

# Introduction: The Use of Popular Culture in Medical and Health Education

*Evie Kendal and Basia Diug*

There is an increasing awareness of the role of mass media and popular culture in communicating health information to the general public and medical students.<sup>1</sup> Medical television series in particular have been identified as a rich source of health information and medical ethics training, depicting doctor–patient relationships that are both entertaining and educational. Recent research has shown that these fictional representations of the medical profession have an impact on perceptions of real-life doctors, and can influence recruitment of students into medical, nursing and health science degrees.<sup>2</sup> Beginning with CBS’s *City Hospital* in 1951, medical television dramas have remained a staple of prime-time television.<sup>3</sup> In his book, *Medicinema*, Brian Glasser notes that popular film culture and medicine have always been intricately connected, with film historians placing the first representations of medical personnel in fictional films before that of ‘cowboys, criminals or the clergy.’<sup>4</sup> With such a historically entrenched relationship between fact and fiction, it is unsurprising that medical dramas regularly come under scrutiny regarding their potential influence on public perceptions of doctors and the

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E. Kendal (✉) · B. Diug  
Monash University, Melbourne, VIC, Australia  
e-mail: evie.kendal@monash.edu

health system.<sup>5</sup> Furthermore, there is ongoing debate regarding the usefulness of televised medicine in medical and health science curriculum, with Roslyn Weaver and Ian Wilson reporting that university educators often seem concerned about ‘how the fictional world of medicine intrudes on and influences the real one.’<sup>6</sup>

The purpose of this edited collection is to discuss the use of popular culture in medical education, paying particular attention to medical television dramas. While there are many aspects of popular culture that go beyond television, Victoria Rideout notes that:

As a communications tool, TV continues to dominate, primarily because the size of its audience is unrivaled, dwarfing that of even the most popular websites. But hard evidence about the impact of so-called “edu-tainment” is hard to come by, and opportunities for large-scale, nationally representative evaluations of health messages in TV shows are rare.<sup>7</sup>

These difficulties are present both when evaluating the impact of popular television on the general public, as well as for medical and health students. With many tertiary education providers moving towards more evidence-based pedagogical practices, there is an urgent need to explore how educators are engaging with popular culture and the impact this is having on students’ learning. This process has been under way for some time, with previous studies demonstrating various methods of incorporating popular culture into university teaching and health communication more generally. The studies contained within this collection add to this knowledge base, in addition to providing practical teaching tips for educators in this field looking to exploit the power of popular media, while simultaneously avoiding some of the pitfalls associated with it. As such, it would be beneficial to first briefly review the results of recent research on this topic. This introduction will then conclude with a summary of each of the chapters in the collection.

## HOW HAS POPULAR CULTURE BEEN USED IN MEDICAL EDUCATION?

At its most basic, ‘popular culture’ can be defined as the cultural and artistic expressions that appeal to a large audience, whose dissemination is often facilitated through mass media, and which is generally distinguished somehow from ‘high’ or ‘elite’ culture.<sup>8</sup> The most common use

of popular culture reported in the medical education literature involves using episodes of popular medical television dramas in the place of more traditional case studies. Pablo Blasco et al. claim this method generates classroom discussion in a similar way to problem-based learning activities.<sup>9</sup> These discussions also occur outside the classroom, when students and members of the general public engage with these shows and talk about the medical and ethical issues portrayed in them. As such, Weaver et al. claim that medical television forms part of the ‘informal curriculum’ of medicine, exposing students to new perspectives about how medicine can or should be practised.<sup>10</sup> With a particular focus on medical ethics training, Angelo Volandes notes:

Film offers a powerful and underutilised medium in which clinical vignettes come alive in their rich and textured details, both medical and non-medical ... Phrases often appearing in written vignettes, such as “aggressive procedures” and “futile care”, lose their amorphous qualities as students see and experience ventilators and medical emergencies on the screen.<sup>11</sup>

Other authors agree that television episodes may be better suited to generating discussion than the short written scenarios often used in medical education. Jeffery Spike claims that this only works if the audience sees the whole story, rather than just a short clip, as familiarity with the television characters is essential for teasing out the complexities of the issues they face as doctors and patients.<sup>12</sup> He relates how an episode of *Scrubs* (‘My Fifteen Seconds’) was inspired by contemporary studies that showed doctors typically interrupted their patients after just 12–18 seconds, even though most patients would be able to convey their full message within 26–30 seconds if allowed to speak uninhibited.<sup>13</sup> The consequences of such an affront to the model doctor–patient relationship are conveyed well in the episode, in part because the series’ lead doctor, J.D., is the one who must come to the realisation that he was wrong when he said an average of fifteen seconds per patient was ‘all the time you need.’ When he almost loses a patient because he didn’t take the time to hear her whole story, he finally learns that as a doctor ‘you can never underestimate the importance of listening’—a lesson the viewer learns alongside him.<sup>14</sup> As the lovable, but flawed, fictional doctor, J.D. personifies the real-life doctors in those studies on average listening times, showing viewers not only how these situations come to be

common in medical practice, but also why we should be campaigning to change them. Such a poignant message is likely to stay with all viewers, but particularly those embarking on the very career depicted in the show. However, for the episode to have its full effect it must be watched in its entirety.

If devoting a significant proportion of an already limited class time to watching or discussing a medical television series, it is necessary to first have clear learning objectives in mind. Similarly, if hoping to use popular culture references to communicate health information to the lay public, evidence of the efficacy of this technique is needed. Two examples in the literature stand out as particularly well designed in this matter: one focused on teaching non-clinician epidemiologists about medical issues, and the other on educating the general public on HIV transmission rates. The first was a study by Truls Østbye et al. in 1997, in which epidemiologists and biostatisticians were asked to watch episodes of *ER* in tutorials. As stated by the authors, the established goals of this educational intervention were ‘to illustrate referral bias and other epidemiological issues in a clinical setting’ and ‘to provide human faces to the disease data students usually work with.’<sup>15</sup> As it was deemed impractical for these students to attend ward rounds, the fictional clinical setting of *ER* was used as a substitute, with students expected to record presenting symptoms and demographic information on the patients admitted in the episodes. The results of the study indicated students found the sessions interesting and informative, and that they provided a useful comparison between what diseases are most prevalent in the real world, versus those which get the most screen time in popular media, with a disproportionate number of trauma cases admitted as opposed to patients with chronic illnesses.<sup>16</sup> A similar trend has been observed in news media coverage of health conditions and medical research, with the more dramatic and rare injuries and diseases being reported on with greater frequency, a trend that has been shown to affect public perceptions of disease risk.<sup>17</sup>

The second example noted above is more recent, and involved surveying *Grey’s Anatomy* viewers to ascertain the educational impact of an episode focused on maternal-fetal HIV transmission rates. This study was completed by the Kaiser Family Foundation in 2008, and clearly demonstrated the educational potential of medical television dramas for a general audience.<sup>18</sup> First, members of the Foundation with expertise in HIV and pregnancy briefed the show’s writers, who then incorporated the issue of maternal-fetal HIV transmission into an episode (‘Piece of

My Heart’) that first aired on 1 May, 2008. The episode follows Izzie, one of the series’ regular doctors, as she cares for an HIV-positive patient who has just discovered she is pregnant. Believing her child will inevitably be infected by the virus, the patient requests an abortion. Izzie then makes numerous attempts to communicate to the patient that the real risk of transmission is very low if she is taking her standard medications throughout the pregnancy. Eventually Izzie convinces the patient it is safe for her to proceed with the pregnancy, stating: ‘I wasn’t saying there’s *some* chance your baby might not be sick. I’m saying there is a 98% chance your baby will be born perfectly healthy. *Ninety-eight percent*.’<sup>19</sup> Before the episode aired only 15% of survey respondents asked to estimate the likelihood of a healthy baby being born in this situation selected ‘more than a 90% chance.’ One week after viewing the episode this rose to 61%, with 45% still selecting this option six weeks after the episode.<sup>20</sup> Attitudes toward HIV-positive pregnant women were also investigated, with 61% of respondents before the episode stating it was irresponsible for an HIV-positive woman to have a baby, a figure which dropped to 34% the week after the episode aired. Survey items that were on the same topic but which were not directly referenced in the episode showed no change over the six-week period.<sup>21</sup>

Looking beyond television, celebrity and social media are also sources of health information for students and the general public. There has long been awareness that celebrities have the capacity to reach vast audiences with their health messages, representing an opportunity for effective health promotion, but also bringing fears regarding accuracy and safety.<sup>22</sup> Angelina Jolie’s highly publicised prophylactic double mastectomy in 2013, for example, encouraged many women to seek testing for the BRCA1 and BRCA2 gene mutations associated with increased risk of breast cancer, with one hereditary cancer clinic in New South Wales, Australia, recording a 300–400% increase in referrals for the six weeks following Jolie’s announcement.<sup>23</sup> This figure remained elevated a year later, with a 200% increase on the numbers of referrals compared to previous years. This became known as the ‘Angelina Effect,’ and inspired the Cancer Council Victoria to deliver an informative webinar regarding the true proportion of breast cancer cases in Australia linked to genetic factors (5–10%).<sup>24</sup> Despite the potential to exaggerate concerns regarding the BRCA mutations, Jolie’s advocacy increased awareness of a real health risk; however, there have also been a number of celebrity health campaigns that both students and the general public may have been

exposed to in recent memory, which were based on fraudulent or dangerous claims. One example includes that of ‘wellness’ blogger, Belle Gibson, who deceived a mass online following into believing she had cured her terminal cancer through holistic medicine and healthy eating. Gibson made a fortune from her ‘The Whole Pantry’ app and cookbook, which Consumers Affairs Victoria alleged was made through ‘false and misleading representations,’ and she has also been accused of failing to deliver charitable donations from her followers.<sup>25</sup> What is most interesting about both of these examples is how mass media communication facilitated the dissemination of health information, but not the necessary education to critically appraise the accuracy or relevance of this information to the audience. This highlights an opportunity within the health education sector to provide such analytical skills for students, as future health practitioners and educators themselves.

While the dominant focus of this collection is the use of popular television dramas, owing to their pervasive presence in medical curricula, contemporary celebrity health stories and scandals make interesting case studies to discuss in the classroom. There will also be some discussion of the role of social media, such as Twitter, on increasing health awareness among students and the general public, owing to the extensive reach such media have. This will intersect with recent developments in gamification for health promotion, including through gaming apps such as Metro Trains Victoria’s ‘Dumb Ways to Die,’ a rail safety promotion mobile game.

### WHY IS POPULAR CULTURE USED IN MEDICAL EDUCATION?

Doctors exist in popular culture as symbols of the chaotic influence of disease and death on people’s lives, both within the fictional world and in reality. Sickness often features in drama to heighten the emotions of the viewer as they identify with suffering patients and their families.<sup>26</sup> But why do fictional doctors and illnesses appear in medical education? For Østbye et al. *ER* was used for convenience as it provided a means of communicating medical information to methodologists that didn’t require hospital placements.<sup>27</sup> They note that prior to the 1950s such an intervention would not have been necessary, as the majority of epidemiologists were already physicians who just happened to engage in simple quantitative studies on the side. However, as epidemiological methods increased in sophistication the two fields diverged, meaning those trained

in advanced quantitative methods often required greater collaboration with biologists and clinicians to conduct their research.<sup>28</sup> Their study was intended to bridge some of this knowledge gap and provide a common language for such collaborations.

Another benefit of using popular television in the classroom is its capacity to evoke emotion and sympathy in viewers, qualities patients often accuse their doctors of lacking. Blasco et al. claim there is ‘growing concern that the human dimension of the physician is receding in the face of ever-emerging technological advances,’ noting that when patients report being dissatisfied with their care this often ‘points more to the human deficiencies of medical professionals than to their technical shortcomings.’<sup>29</sup> Using as a pedagogical tool a medium that many medical and health students already regularly engage with, captures their interest and emotions in a way lectures and case studies are unlikely to manage.<sup>30</sup> Anna Pavlov and Gregory Dahlquist also note that unlike the isolated classroom case study, the ‘continuity of the television series’ allows students to follow the lives of fictional doctors and patients over an extended period of time, providing a parallel to the practice of family medicine.<sup>31</sup> Surveys on medical students conducted by Weaver et al. also demonstrate that students are exposed to many issues related to professionalism and ethics through medical television series, and that they may draw from these fictional experiences when forming their identity as physicians.<sup>32</sup> They note that:

With careful selection, medical television dramas can engage students with important professionalism issues which are usually too abstract in the formal curriculum but perhaps too threatening in the clinical environment.<sup>33</sup>

It is important to remember that medical, nursing and health science students learn from their exposure to medical television, whether or not there is any deliberate attempt to include it in university curricula. The conscious use of popular culture in the classroom provides a valuable opportunity to mediate between students and the knowledge they receive from such media. Michael O’Connor further claims that series such as *ER* might provide pre-clinical students with ‘their most vivid glimpse into the practice of medicine,’ noting that a medical student who regularly watches the show over their four year medical degree will spend as much time engaged in this activity as in emergency medicine rotations.<sup>34</sup> Importantly, students might be exposed to clinical and

ethical issues in fictional media that may never arise during their limited hospital placements, providing an opportunity to discuss these issues as students before having to face them in practice.<sup>35</sup>

### WHAT IS THE EFFECT OF USING POPULAR CULTURE IN MEDICAL EDUCATION?

While previous research on the subject suggests many medical students are unaware of any influence of popular culture on their medical education, the high levels of consumption and recall within this cohort seem to indicate they are retaining information learned from these sources.<sup>36</sup> This has caused concern among some medical educators who question the accuracy of these shows. In 2009, two clinicians wrote a letter to the editor of the journal *Resuscitation* citing concerns about the frequency of suboptimal positioning of patients for endotracheal intubation. When surveying student doctors regarding their training in the area, the authors found that ‘after “trial and error”, a surprising number answered that television medical dramas had been an important influence,’ with *ER* being the most common source.<sup>37</sup> On analysing 22 instances of the technique in the show, the authors determined that ‘none (0/22) achieved more than one, let alone all three, components of optimal airway positioning.’<sup>38</sup> The potential for real-world impact is alarming, and indicates medical teaching facilities should be addressing what happens in these shows to prevent misinformation from negatively impacting patient care. Other authors relate that unrealistic expectations of the efficacy of cardio-pulmonary resuscitation, for doctors and patients alike, might stem in part from the frequency with which fictional patients survive after CPR. In an article for the *Journal of the American Medical Association* in 1998, O’Connor considered various studies in which long-term survival rates following CPR in television programmes including *ER*, *Chicago Hope* and *Rescue 911* were as high as 67%; meanwhile actual survival rates reported in the medical literature at the time were less than 15%.<sup>39</sup> The glamourisation of emergency medicine in these shows has also been implicated in changing recruitment patterns across specialities, especially since the premiere of *ER* in 1994.<sup>40</sup>

With regard to the impact of popular culture on the dissemination of health information for the general public, the Kaiser Family Foundation’s study of *Grey’s Anatomy* is again a useful example to consider. Of the

regular viewers surveyed, 45% reported learning something new about a health issue from watching the show and 17% of all viewers said they had sought further information on a topic they'd seen depicted, many seeking out health professionals to discuss the issue.<sup>41</sup> Rideout notes that since episodes of *Grey's Anatomy* average 20 million viewers, more than three million may have pursued a health issue on the basis of this exposure.<sup>42</sup> Extrapolating from the 46% increase in awareness of maternal-fetal HIV transmission rates seen in the first week following the target episode yields a total of over eight million people potentially educated on this issue by the show.<sup>43</sup> It is hard to imagine most medical journal articles having anywhere near this degree of influence. It also suggests that current and future doctors need to be made aware of the impact of popular culture on their patients' level of knowledge regarding certain health conditions.

Regarding popular television more generally, in 2005 the Centers for Disease Control and Prevention (CDC) released an Executive Summary of the Porter Novelli HealthStyles survey investigating the impact of popular television programmes on health education in the general population (n = 3479), with 67% of regular daytime drama viewers and 58% of regular prime-time drama viewers reporting learning something new about a health issue or disease from a television show in the previous six months. A further 8% of respondents reported learning about a health issue or disease from another person describing a television episode to them.<sup>44</sup> The report concludes that television dramas and comedies are powerful educational tools, and that the format of these shows promotes personal identification with the characters in a way that 'enhances learning and prevention' through 'parasocial interaction.'<sup>45</sup> As such, professionals responsible for educating the general public on health matters might benefit from the opportunity to understand how popular culture functions as an educational tool beyond the traditional classroom setting.

According to Katherine Foss, public perceptions of the medical profession have also followed trends in popular media. She refers to studies claiming that from the 1950s to the 1970s fictional doctors were typically portrayed as heroes, with heavy viewers of medical dramas reporting higher levels of trust for health professionals than people who either didn't watch these shows or who did so only occasionally.<sup>46</sup> She claims that as these representations have changed in news and popular media, so have attitudes and beliefs about health professionals in the real world. She particularly draws attention to the potential influence

of medical television series on underestimations of the rate of medical errors occurring in medical practice, and beliefs regarding the reasons behind such errors when they do arise.<sup>47</sup> Other studies have also shown that medical dramas can influence organ donation rates and the time taken before seeking emergency medical attention for conditions such as chest pain.<sup>48</sup>

## CHAPTER SUMMARIES

This collection opens with a chapter by Zohar Lederman, which focuses on the potential impact of representations of cardio-pulmonary resuscitation (CPR) in popular television on healthcare providers' perceptions toward whether family members should be present during this procedure. Comparing the official guidelines to depictions in medical television dramas, Lederman traces a shift in how family presence during CPR has been represented over time. In the second chapter, Jessica Bodoh-Creed notes how the 'CSI Effect' has been linked to jury members' inflated expectations of the role of forensic evidence in criminal trials, and argues for a similar impact on patients' expectations through what she terms the 'ER Effect.' The third chapter continues this theoretical approach to the role of popular culture in medical education, with Peta-Anne Zimmerman and Matt Mason evaluating the representation of infection prevention and control measures in zombie narratives. Candice-Brooke Woods et al. then consider the potential risks and benefits of using celebrity spokespeople rather than medical doctors in cancer prevention campaigns and social marketing. Across these chapters there is a critical focus on the impact of popular culture broadly conceived to include film, television, social media and celebrity culture.

The second half of this collection is focused on providing further practical examples for how educators can use popular culture in the classroom, beginning with two chapters by the collection's editors. The first looks at the potential to use medical television dramas for tertiary education, based on an analysis of the level of consumption and awareness of ethical and medical issues arising in these programs among health, biomedical and medical students. The second addresses how social media engagements and mobile gaming apps can be effectively embedded into formal curricula, to provide future health practitioners the skills they need to engage with this form of health promotion. The collection closes with two chapters by Allie Ford and Lynette Pretorius, focused on how

to use *Star Trek* to teach foundational medical ethics, and threshold concepts for patient-centred care in the mental health care sector. As a long-running film and television franchise incorporating both completed and continuing series, *Star Trek* is widely known and thus accessible to many audiences. The medical television dramas included throughout this section are likewise a mix of completed and ongoing series, satisfying different requirements for narrative closure and currency.

## NOTES

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2. *Ibid.*, 609; Roslyn Weaver and Ian Wilson, 'Australian Medical Students' Perceptions of Professionalism and Ethics in Medical Television Programs,' *BMC Medical Education* 11 (2011): 50; Matthew J. Czarny, Ruth R. Faden and Jeremy Sugarman, 'Bioethics and Professionalism in Popular Television Medical Dramas,' *Journal of Medical Ethics* 36 (2010): 203.
3. Tae Kyoung Lee and Laramie D. Taylor, 'The Motives For and Consequences of Viewing Television Medical Dramas,' *Health Communication* 29 (2014): 13; Tim Brooks and Earle Marsh, *The Complete Directory to Prime Time Network and Cable TV Shows 1946–Present* (New York: Ballantine Books, 2007), 257.
4. Brian Glasser, *Medicinema: Doctors in Films* (Oxford: Radcliffe Publishing, 2010), 1.
5. Anna Pavlov and Gregory E. Dahlquist, 'Teaching Communication and Professionalism Using a Popular Medical Drama,' *Family Medicine* 42, no. 1 (2010): 25.
6. Weaver and Wilson, 'Australian Medical Students,' 54.
7. Victoria Rideout, 'Television as a Health Educator: A Case Study of Grey's Anatomy,' A Kaiser Family Foundation Report, September 2008, 1.
8. A variety of definitions are outlined and evaluated in Dominic Strinati's *An Introduction to Theories of Popular Culture*, 2nd edition (London and New York: Routledge, 1995).
9. Pablo G. Blasco, Cauê F. Mônaco, Maria Auxiliadora C. De Benedetto, Graziela Moreto and Marcelo R. Levites, 'Teaching Through Movies in a Multicultural Scenario: Overcoming Cultural Barriers Through Emotions and Reflection,' *Family Medicine* 42, no. 1 (2010): 24.
10. Weaver, Wilson and Langendyk, 'Medical Professionalism,' 607.

11. Angelo Volandes, 'Medical Ethics on Film: Towards a Reconstruction of the Teaching of Healthcare Professionals,' *Journal of Medical Ethics* 33 (2007): 678–9.
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13. *Ibid.*, 11.
14. *Scrubs*, 'My Fifteen Seconds,' Episode 7, Season 3. Directed by Ken Wittingham. Written by Mark Stegeman. NBC, 20 November 2003.
15. Truls Østbye, Bill Miller and Heather Keller, 'Throw that Epidemiologist out of the Emergency Room! Using the Television Series *ER* as a Vehicle for Teaching Methodologists about Medical Issues,' *Journal of Clinical Epidemiology* 50, no. 10 (1997): 1184.
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18. Rideout, 'Television as a Health Educator,' 2.
19. *Grey's Anatomy*, 'Piece of My Heart,' Episode 13, Season 4. Directed by Mark Tinker. Written by Stacy McKee. ABC, 1 May 2008.
20. Rideout, 'Television as a Health Educator,' 3.
21. *Ibid.*, 6.
22. Judith A. Baker, Cyndi J. Lepley, Satya Krishnan and Kathryn S. Victory, 'Celebrities as Health Educators: Media Advocacy Guidelines,' *Journal of School Health* 62, no. 9 (1992): 433.
23. Kate Dunlop, Judy Kirk and Kathy Tucker, 'In the Wake of Angelina – Managing a Family History of Breast Cancer,' *Australian Family Physician* 43, nos. 1–2 (2014): 76.
24. *Ibid.*; Cancer Council Victoria, 'Angelina Jolie and genetic breast cancer risk,' 15 May 2013, available at: <http://www.cancervic.org.au/about/media-releases/2013-media-releases/may-2013/angelina-jolie.html>.
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26. Glasser, *Medicinema*, 122.
27. Østbye et al. 'Throw that Epidemiologist,' 1183–4.
28. *Ibid.*, 1183.
29. Blasco et al. 'Teaching Through Movies,' 22.

30. Weaver, Wilson and Langendyk, 'Medical Professionalism,' 599.
31. Pavlov and Dahlquist, 'Teaching Communication,' 25.
32. Weaver, Wilson and Langendyk, 'Medical Professionalism,' 608; Weaver and Wilson, 'Australian Medical Students,' 50.
33. Ibid.
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36. Weaver and Wilson, 'Australian Medical Students,' 53–4.
37. P.G. Brindley and C. Needham, 'Positioning Prior to Endotracheal Intubation on a Television Medical Drama: Perhaps Life Mimics Art,' [letter to the editor] *Resuscitation* 80 (2009): 604.
38. Ibid.
39. O'Connor, 'The Role of the Television Drama,' 854.
40. Ibid.
41. Rideout, 'Television as a Health Educator,' 5–6.
42. Ibid., 9.
43. Ibid., 8.
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47. Ibid., 502.
48. Bruce B. Dan, 'TV or not TV: Communicating Health Information to the Public,' [editorial] *JAMA* 268, no. 8 (1992): 1027.

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