I read interesting authors in the field	-.163	-.165
The satisfaction I feel when accomplishing difficult academic work.	-.303*	-.281
The ‘‘high’’ feeling that I experience while reading about medical subjects	-.195	.049
The pleasure that I experience when absorbed by my studies	-.077	-.176
For the pleasure experienced while surpassing myself academically	-.207	.089

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 6

Medical Television Viewing and Extrinsic Motivation (n=59)

Extrinsic Motivation Items	Medical Drama Viewing	Medical Documentary Viewing
Because eventually it will enable me to enter a field that I enjoy	-.229	-.096
Because I want to show myself that I can succeed in my pre-medical studies	-.252	-.248
Because additional medical education will improve my professional competency	-.180	-.023
To prove to myself that I am capable of completing medical school	-.018	-.219
When I succeed in my pre-medical studies I feel important.	-.269	-.327*
Because I want to have “the good life” later on	-.035	.087
In order to obtain a more prestigious job later on	-.128	-.115
In order to have a better salary later on	-.122	.051
Because this will help me make a better choice regarding my career	-.096	-.256
Because I think that a medical education will prepare me for my career..	-.168	-.060

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 7

General Television Viewing and Intrinsic Motivation (n=53)

Intrinsic Motivation	Total Viewing	Weekend Viewing	Weekday Viewing
Pleasure and satisfaction learning new things about medicine	-.075	.008	-.118
The pleasure I experience when completely absorbed by my studies...	-.112	-.082	-.055
Pleasure that I experience in broadening my medical knowledge	-.027	.066	-.091
My studies allow me to learn interesting things	.129	.059	.228
My classes allow me to experience a personal satisfaction	.018	-.048	.146
The pleasure that I experience when I read interesting medical authors	-.329*	-.278*	-.216
The ‘‘high’’ feeling experienced reading about medicine	.284*	.262*	.250
The pleasure experienced while surpassing myself in my studies	.052	.096	.003
The intense feelings I experience when communicating my own ideas...	-.067	-.166	.067
The pleasure I experience when I discover new things	.099	-.020	.175
The satisfaction I feel when accomplishing difficult academic tasks	-.208	-.211	-.073
The pleasure that I experience while I am surpassing myself in one of my accomplishments.	-.005	.027	-.064

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 8

General Television Viewing and Extrinsic Motivation (n=53)

Intrinsic Motivation	Total_Viewing	Weekend Viewing	Weekday Viewing
When I succeed in my pre-medical studies I feel important.	-.191	-.114	-.194
A medical education will help me better prepare for my chosen my career	-.022	.038	-.079
I want to have “the good life” later on	-.177	-.159	-.159
This will help me make a better choice regarding my career	-.116	-.055	-.188
It will enable me to enter the job market in a field I enjoy.	-.155	-.159	-.116
I want to show myself that I can succeed in my pre-medical studies	.049	.004	.071
Additional medical education will improve professional competency	-.046	-.090	.035
To prove to myself that I am capable of completing medical school	.010	.051	-.048
To obtain a more prestigious job later on	-.116	-.034	-.222
In order to have a better salary later on	.097	.164	.162

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 9

Experience and Intrinsic Motivation (n=59)

	Direct Experience	Indirect Experience	Total Experience
Because I experience satisfaction while learning new things about medicine	.252	-.077	.076
For the pleasure experienced in broadening my medical knowledge	.301*	-.267*	-.030
My pre-medical studies allow me to learn about many interesting things.	.220	.018	.125
For the pleasure I experience while surpassing myself in my pre-medical studies	.266*	-.077	.083
For the pleasure I experience when I discover new things never seen before	.423**	-.085	.158
Because my pre-medical classes allow me to experience a personal satisfaction	.252	-.226	-.027
For the pleasure that I experience when I read interesting authors in the field	.364**	.078	.240
When I succeed in my pre-medical studies I feel important.	.315*	.058	.201
For the satisfaction I feel when accomplishing difficult academic work.	.337**	.066	.218
For the “high” feeling that I experience while reading about various interesting medical subjects	.331*	.073	.220
For the pleasure that I experience when completely absorbed by my studies	.291*	.212	.295*
For the pleasure that I experience while I am surpassing myself academically	.213	.047	.141
Because I believe that additional medical education will improve my professional competency	.108	-.132	-.035
For the intense feelings I experience when I am communicating my own ideas about medicine	.340**	-.120	.091

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 10

Experience and Extrinsic Motivation (n=59)

	Direct Experience	Indirect Experience	Total Experience
When I succeed in my pre-medical studies I feel important.	.315*	.058	.201
Because I think that a medical education will prepare me for my career..	.163	-.060	.042
Because I want to have “the good life” later on	.075	.034	.062
Because this will help me make a better choice regarding my career	.051	.025	.043
Because eventually it will enable me to enter a field that I enjoy	.122	-.017	.051
Because I want to show myself that I can succeed in my pre-medical studies	.230	.026	.136
Because I believe that additional medical education will improve my professional competency	.108	-.132	-.035
To prove to myself that I am capable of completing medical school	.028	-.133	-.077
In order to obtain a more prestigious job later on	.128	.022	.081
In order to have a better salary later on	.097	.164	.162

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 11

Experience and Motivation Categories (n=59)

	Direct Experience	Indirect Experience	Total Experience
Intrinsic Motivation	.484**	-.041	.220
Extrinsic Motivation	.181	.006	.097
Total Motivation	.339**	-.021	.159

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).