What's in a name?

Epidemiology and prognosis of coma in daytime television dramas

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Abstract

Objective To determine how soap operas portray, and possibly misrepresent, the likelihood of recovery for patients in coma.
Design Retrospective cohort study.
Setting Nine soap operas in the United States reviewed between 1 January 1995 and 15 May 2005.
Subjects 64 characters who experienced a period of unconsciousness lasting at least 24 hours. Their final status at the end of the follow-up period was compared with pooled data from a meta-analysis.
Results Comas lasted a median of 13 days (interquartile range 7-25 days). Fifty seven (89%) patients recovered fully, five (8%) died, and two (3%) remained in a vegetative state. Mortality for non-traumatic and traumatic coma was significantly lower than would be predicted from the meta-analysis data (non-traumatic 4% *v* 53%; traumatic 6% *v* 67%; Fisher's exact test both $P<0.001$). On the day that patients regained consciousness, most (49/57; 86%) had no evidence of limited function, cognitive deficit, or residual disability needing rehabilitation. Compared with meta-analysis data, patients in this sample had a much better than expected chance of returning to normal function (non-traumatic 91% *v* 1%; traumatic 89% *v* 7%; both $P<0.001$).
Conclusions The portrayal of coma in soap operas is overly optimistic. Although these programmes are presented as fiction, they may contribute to unrealistic expectations of recovery.

Introduction

Coma is a challenging complication of a variety of injuries.[1–6] Some comatose patients recover full function, some die, and others remain unconscious or exhibit preserved sleep-wake cycles, a condition known as persistent vegetative state.[2 7] Decisions about artificial nutrition and other forms of life sustaining treatment are often necessary,[8 9] but prognostic uncertainty can make these decisions particularly difficult for families and physicians.[1 10–12] Unrealistic expectations for recovery often contribute to disagreements about treatment, in which families and providers turn to the courts for assistance, most visibly in the recent Schiavo case in the United States.[13–15]

Mass media may influence these expectations, and television in particular can affect knowledge of health problems, promote attitudes and norms, and influence behaviour.[16 17] One genre—daytime dramas or "soap operas"—is a persuasive source of health information for viewers. These programmes reach more than 40 million viewers in the United States and are broadcast in at least 90 other countries.[18 19] In fact, soap operas are often used in industrialised and underdeveloped countries as a public health intervention to promote certain behaviours,[20–23] and they may even have unintended effects on viewers' health related behaviour.[24] However, the features that promote behaviour change—a compelling story, complex character development, and loyal audience—mean that misinformation can also have a far reaching and pernicious effect. For instance, television dramatically exaggerates survival after cardiopulmonary resuscitation.[25] It is not known whether soap operas offer a similarly optimistic picture of outcomes of coma, so the goal of this study was to determine how soap operas portray the probability of recovery in coma and persistent vegetative state.

Methods

Three authors (DC, HJMacM, AP) searched the internet for episodes of soap operas shown in the United States in which a character was unconscious for at least 24 hours after an injury or medical event. The initial search strategy used Google, with the search terms "soap opera" and "unconscious" or "coma." Supplemental searches used television network websites, sanctioned digest websites (such as www.soapcentral.com), and websites that reproduce daytime drama storylines. We identified nine programmes televised in the United States between 1 January 1995 and 15 May 2005: *Guiding Light*, *General Hospital*, *One Life to Live*, *Days of Our Lives*, *All My Children*, *Passions*, *As the World Turns*, *The Young and the Restless*, and *The Bold and the Beautiful*.

We included only the first episode of coma for each patient. We determined the patient's characteristics and the cause of coma by reviewing the storyline at an official or sanctioned website and resolved disagreement by consensus (DC, HJMacM, AP). When a patient had an identity change (a facial transplant in one case), we used the characteristics of the original patient for analysis. Tests that have been found to predict prognosis (for example, evoked potentials, imaging)[3 26 27]

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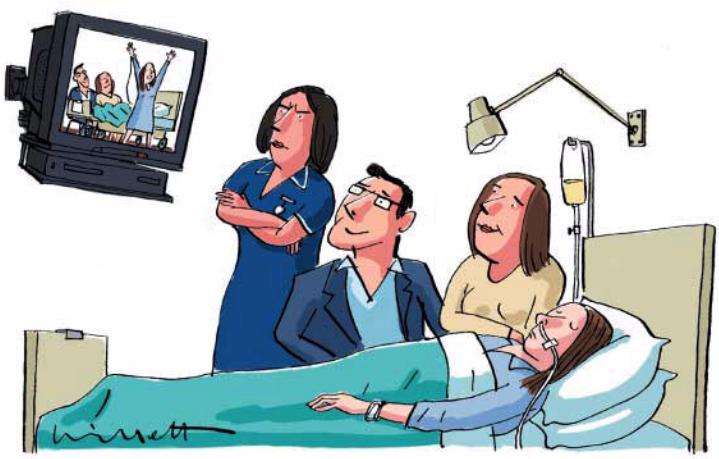
Characteristics of patient (n=64)

Characteristic	No (%)
Female sex	35 (55)
Ethnicity	
White	50 (77)
African-American	6 (9)
Hispanic	6 (9)
Unknown	2 (3)
Cause of coma	
Traumatic coma:	41 (64)
Gunshot wound	9 (14)
Blunt trauma	8 (12)
Burn/smoke inhalation	7 (11)
Motor vehicle collision (driver/passenger)	6 (9)
Motor vehicle collision (pedestrian)	3 (5)
Fall	2 (3)
Stab wound	2 (3)
Laceration/blood loss	1 (1)
Plane crash	1 (1)
Shipwreck	1 (1)
Injury (not specified)	1 (1)
Non-traumatic coma:	23 (36)
Poisoning/overdose	6 (9)
Stroke	6 (9)
Cardiac arrest	3 (5)
Idiopathic	2 (3)
Medication error	2 (3)
Hypoxia	1 (1)
Near drowning	1 (1)
Infection	1 (1)
Complication of surgery	1 (1)

were not routinely described and so were not included in the search strategy.

We followed patients until recovery, death, or their last appearance, whichever came first. We determined follow-up time by real time, as the viewer would have experienced it. We used all available website summaries to define functional status on the Glasgow outcome scale[28] by consensus (DC, HJMacM, AP). Categories included good recovery, moderate disability (limited occupational or social function), severe disability (partial or total dependence in activities of daily living), persistent vegetative state, and death.

We used Fisher's exact test to compare survival rates of soap opera patients with pooled data reported in an authoritative meta-analysis.[1] When soap opera patients had a non-traumatic injury, we compared their outcomes with those of all patients from the meta-analysis. However, available case series of traumatic injury generally include only those patients who remained unconscious after one month. We therefore compared soap opera patients with traumatic comas within this subgroup. We used Stata statistical software (version 8.0) for all statistical analysis.



Results

Of 73 comas identified, six patients were ineligible (one seemed to wake for meals, two had fraudulent comas, and three comas were pharmacologically induced), and we excluded three because their final condition could not be determined. The table describes the remaining 64 patients in the study sample.

These patients spent a median of 13 days (interquartile range 7-25 days) in a coma. Fifty seven (89%) patients recovered fully, five (8%) died, and two (3%) remained in a vegetative state at the end of follow-up. Two patients who died were later revealed to be alive (in one case, a body had been replaced with a mannequin), but we counted them as deaths because we reasoned that viewers would perceive them as having died.

The mortality for non-traumatic coma (1/23) was significantly lower at one year in soap opera patients than would be predicted from pooled meta-analysis data (90/169; $P<0.001$).[1] Of the 16 soap opera patients who were in a traumatic coma one month after injury, only one died, which is much lower than the mortality predicted by meta-analysis data (291/434; $P<0.001$).[1]

Overall, half the patients recovered within the first month (n=32; 50%), and almost all recovered within three months (55; 86%). Of the 41 patients with a traumatic injury, 20 (49%) recovered within one month, 34 (83%) recovered within three months, and two patients recovered six months or more after injury (total 36/41; 88%). Of the 23 patients with a non-traumatic injury, 13 (56%) recovered within one month, and all of the 21 (91%) patients who recovered had done so by three months.

On the day that patients regained consciousness, most (49/57; 86%) had no residual disability, although some seemed to have retrograde or anterograde amnesia. The eight patients with a residual disability had one or more of difficulty speaking (4; 7%), inability to ambulate (3; 5%), disorientation (2; 4%), and respiratory failure or ventilator dependence (1; 2%). All eventually returned to their previous state of health. Compared with meta-analysis data, patients had a much better than expected chance of returning to normal function after a non-traumatic injury (21/23 *v* 1/169; $P<0.001$).[1] Among those in a coma one month after traumatic injury, the probability of regaining normal function was also better than predicted (14/16 *v* 30/434; $P<0.001$).[1]

Discussion

Patients in soap operas who experience coma after traumatic or non-traumatic injury have a better than expected chance of survival. Moreover, they are very likely to regain full function. These outcomes are unprecedented and offer television viewers a picture of

coma and persistent vegetative state that is overly optimistic in two key respects.

Firstly, the vast majority of these patients survived. Moreover, because two deaths were staged, the true survival rate is actually even higher than that reported here. This finding is at odds with previous studies that have found coma to be associated with survival rates of 50% or less.[1 4 29] Indeed, patients with non-traumatic coma have a one month survival rate of 15%.[1 27 30] Survival rates for coma after traumatic injury are often higher but are still substantially lower than the rates seen in this study.[1 5 31]

Secondly, all surviving patients in this sample eventually regained full function, which is very unusual.[1 29 32] For instance, typical rates of full recovery from coma after a non-traumatic injury are usually less than 10%.[1] Patients typically experience subtle cognitive and functional deficits,[33] which were not evident in these patients, who rapidly resumed their previous occupational, social, and romantic activities. In contrast, for real patients the recovery process usually involves months of rehabilitation with intensive physical and occupational therapy.[34 35]

This study has two main limitations. Firstly, elderly patients and those who have had cardiopulmonary resuscitation are underrepresented in this sample, which could partly explain the better survival results described here. Nevertheless, viewers receive an impression of good prognosis and a virtually certain return to full function. Secondly, some functional deficits may have been portrayed too subtly to be detected. However, many patients successfully returned to highly demanding professions (for example, physician, shipping tycoon), giving viewers a picture of full recovery.

These findings show that soap operas portray an unrealistically optimistic version of the outcomes of patients in comas. Whether these programmes influence viewers' beliefs about prognosis is not known, but television storylines are well known to carry substantial power to convince viewers.[21 22 24 36 37] Therefore, it is reasonable to infer that regular viewers of soap operas may be more likely to hold implausibly favourable views of the prognosis of coma.

Of course, soap opera storylines are not always written to reflect real life. Characters have much more favourable outcomes from coma, but they also seem to face an extraordinarily high all cause mortality.[38] Soap operas are not designed with the goal of educating the public about the realities of health and illness or even about the realities of interpersonal relationships, but they may contribute to public misperceptions in these areas. In the interests of public health, soap operas and other forms of mass media should seek to balance stories of improbable survival and recovery with compelling and compassionate stories of characters who die with comfort and dignity.

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