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Portrayal of medical decision making around medical interventions life-saving encounters on three medical television shows

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Abstract

Introduction—Previous literature has shown that patients obtain information about the medical system from television shows. Additionally, shared decision making is regularly cited as the ideal way to make decisions during a medical encounter. Little information exists surrounding the characteristics of medical decision-making, such as who makes the decision, on medical television shows. We evaluate the characteristics of medical decisions in lifesaving encounters on medical television shows and evaluate if these characteristics were different on staged and reality television shows.

Methods—We coded type of medical intervention, patient’s ability to participate in decision, presence of patient advocate during decision, final decision maker, decision to use intervention, and controversy surrounding decision on three television shows. Frequencies by show were calculated and differences across the three television shows and between staged (*ER*) and reality (*BostonMed* and *Hopkins*) television shows were assessed with chi-square tests.

Results—The final data set included 37 episodes, 137 patients and 593 interventions. On *ER*, providers were significantly more likely to make the decision about the medical intervention without informing the patient when a patient was capable of making a decision compared to

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CONFLICT OF INTEREST

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BostonMed or *Hopkins* ($p < 0.001$). Across all shows, 99% of all decisions on whether to use a medical intervention resulted in the use of that intervention.

Discussion—Medical interventions are widely portrayed in the medical television shows we analyzed. It is possible that what patients see on television influences their expectations surrounding the decision making process and the use of medical interventions in everyday healthcare encounters.

Keywords

Medical Interventions; Decision Making; Medical Television Shows

1. INTRODUCTION

Medical interventions and the need for medical providers to make decision regarding these interventions have been a part of the medical system since the beginning of the field [1]. We broadly define medical interventions to encompass procedures, processes, equipment, and medications that are used during a healthcare encounter[1]. Today, medical interventions are used every day in routine and complex healthcare encounters.

As medical interventions have evolved, so have the ideas surrounding the patient-provider relationship. The shared decision-making model supports the notion that all decisions in a healthcare encounter should involve both the patient and provider equally [2]. This model is often cited as the ideal model for decision making during medical treatment [3–7], and in one study greater than 75% of general practitioners in Britain reported using shared decision making frequently with their patients[8]. According to this model, all decisions for or against the use of medical interventions should be discussed by the patient and provider and a mutual decision should be reached.

However, patient-provider relationships are influenced by both provider and patients' expectations of what a medical encounter should look like. Patients report that they obtain information about the medical system from the media, [9, 10] and their perceptions of the medical system and a medical encounter are influenced by medical television shows [11]. Previous research has shown that the representation of medical interventions on television is not always accurate [12]. In one previous study, researchers documented that the survival rates of someone receiving cardiopulmonary resuscitation on three television shows was significantly higher than even the most optimistic survival rates documented in the medical literature[12]. Taken together these finding suggest that medical television shows have the power to influence patients' expectations relating to medical encounters and could even create unrealistic patient expectations [13].

Our goal with this work was to evaluate the characteristics of medical decisions in life-saving encounters on medical television, and we evaluate if the characteristics are different on staged and reality television shows. While we acknowledge that all medical television shows are edited versions of a healthcare encounter designed for entertainment purposes, we hypothesized that the characteristics of medical decision making on the reality television shows would be more in keeping with the best practices described in the medical literature

because these shows are documenting actual medical encounters instead of medical encounters that were created by television writers and producers.

2. METHODS

2.1. Study Design

We compared the representation of medical interventions, the use of medical interventions, the patient outcomes, the controversy around use of medical interventions and the decision maker during lifesaving medical interventions across three American medical television shows: *BostonMed*, *Hopkins*, and *ER*. *ER* is a medical drama television series that portrays the life of emergency room healthcare providers and patients, and it aired in the United States on NBC for 15 seasons from 1994 to 2009. We choose to use *ER* because it has been considered one of the greatest medical shows ever to air on American television [14] and is the longest-running primetime medical drama in American television history [15]. We chose *BostonMed* and *Hopkins* as a comparison group to evaluate if the characteristics of medical decisions differed on unscripted reality shows as compared to dramatized shows set in the United States and these shows aired around the same time as *ER*. *BostonMed* and are reality medical television shows produced by the same people and the shows are based on the experiences of healthcare providers and patients in two different American hospitals. *BostonMed* aired on ABC for one season in 2010 and had an average of 5.5 million viewers per episode [16], and *Hopkins* aired on ABC for one season in 2008 and had an average of 5 million viewers per episode [17]. We reviewed all shows from *Hopkins* and *BostonMed* in this analysis. We reviewed all shows from season 15 of *ER* and during this season there was an average of 10.3 million viewers per episode [18].

2.2. Sample

The final sample included eight episodes, 27 patients and 100 interventions from *BostonMed*; seven episodes, 33 patients and 90 interventions from *Hopkins*; and 22 episodes, 77 patients and 403 interventions from *ER* (Table 1). All of the patients that received life-saving care in the television shows were included in the analysis. We defined life-saving care as care that would be necessary to save a patient with an acute risk of death if not treated. All instances in which it was not clear if a patient required life-saving treatment were reviewed by a practicing internist with over 20 years of experience who used her best clinical judgment to make a determination as to whether the care was life-saving or not.

2.3. Measures

Once a patient was designated as receiving life-saving care, we documented all of the times this patient's story appeared during the episode and systematically recorded the patient outcome (dead, alive, alive but receiving treatment) and the types of medical interventions used in a standardized spreadsheet. We classified interventions in categories based on a modified version of the broad intervention type breakdown suggested by Ejdrup Anderson and Børllum Kristensen's (biological preparations; diagnostics; drugs; equipment devices and supplies; hospital only; and medical and surgical procedures) [19]. Examples of medical interventions that make up each category are described in Table 2. Provision of saline and

Ringer's solutions, intravenous access, routine lab tests, and noninvasive monitoring of vitals and physical exams were not recorded because they are performed routinely and often without patient-provider discussion.

For every medical intervention used in a life-saving encounter, we classified the patient's ability to participate in the decision (yes, no, unclear), the presence of a patient advocate who could participate in decision making (no one present, someone present, not shown), the final decision maker (patient decides, provider informs patient and then decides, provider decides without informing patient, not shown), the decision about whether to use the intervention (yes, no), and controversy surrounding the decision (yes, no).

Analysis—Frequencies for the entire sample, by television series, and by television series type (reality or stage) were calculated. We compared portrayal of decision making across the three shows and between television series type with chi square tests.

3. RESULTS

The distribution of patient outcomes was similar across all television shows ($p=0.892$). Overall, 19 % of the patients died, 39 % were alive and 42 % were alive but receiving treatment at the end of the episode (Table 3). Sixty-seven percent of the decisions ($n=403$) around medical interventions occurred on *ER*. The mean number of decisions per patient was 3.7 for *BostonMed*, 2.7 for *Hopkins* and 5.2 for *ER* (Table 1).

Overall, 28% of patients were capable of participating in decisions around medical interventions (Table 4). In 32 % of the decisions, there was no one with decision-making power present; this occurred more often in *Hopkins*, (30 %), and *ER* (39 %) than in *BostonMed* (5 %) ($p<0.001$). Overall, 7 % of the decisions were made by the patient. The providers made decisions without informing the patient 50 % of the time, and this was significantly more likely to occur in *ER* (60 %), as compared to *BostonMed* (31 %), and *Hopkins* (27 %) ($p<0.001$). Thirty-five percent of decisions were not shown. When a patient was capable of making a decision around an intervention, the providers on *ER* (63%) were significantly more likely to make the decision whether to use an intervention without informing the patient as compared to on *Hopkins* (18%), and *BostonMed* (17%) ($p<0.001$).

Ninety-nine percent of all decisions on whether to use an intervention resulted in utilization of that intervention. Twelve percent of decisions on whether to use an intervention involved controversy, and controversy was significantly more likely to occur on *ER* (16%) as compared to *BostonMed* (5%) and *Hopkins*(2%) ($p<0.001$).

When comparing staged versus reality television shows, there was no difference in the distribution of patients that were capable of participating in a decision. However, decisions on *ER* were significantly more likely to occur without a patient advocate present (39%) as compared to the reality medical television shows (17%) ($p<0.001$). The provider was significantly more likely to make decisions without informing the patient on *ER* (60%) as compared to on reality shows (29%) ($p<0.001$). Controversy surrounding a decision was significantly more likely to occur on *ER* (16%) as compared to reality shows (4%) ($p<0.001$).

Across all television shows, medical and surgical procedures, were the most common interventions shown, followed by diagnostics, drugs, biological preparations, equipment devices and supplies, and hospital only (Table 5). Biological preparations, such as blood products and donor organs, and drugs, such as antibiotics and steroids, were much less common. Patients died more often after receiving medical and surgical procedures (31 %) than after using other medical interventions (22 %).

4. DISCUSSION

We found that medical interventions are widely portrayed in both reality and staged medical shows that we studied. We also found that shared decision making around the medical interventions is rarely modeled in these shows. In fact, more than a third of the decisions around the use of medical interventions are never shown and the decisions that are shown most often involve the provider deciding how to proceed without informing the patient. Further, medical interventions were used 99 % of the times they were offered to patients. This portrayal on popular television shows is likely to have implications for patient expectations around the use of medical interventions and the decision making process.

There were differences in the portrayal of decision making around medical interventions on staged versus reality medical television shows that we analyzed. Having someone present to assist in decision making was less common on *ER*, and this difference could be due in part to the fact that *ER* was set in the emergency room as compared to taking place throughout all departments of the hospital like the other shows. Often times, emergency room visits are not planned and so it is much more common for emergency room patients to be present without a patient advocate. Finally, on *ER* the physicians were more likely to make decisions without informing the patient as compared to either *BostonMed* or *Hopkins*.

There are limitations to our study. First, we only looked at three television shows. There are many more medical television shows on television today, through which many people gain insight into their personal healthcare encounters and our findings may not be generalizable to all medical shows. Second, many of our conclusions are based on the assumption that viewers' perceptions of healthcare practices are influenced by both reality and staged television shows. As noted in previous studies, *ER* was designed to look realistic in many senses, and this realism is one of the attractions of the show [20]. Because *ER* is realistic in many ways, the line between fact and fiction is often confusing and, thus, the separation between staged and reality television shows may not be as large as one would think.

Despite these limitations, we believe our work has important implications. Although many physicians and patients indicate that shared decision making is important to them, the medical television shows we studied rarely model shared decision making, more often depicting one-way information transfer from the doctor to the patient [8]. Given that patients report obtaining information about healthcare from the media [9, 10] the portrayal of a paternalistic model of decision making could lead some patients to expect this type of interaction with their physicians. Similarly, patients may be overly enthusiastic or optimistic about the use of medical interventions due to their prevalence and their success on medical television shows.

As stated on Public Broadcasting Station's television series, *Pioneers of Television* "Viewers love Doctors and Nurses. From Richard Chamberlain to George Clooney television's medical professionals portray a goal to aspire to a model of knowledge skill and success; an ideal that keeps viewers tuning in every week" [21]. We know that what patients see on medical television shows influences their perceptions of what a medical encounter should be. Overall, providers, healthcare systems and policy makers all need to be aware of the influence that medical television shows have on patients' expectations of the use and the decision making process surrounding the use of medical interventions in a healthcare encounter and the healthcare system in general. Further qualitative research may be necessary to understand how medical television shows influence patients perceptions of medical interventions in real-life healthcare encounters and to devise strategies that may be useful for providers and healthcare systems to address these assumptions.

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Table 1

Description of Episodes, Patients, and Decisions per Television Show

	All Shows	<i>BostonMed</i>	<i>Hopkins</i>	<i>ER</i>
Number of				
Episodes	37	8	7	22
Patients	137	27	33	77
Decisions	593	100	90	403
Decisions per Patient, mean (range)	4.3 (1,15)	3.7 (1,8)	2.7 (1,8)	5.2 (1,15)

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Table 2

Categories and Subcategories of Medical Interventions

Category	Examples
Biological preparations	blood products, donor organs-received, donor organs-given
Diagnostics	brain activity, heart specific, imaging, invasive diagnostics, invasive monitoring, pathology
Drugs	antibiotics, antidote, asthma, cardiovascular, chemotherapy, electrolyte, pain control, sedatives, steroids
Equipment, devices and supplies	blood pumping machine, cast saw, ECMO, heart pump, hyperbaric chamber, incubator, internal defibrillator, LVAD, nebulizer, neck brace, negative pressure chamber, urinary catheter
Hospital only	patients came to hospital but no other technology was used
Medical and surgical procedures	CPR, chest tube, intubation, non-surgical procedures, surgery

Table 3

Patient Outcome per Television Show

	All Shows	BostonMed	Hopkins	ER	P-value*
Patient Outcome					p = 0.892
Dies (%)	19	26	19	17	
Alive (%)	39	33	45	39	
Alive but receiving treatment (%)	42	41	36	44	

* P-value is measuring differences across *BostonMed*, *Hopkins* and *ER*

Table 4

Description of Decision Making Process surrounding Intervention by Television Show

	All Shows	BostonMed	Hopkins	ER	P-value*
Patient Capable of Participating in Decision (%)					p = 0.469
Yes	28	23	33	29	
No	57	63	50	57	
Unclear	15	14	17	14	
Presence of Patient Advocate During Decision (%)					p < 0.001
No one present	32	5	30	39	
Someone present	38	50	47	33	
Not shown	30	45	23	28	
Technology Decision Maker (%)					p < 0.001
Patient decides	7	10	10	6	
Provider informs	8	11	23	4	
Provider decides	50	31	27	60	
Not shown	35	48	40	30	
Decision for Technology (%)	99	100	100	99	p = 0.016
Controversy Around Technology Decision (%)	12	5	2	16	p < 0.001

* P-value is measuring differences across BostonMed, Hopkins and ER

Comparison of the Types of Medical Intervention and the Characteristics of the Decision in Combined Television Shows

Table 5

	Biological Preparations	Diagnostics	Drugs	Equipment Devices & Supplies	Hospital Only	Medical & Surgical Procedures
Decision Occurred (#)	55	153	108	39	4	234
Decided Against Intervention (#)	1	0	0	1	1	3
Patient Died after Intervention Offered (%)	25	8	20	21	25	31