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The Hidden Curriculum of Medicine Portrayed in Popular Television Medical Shows

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ABSTRACT

Background: In addition to the purposeful teaching of knowledge and skills to medical students, the "hidden curriculum" refers to the inadvertent – and often unrecognized – transmission of implicit ideas, attitudes, and behaviors. One way to raise student and teacher understanding of the hidden curriculum (HC) is to provide them concrete examples of how and when it occurs during medical school. The goal of this study was to investigate how the HC is depicted popular medical television (TV) shows.

Methods: A systematic content analysis of successive episodes of eight prime-time TV shows was completed using a standardized classification scheme. A complete season of each TV program was analyzed to identify and classify depictions of the HC as it pertains to medical students. Our classification scheme used four dominant themes: what students discovered about medicine, what students learned about becoming a physician, what students experienced, and what students realized about themselves. After coding, all incidents were classified as "negative" if a rule or normal procedure was broken, or "positive" if they followed established professional values or provided patient-centered care.

Results: A total of 137 episodes were viewed with 1160 depictions of the HC portrayed. The TV shows with the most depictions were *Code Black* and *Scrubs*. Within the four dominant themes, 45 subthemes were identified. Most depictions (66.7%) were described as positive and included conflict resolution, sensitivity, respect, empathy, accountability and role-modeling. However, 33.3% (386/1160) were negative and included unrealistic patient expectations, working in a chaotic environment, haphazard learning interactions, emotional detachment, loss of idealism, complex social situations, and dealing with uncertainty.

Conclusions: Television dramas contain many positive and negative examples of the hidden curriculum during undergraduate medical training. Short snippets from these incidents could be used in an educational setting to teach related issues including professionalism, ethics, role modeling, communication skills, and coping techniques.

INTRODUCTION

Lectures, class syllabi, grand rounds, and texts do not cover everything that is taught in medical school. In fact, during medical school the majority of what is learned arises within medicine's "hidden curriculum" (1). The ''hidden curriculum'' (HC) in medical education refers to the teaching of assumptions, attitudes, and behaviors of medicine, and it begins with first year medical students and continues throughout the entirety of their residency training (2,3). The core idea is that medical education is a cultural process through which students learn what is important and how to distinguish between "good" and "poor" clinical practices. Thus, students learn to subjectively characterize patients in ways that govern their interactions with them and impact medical care decisions (4). In particular, the HC strongly influences professional identity development of trainees (3).

The practice of medical education requires an understanding of how learners experience and engage with the hidden curriculum (3). The importance of addressing the hidden curriculum has been stressed by educators, medical students, and the lay press (1-6). The hidden curriculum can both support or contradict the lessons of the formal curriculum, potentially revealing inconsistencies between an institution's stated mission, principles, and values versus what students actually experience, observe, and learn while they are in training (7). The negative consequences might include the loss of idealism, patient dehumanization, moral distress, suppression of normal emotional responses, development of a ''ritualized'' professional identity and the learning of less formal aspects of ''good doctoring" (8).

Qualitative and ethnographic research has proven to be helpful methods for characterizing and understanding the HC. Empiric methods include recordings of medical students and residents casually discussing work, student reports of ethical and moral dilemmas, senior medical student focus groups, semi-structured interviews, and various survey instruments designed to measure hidden curricula with respect to patient-centered care (2,3). Even television medical dramas can be used to illustrate aspects of the HC.

Stanek and colleagues conducted a summative content analysis to identify portrayals of the HC in three television medical shows (*ER*, *Grey's Anatomy*, and *Scrubs*) (9). They found that depictions of the HC are common to medical dramas, especially in terms of depictions of authority, unprofessionalism, and dehumanization of patients (9). They proposed creating a database of video vignettes based on situations from these shows to use in teaching undergraduate medical students about the HC (9).

The goal of this study was to investigate how the HC is depicted popular medical television (TV) shows, focusing on medical students. These engaging shows have the ability to raise student knowledge of the HC and lead to the creation of instructional vignettes in which students can observe both positive and negative elements of the HC.

METHODS

We conducted a content analysis of eight popular medical dramas focusing on medical students as the central character. Several TV series were excluded due to minimal viewership, dramatic focus on the private lives of the characters rather than medicine, and frequent inclusion of extremely outlandish situations. One complete season of each TV program was examined (Table 1).

All our coders were second- and third-year medical students. Several steps were taken to ensure validity of coding. Data collection was guided using standardized abstraction forms. Prior to beginning the data collection, all investigators met and reviewed the coding scheme and data abstraction tools. To ensure consistency of abstraction and coding as well as resolve questions, one investigator (JSJ) met frequently with abstractors. To determine rater reliability, a blinded critical review of a random sample of 10% of the TV episodes was done. The inter-rater agreement for this sample of datasheets was then determined using kappa statistics. To ensure for quality control of collected data, the principal investigator periodically reviewed the collected data to reduce any inter-observer variations or errors in data transcription.

Main outcome criteria were recorded as frequency tables comparing the types and frequency of HC incidents and elements portrayed in television programs. An incident or element was defined as a conversation between, or actions taken by, characters that involved a HC issue. After coding, all incidents were classified as "negative" if a rule or normal procedure was broken, or "positive" if they followed established professional values or provided patient-centered care. Our classification scheme for HC incidents was adapted from multiple sources (9-13) and then refined by the general consensus of four faculty members in the Department of Emergency Medicine. The classification scheme used four dominant themes: what students discovered about medicine, what students learned about becoming a physician, what students experienced, and what students realized about themselves. We followed analysis and documentation procedures that we have successfully used in the past (14-16).

Eight dramas consisting of 137 episodes in total were watched and HC incidents within were tabulated (Table 1). This sample size power enabled us to detect a 5% difference in categorical variables with a power of 0.8 and an alpha of 0.05. Data was entered into Microsoft Excel (version 7.0; Microsoft, Redmond, WA) and imported into SPSS statistical software (version 14.0, SPSS Inc., Chicago, IL) for analysis. Ninety-five percent confidence intervals were calculated using SPSS statistical software.

RESULTS

During the study period, a total of 137 episodes were viewed with 1160 depictions of the HC portrayed; an average of 8.47 incidents per episode. The TV shows with the most depictions were *Code Black* and *Scrubs* (Table 1). Within the four dominant themes, 45 subthemes were subsequently identified by our coders (Table 2). Most depictions (66.7%) were described as positive and included conflict resolution, sensitivity, respect, empathy, accountability, and role-modeling. However, 33.3% (386/1160) were negative and included unrealistic patient expectations, working in a chaotic environment, haphazard learning interactions, emotional detachment, loss of idealism, complex social situations, and dealing with uncertainty. Moreover, there were recurring issues of professionalism and ethical situations which we

have addressed in previous studies (11,13). One member of the research team coded 10% of the episodes and a k-statistic was performed to compare and ensure consistency of coding which showed a moderate degree of agreement (k = 0.46).

DISCUSSION

We began our investigation by coding data into four broad domains used by Head and colleagues in their evaluation of students completing a palliative care clerkship (17). These four domains reflect Kolb's theory of experiential learning which basically involves four stages (18). The first stage is concrete learning, where the learner comes across a novel experience. This is followed by reflective observation, where the student personally reflects on the experience using their own framework. After this comes the process of making sense of what has transpired, which includes interpreting their actions or emotions to the event, this is known as abstract conceptualization. Lastly, the active experimentation stage is where the new knowledge is applied to real life situations by the student. Kolb noted that all four stages must be present for students to learn from their experiences (18).

That said, the real-world experiences that medical students have during clerkships may not always align with the themes covered in most typical medical school curricula. Recurring subthemes included working in a chaotic environment, uncertainty in diagnosis and management of disease, complex social situations, time constraints, challenging patients, unreasonable expectations, and coping with responsibility (Table 2). First-year students who are unfamiliar with this undercurrent, such as those without a medical background, may have more emotional difficulty during this learning process than those with more medical knowledge (2,3). In addition, although medical students were the focus of our study, similar observations are likely made by students in nursing and allied health professions.

In the past, medical schools have tended to value science over humanism (19). Although efforts are under way to reverse this, the formal curriculum still tends to value interventional, high-technology clinical care. Subsequently, humanism, professionalism, and effective communication are competencies

that are often taught informally through role-modeling and coaching behaviors. During medical school, these everyday learning experiences frequently result in the transmission of attitudes, behaviors, beliefs, and values that can either strengthen or impair these abilities (21). Offhand derision of patients' poverty, weight, or ethnicity can contradict with principles of cultural sensitivity and competence (20). It is also well recognized that learners observe and often embody a role model's inappropriate actions, undesirable habits, and questionable attitudes in addition to their professional conduct. Every word spoken or every silence, every action performed or omitted, every personal anecdote, and every complaint imparts values we might never have intended to convey (20). Notably, research has documented a deterioration in moral reasoning throughout medical training and has identified the HC as one of the reasons (19).

Medical students' observations of actions, particularly those of their role models, are thought to have a greater impact on learning than curricular instruction (22). Not all role models are official preceptors (i.e. attending physicians), and could also be residents or upper classmen in medical school. Research shows that the majority of medical graduates recall role models who influenced their professional attitudes and beliefs (22). Attending physicians may be so focused on patient flow that they are unaware of the subliminal messages they are sending. For example, during preclinical years at institutions that place a strong emphasis on collaboration and teamwork, students who encounter instances of harassment - or at the very least emotional indifference - in the clinical setting can be quite shocking and unsettling (23).

It was encouraging to see that most depictions of the HC by our student coders were described as positive. While often sensationalized, television dramas included numerous examples of empathy, sensitivity, conflict resolution, effective communication, and respect for the patient and family. Positive role models, who treated their patients with care and compassion, were frequently central characters.

The American College of Physicians (ACP), in a position paper, presented recommendations for optimizing clinical learning environments by fostering a positive HC in medicine (24). To this end,

faculty and clinicians should model empathy, support clinician wellness, and foster reflection and discussion of positive and bad behaviors in the learning environment. Every individual should be able to address issues about social justice, patient safety, and ethical problems in the therapeutic setting, which should inspire honesty, respect, and inquiry. Specific strategies for modifying the HC include coaching how to deal with stress, improving communication skills, fostering student mentoring programs, highlighting patient advocacy programs, and providing opportunities for group discussion of concerns about professionalism, ethics, and quality of care (24).

LIMITATIONS

The most important limitation in this investigation was the subjective nature of the judgement and categorization of events. Although we took numerous steps to ensure the accuracy of coding, the interrater reliability was only moderate. In addition, our abstractors all are affiliated with a single midwestern medical school which might limit generalizability. However, our findings resonate with other qualitative studies using reviews of television dramas to explore the clinical learning environment that students confront in the emergency department and possibly in other clerkships or rotations (15,16). Finally, breaking down the themes or scenarios that medical students face into a few subthemes is likely an oversimplification of the complexities and realities that these students face in the hospital and clinic (13,16).

CONCLUSIONS

Television dramas contain many positive and negative examples of the HC during medical training. A selection of brief clips from these episodes could be used in an educational setting to teach related issues including professionalism, ethics, role modeling, communication skills, and coping techniques. Understanding how students experience and engage this curriculum is essential because what is not taught in medical school can sometimes be as formative or influential as what is taught. Medical educators need

to help students think critically while analyzing aspects of the HC, principally when its messages contradict basic morals and canons of emergency medicine and medicine in general.

CONFLICT OF INTEREST

There was no external funding source for this study. The authors declare no conflict of interest.

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Table 1. Total Incidents of Hidden Curriculum Portrayed in Medical TV Shows

TV Show (# episodes)	Incidents (N=1160)
Code Black (18)	411 (35.4%)
Scrubs (13)	238 (20.5%)
Chicago Med (23)	149 (12.8%)
The Night Shift (10)	125 (10.8%)
Hawthorne (10)	123 (10.6%)
ER (23)	11 (9.5%)
Grey's Anatomy (22)	56 (4.8%)
Trauma (18)	47 (4.1%)

Table 2. Characteristics of four domains (with 45 associated subthemes) identified from qualitative analysis (N=1160)

I. What Students Learned About Medicine in General (N=342)	
Uncertainty in diagnosis and management of disease	4.4%
Team-based approach to care	4.3%
Sensitivity (patient's pain, emotional state)	4.1%
Role of the student on the health care team	3.2%
Dealing with complex social situations	3.1%
Critical decision-making	2.9%
Treating patients with alcohol or drug-seeking behavior	2.1%
Dealing with violent or threatening patients	1.4%
Unreasonable patient or family expectations	1.3%
Challenging ethical situations	0.9%
Conflict resolution	0.7%
Appropriate use of humor/language	0.4%
Haphazard learning interactions	0.3%
Confidentiality	0.2%
Medico-legal issues	0.2%
Total	29.5%
II. What Students Learned About Becoming a Physician (N=345)	
Developing communication skills	5.9%
Appropriate use of symptomatic care	4.3%
Respect for the patient and family	3.6%
Caring and compassion	3.0%
Lifestyle of physician (balance and sacrifice)	2.1%
Importance of empathy	2.0%
Costs of medical care	1.9%
Physician as patient advocate	1.7%
Avoiding cynicism or becoming jaded	1.6%
Hierarchical nature of medicine	1.4%
Accountability	1.2%
Recognizing the limits of medicine	1.0%
Total	29.7%
III. What Students Learned About Themselves (N=182)	
Confidence in treating patients	3.2%
Recognize self-limitations	2.7%
Need for a nonjudgmental approach	2.3%
Coping mechanisms	2.1%
Fear of making errors	2.0%

Importance of balancing lifestyle (friends, family, relationships)	1.7%
Dealing with death and dying	0.9%
Emotional suppression	0.8%
Total	15.7%

IV. What Students Experienced (N=291)

Emotional neutralization/suppression	5.1%
Role modeling (positive or negative)	5.0%
Intimate encounters with patients and families	4.7%
Medicine as ideal vs. medicine as reality	3.4%
Learning how to teach others	1.9%
Respect for colleagues	1.7%
Fear of making errors	1.0%
Skill in giving bad news	0.9%
Specific experience described will make them a better doctor	0.8%
Dehumanization	0.6%
Total	25.1%