



Representing illness in medical melodramas on television: a qualitative content analysis of medical diagnoses in *Grey's Anatomy*

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This case study explored the representation of medical illness diagnoses on Grey's Anatomy. Through the use of qualitative content analysis, we compared fictional medical diagnoses to publically available data on the rates of medical diagnoses within contemporary U.S. hospitals. We found that nearly half of the diagnoses made within our sample would be considered either rare, very rare, or extremely rare. Moreover, the most common medical diagnoses in contemporary U.S. hospitals account for a mere 6% of all diagnoses made on Grey's. These findings extend and support prior observations that medical melodramas misrepresent the hospital context. Fictional portrayals of health care have the capacity to impact viewer expectations about real hospital care, and thus, our study adds to conversations involving the intersections between media representations and public health culture.

Keywords: *Grey's Anatomy; health communication; medical diagnoses; qualitative content analysis; television representation*

The representation of medicine, and medical diagnoses, in particular, is an understudied area of media representation. Although there are numerous medical dramas on television, *Grey's Anatomy* (hereafter *Grey's*) is currently the longest running

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primetime medical melodrama in U.S. American television with over 350 episodes aired to date (Dugan, 2019). Created by Shonda Rhimes, the fictional doctors of Grey Sloan Memorial Hospital experience more “car crashes, plane crashes, and mass murders mid-surgery” than doctors could ever expect to happen in their daily lives (Silvers, 2017, para. 1). Rhimes even explained when the show premiered that, “unlike other medical shows, like *ER*, there isn’t a big focus on medicine” (Robichaux, 2006, p. 5). Numerous case studies of television have established that media representations can impact not only individuals’ perceptions of health care (i.e., Hetsroni, 2009; Lee & Taylor, 2014; Swenson, 2018) but also individuals’ own health (i.e., Dutta, 2007; Larson, 1991; Thomas, 2019). We seek to contribute to this conversation by asking: at what rate do the fictional medical diagnoses on *Grey’s* align with contemporary trends in U.S. hospital diagnoses and how might these representations narratively frame our understanding of health and medicine?

Mediating medicine

Representing medicine, and the health care industry more broadly, has been a staple of U.S. television since its inception. Medical dramas on television have evolved over time in their representations of doctors, hospital settings, and medical practices. Fictional doctors in 1950s and 1960s television were idealized as “compassionate heroes” whose lives centered around the treatment of their patients (Quick, 2009, p. 39). While the 1970s demonstrated a similar focus on patient illness, the end of the decade showed a shift from the portrayal of illnesses to the portrayal of daily hardships in the life of a doctor (Quick, 2009). Tapper (2010) finds several medical dramas (*Medic*, *Kildare*, *Ben Casey*, *Welby*, *M*A*S*H*, *St. Elsewhere*, *ER*, *House*, *Grey’s Anatomy*) portray medical doctors as “drug-addicted, sex-obsessed antiheroes” (p. 393), who would be embarrassing in a real hospital environment (Kirzner, 2014).

The portrayal of doctors is certainly not the only unrealistic representation present in medical dramas. Hospital dramas are “a nihilistic format that highlights body trauma, despair, and little hope” (Hetsroni, 2009, p. 319). In many ways, patients in shows like *Grey’s* function as teachable moments for doctors rather than existing independently as human agents (Freytag & Ramasubramanian, 2019; Swenson, 2018). Thus, unusual diagnoses and complex medical conditions are integrated into storylines to distract television doctors from ongoing discussions of their internal lives. These representations can potentially function as a source through which individuals learn health care information (Lee & Taylor, 2014), which can at times impact their own health behaviors and attitudes (Dutta, 2007).

Method

This study conducts a qualitative content analysis of *Grey’s*. Content analysis aims to extract and interpret meaning from written, textual data through counting and comparing specific content (Hsiu-Fang & Shannon, 2005). A qualitative content

analysis is most useful when researchers are interested in latent meaning where contextual themes and patterns are important to understanding the data (Schreier, 2012). Historically, content analysis has been applied to a variety of disciplines, including media studies and television (Atkinson, 2005; Neuendorf, 2017). The versatility of qualitative content analysis proves to be advantageous where context within a televisual narrative may impact how data is coded.

This study compares the diagnoses made on *Grey's* to the Healthcare Cost and Utilization Project Data (HCUP) on the “Most Common Diagnoses for Inpatient Stays.” This publicly available data is only available for the years 2005–2015, and thus, we selected the first two seasons (aired in 2005 and 2005–2006, respectively) and seasons 10 and 11 (2013–2014 and 2014–2015) to provide a least-recent to most-recent comparison of diagnoses. Thus, we watched 84 episodes of *Grey's*, actively identifying and noting the different diagnoses made by the fictional physicians. The resulting list was 21 pages in length and contained 720 diagnoses, separated into both “specific” and “nonspecific” diagnoses. Specific diagnoses were defined as medical diagnoses recorded by physicians that included specific language (i.e., cardiomyopathy), and nonspecific diagnoses were marked with more generalized language (i.e., brain injury). As part of our qualitative coding, we utilized context within the episode to accurately place diagnoses in reference to the publicly available statistics. For example, in season two, a patient is originally diagnosed with “acute myocardial infraction” (or a heart attack), but the diagnosis is later revised to be “coronary artery aneurism with fistula into a heart chamber.” The first diagnosis would be common, whereas the second is considered extremely rare and impacts only 0.1%-0.8% of patients (Cao, Ye, Chan, Fan, & Liu, 2015). Thus, the ultimate placement and interpretations of diagnoses relied on our subjective, contextual interpretations of the latent meaning communicated through plot points within each episode which we negotiated between both authors as coders.

Analysis

To illustrate the mismatch between televised representations and actual hospital diagnoses, we analyzed each season and then combined our findings to critique the series more generally. The first season of *Grey's* premiered on March 27, 2005, and concluded on May 22, 2005. The ten most common diagnoses in 2005 for inpatient stays (ranked from most to least frequent) included liveborn, pneumonia, coronary atherosclerosis, and other heart diseases, congestive heart failure, nonspecific chest pain, OB-related trauma to perineum and vulva, other complications of birth, osteoarthritis, mood disorders, and cardiac dysrhythmias (Healthcare Cost and Utilization Project, 2019). The first season contained 68 diagnoses. While pneumonia was mentioned in a conversation between Dr. Alex Karev and the nurses, it was a post-operative complication, not an entry diagnosis (S1-E1). In episode six, a patient is diagnosed with cardiac tamponade – which, while related to heart disease, is a specific condition that impacts only approximately two cases in 10,000

within the U.S. per year (Kahan & Ashar, 2008). Later in episode eight, there is a random cardiac arrest where a patient codes and dies, but no diagnosis is given for the patient. We also learn that Dr. Cristina Yang is pregnant, but her early discovery of pregnancy does not correspond to birth or full-term pregnancy complications (S1-E8). Thus, none of the diagnoses present in the first season of *Grey's* mirror common hospital diagnoses.

The second season of *Grey's* premiered on September 25, 2005, and concluded on May 15, 2006. While ranked in a different order, the same ten common diagnoses for inpatient stays were observed for this time period (Healthcare Cost and Utilization Project, 2019). In season two, there were seven diagnoses involving pregnancies/complications of birth, two cases of congestive heart failure, one case of coronary artery disease, and one case of a mood disorder (obsessive-compulsive disorder). Thus, out of the 186 overall diagnoses made in season two, only 11 coincided with real hospital data - a mere 5.9%. Of these coinciding diagnoses, three involved major, recurring characters on the show, including Dr. Cristina Yang's ectopic pregnancy (S2-E3) and Denny Duquette's (Dr. Isobel Stevens' controversial love interest) congestive heart failure (S2-E27). The increase in pregnancy-related diagnoses and conditions was likely influenced by the introduction of Dr. Addison Montgomery, a neonatal surgeon who is hired on as a new head of obstetrics and gynecology at the hospital at the end of season one (S1-E9).

Over the course of season two, we noticed a pattern where a potentially common diagnosis was narratively reframed as one that was rare. For example, one patient was diagnosed with stress-induced cardiomyopathy, otherwise known as "broken heart syndrome" (S2-E5). While cardiomyopathy would fall under the more generic diagnosis of heart disease, researchers were only able to identify 256 reported cases of stress-induced cardiomyopathy across seven hospitals in Europe and North America in a five-year period (Goodman, 2011). In other instances, a common diagnosis was reframed as a different common diagnosis, but it did not correlate with the public data. For example, Dr. Richard Webber appears to have a heart attack, but his blood work later reveals it was an anxiety attack (S2-E17). There is no follow up diagnosis given to specifically place this under "mood disorders" as it is narratively framed as situational and not an on-going condition. Thus, in many instances, when the narrative introduces something that may be a common diagnosis, it later revises its narrative articulation away from aligning with the public data.

In moving to more recent episodes, the tenth season of *Grey's* premiered on September 26, 2013, and concluded on May 15, 2014. HCUP data for 2013 and 2014 differed slightly. For 2013, the list was as follows: liveborn, septicemia, osteoarthritis, pneumonia, congestive heart failure, mood disorders, cardiac dysrhythmias, chronic obstructive pulmonary disease, complication of device, and other complications of birth (Healthcare Cost and Utilization Project, 2019). The list for 2014 was the same, except that acute myocardial infarction replaced chronic obstructive pulmonary disease (Healthcare Cost and Utilization Project, 2019). In season 10, only 16 of

the 234 diagnoses coincided with real data, a mere 6.8%; there was one case of sepsis, four cases involving pregnancy/complication, nine cases of congestive heart failure, one case of myocardial infarction, and one mood disorder (obsessive-compulsive disorder). Similar to previous seasons, we observed that common diagnoses tended to align with major characters, such as when Dr. Miranda Bailey was diagnosed with obsessive-compulsive disorder (S10-E11). We also noticed a continued trend of reframing a common diagnosis with one that is far more rare. For example, cardiac tamponade appears again as an explanation for heart failure (S10-E4), while another is attributed to “hypoplastic left heart syndrome” (S10-E8), a heart condition with a prevalence rate of 2–3 cases per 10,000 live births in the U.S. (Gordon, Rodriguez, Lee, & Chang, 2008).

The eleventh season of *Grey’s* premiered on September 25, 2014, and concluded on May 14, 2015. The 2015 list of most common diagnoses for inpatient stays encompassed the same ten diagnoses in 2014 (Healthcare Cost and Utilization Project, 2019). In season eleven, only 17 of the 232 overall diagnoses would be considered common, a mere 7.3%; there were 15 cases of pregnancy/complications, one case of sepsis, and one case of myocardial infarction. While the correspondence of fictional diagnoses data compared to authentic diagnoses data from real hospitals increased over time, the rate of increase is certainly not significant enough to offset the representational inaccuracies associated with medical diagnoses. The fact that this season’s most common diagnoses tended to gravitate solely toward pregnancy/complications tended to align with the prominence of attaching these diagnoses to major characters. Dr. Arizona Robbins develops an interest in fetal surgery, and Dr. Nicole Herman, introduced as one of the only female fetal surgeons in the world, serves as Arizona’s mentor (S11-E1). Also in this season, Dr. April Kepner and Dr. Jackson Avery discover that their unborn child has an incurable birth defect and live through his birth and subsequent death (S11-E11).

Thus, overall, across the 720 diagnoses made in four separate seasons of *Grey’s*, we found that *only* 6% of the diagnoses aligned with common diagnoses within U.-S. hospitals. Moreover, as the series progresses, representations of rare diseases increase. Of the 147 very rare diseases treated across the sample, 96 of the diseases (65%) appeared in seasons ten and eleven, and only 51 (35%) appeared in seasons one and two. In season 10, a patient complaining of chronic abdominal pain was diagnosed with Fetus in fetu when Dr. Bailey palpated a mass in his abdomen (S10-E16). Fetus in fetu, also known as an absorbed twin, is an extremely “rare congenital anomaly” of which only about 100 cases have been reported since its nineteenth century definition/discovery (Karaman et al., 2008, p. 30). Shortly thereafter, a cardiothoracic patient was diagnosed with a protein S deficiency (S10-E19). A protein S deficiency is considered to be very rare, occurring in approximately 1 out of every 20,000 individuals (National Center for Advancing Translational Sciences, 2013). In season 11, a patient was diagnosed with Ebstein’s malformation, and due to complications from pregnancy, suffered an aortic dissection (S11-E2).

Ebstein's malformation is considered to be a rare congenital heart defect, affecting an estimated 1 out of every 10,000 babies born (Boston Children's Hospital, 2005).

Despite the rare occurrence of these diagnoses in real life, all patient outcomes were positive: the absorbed, parasitic fetus was removed and the patient's abdominal pain was cured, the heart patient survived due to a compassionate release for a drug-eluting cardiac pump, both mother and child survived emergency surgery for an aortic dissection despite being typically associated with a high mortality rate (Melvinsdottir et al., 2016). In sum, this tends to be a consistent thematic pattern on *Grey's* - a rare diagnosis is made by one of the doctors, and despite its rarity and/or actual proposed health outcome/mortality rate, the doctors are disproportionately successful and the patients make full recoveries. More often than not, the "patient of the week" leaves healed at the end of the episode and the audience is to assume that they are fine from this point forward.

Conclusion

Our findings suggest that the diseases and diagnoses represented on *Grey's* are largely rare conditions that few individuals will experience in their lives. Although we anticipated this result based on prior research (i.e., Hetsroni, 2009), we were surprised by the degree to which *Grey's* represents rare to extremely rare conditions as the norm. Both popular and critical media scholars frequently criticize the lack of accuracy present in medical dramas (i.e., Silvers, 2017) because research has found that individuals who watch medical melodramas tend to perceive the representations of both the health care industry and doctors specifically as realistic (Tian & Yoo, 2020). Given that only 6% of the diagnoses/patient experiences represented on *Grey's* are at all representative of an average individual's reasons for seeking health care and/or a hospital stay, this link potentially encourages viewers to associate interactions with the medical industry as situations where rare diagnoses are commonplace. Perhaps even more disturbing is the consistent pattern of narratively reframing an initial common diagnosis as a rare one.

Medical melodramas are no doubt meant to entertain; with gushing blood and death at every corner, they yearn to capture and keep the attention of their audience. These flashy and grotesque aspects may be necessary, even vital, for their success (Griffin & Meyer, 2018). We understand that numerous storylines about nonspecific chest pain and congestive heart failure would most likely not retain an audience's attention, but are also concerned that this consistent representation of rare conditions potentially encourages viewers to look for zebras rather than horses in their own medical lives. Cultivation studies of media content have long argued that exposure to media messages can impact audience attitudes, beliefs, and behaviors (i.e., Hammermeister, Brock, Winterstein, & Page, 2005). This is particularly salient in health contexts where mediated information has the potential to impact perceptions of health (i.e., Dutta, 2007). While our study does not posit a direct correlation between representation and perception, future research on medical dramas should

interrogate this potential link more closely. Moreover, additional research is needed on how medical dramas represent both health care providers and contexts. Future research could examine other types of representation such as doctor specialization, the amount of time spent with doctors vs. other patient care providers (i.e., nurses and staff), or other aspects of race, class, gender, and sexuality as they impact the hospital context.

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