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Medical and Nursing Students' Television Viewing Habits: Potential Implications for Bioethics

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Abstract

Television medical dramas frequently depict the practice of medicine and bioethical issues in a strikingly realistic but sometimes inaccurate fashion. Because these shows depict medicine so vividly and are so relevant to the career interests of medical and nursing students, they may affect these students' beliefs, attitudes, and perceptions regarding the practice of medicine and bioethical issues. We conducted a web-based survey of medical and nursing students to determine the medical drama viewing habits and impressions of bioethical issues depicted in them. More than 80% of medical and nursing students watch television medical dramas. Students with more clinical experience tended to have impressions that were more negative than those of students without clinical experience. Furthermore, viewing of television medical dramas is a social event and many students discuss the bioethical issues they observe with friends and family. Television medical dramas may stimulate students to think about and discuss bioethical issues.

Keywords

Bioethics; education; ethics; professional education; media; television

Television medical dramas are tremendously popular. Last season (fall 2006 to spring 2007), the top two television medical dramas, *Grey's Anatomy* and *House, M.D.*, ranked seventh and ninth in the top primetime television programs, respectively (Nielson 2008). Our previous work revealed that there is an abundance of bioethical issues depicted in these programs (Czarny et al. unpublished, 2008). Of particular concern are portrayals of clearly unethical behaviors, such as lying to potential living organ donors about the status of the intended recipient to secure donation. Given the importance of the academic environment and the role of mentoring of health professions in addressing ethical issues in practice and research (Anderson et al. 2007; Byrne and Keefe 2002; Sambunjak et al. 2006), these television programs are of concern to the extent that they might also influence the attitudes

and behaviors of young professionals. Accordingly, we sought to determine the television viewing habits and impressions of bioethical issues in medical dramas among medical and nursing students.

METHODS

We constructed a web-based survey designed to gather data on basic demographic characteristics, general television viewing habits, television medical drama viewing habits, impressions of bioethical and professionalism issues in television medical dramas, sources of education about bioethics, and sources of information on bioethical issues (Appendix 1). In constructing the survey, we paid special attention to possible sources of measurement error in web-based surveys including question type, multiple-choice answer grouping, and answer formats (Dillman and Smyth 2007). For example, we ensured that all survey text was visible on the computer screen without the need to scroll, avoided complicated response grids, and did not force respondents to answer all questions in order to advance in the survey.

After our study protocol was reviewed and declared exempt by the Johns Hopkins Medicine institutional review board, we pilot-tested the survey with three medical students and three nursing students at outside institutions. After the students completed the survey, one author (Czarny) contacted them by telephone and elicited their comments and concerns on the structure, content, and ease of use of the survey. All the authors then reviewed these comments, and the survey was modified accordingly. The modified survey was circulated to selected faculty members within the Johns Hopkins Berman Institute of Bioethics and further revisions were made based upon their suggestions. The final survey appears in Appendix 1.

We sampled all students pursuing a degree in medicine or a bachelor's of science in nursing (MD or BSN) degree at the Johns Hopkins University. All of the MD candidates and 89% of the BSN candidates had previously obtained a bachelor's degree. We distributed the survey during the fall of 2007 at a time selected to avoid examinations for both medical and nursing students in order to maximize student participation. We invited participation in the survey using an e-mail invitation, which was re-sent at 1 and 3 weeks after the start of the survey. An explanation of the study was provided at the start of the online survey, and consent was presumed if students continued to complete the survey after reading the consent information. All survey responses were entirely anonymous and no incentives were offered for participation in the study. After 4 weeks, the survey was closed. Data were then deposited into a Microsoft Access 2007 (Microsoft Corporation, Redmond, WA) file. The statistical package for the social sciences (SPSS, Inc., Chicago, IL) version 14, Microsoft Excel 2007 (Microsoft Corporation, Redmond, WA), and Mathcad version 11 (PTC, Needham, MA) were used to analyze the data. Standard descriptive statistics were used to summarize the demographic characteristics of the sample. The comparison of proportions was used to analyze categorical data and the Student's t-test was used for continuous data. Finally, to examine the interaction between gender and discipline on viewing behaviors, we used logistic regression analysis.

We hypothesized that formal education and experience in the hospital setting would influence students' perceptions of the handling of bioethical issues, and our analysis is therefore structured to test that hypothesis. Since first- and second-year medical students (MS1 and MS2, or "pre-clinical medical students") have not experienced in-hospital training or direct patient care responsibilities, we analyzed them separately from third- and fourth-year medical students (MS3 and MS4, "clinical medical students") for whom direct patient care responsibilities are part of training. Nursing students begin their clinical training early

in their first year, and thus are similar to MS3s and MS4s in that respect. Because of the uniqueness of nursing and medical training, however, in most of our initial analyses nursing students were considered to be distinct from MS3s and MS4s. Subsequent analyses were analyzed by gender across student groups.

In analyzing our data, we grouped responses for three items. One of the items asked respondents who remembered an incident involving a bioethical issue to classify their impression of the television program's handling of the recalled incident as "poor," "sub-par," "okay," or "best." For the purposes of this analysis, "poor" and "sub-par" were grouped into the category of "inadequate"; "okay" and "best" were grouped into "adequate." A second item asked respondents to rank 10 sources of bioethics information from 1 to 10, with 1 being the most important source and 10 being the least important source. For each source, respondent rankings of 1 through 5 were grouped as "important"; rankings of 6 through 10 were grouped as "unimportant." A third item asked respondents to rate the accuracy of the depictions of ethical issues arising in clinical practice on television medical programs. The scale ranged from 0 to 5, and responses of 0 through 2 were grouped as "mostly inadequate"; responses from 3 through 5 were grouped as "mostly adequate."

Finally, survey questions about medical program viewing habits included four medical dramas as well as one medical comedy (*Scrubs*) and a free-response selection ("Other"). Since medical comedy programs were not seen as having the same potential as medical dramas to influence students' views of how ethical issues are actually addressed in hospitals, all of the analyses in this report include only medical dramas.

RESULTS

The population sampled consisted of 477 medical students and 372 nursing students at the Johns Hopkins University (Table 1). A total of 374 students began the survey and completed the first seven questions, which asked for demographic information and basic television viewing habits (44% response rate). The average age of the responding medical students was approximately 1.6 years less than the average age of all medical students at the Johns Hopkins University (24.58 and 26.11 years, respectively; $p < 0.001$); the average age of the responding nursing students was not significantly different from the average age of the nursing student population (27.02 and 27.87 years, respectively; $p = 0.150$). Of the 374 students who began the survey, 248 continued past the demographic information to the rest of the survey, which assessed more detailed information about medical drama viewing habits and impressions of bioethical issues (29% response rate). There was no significant difference in average age between those beginning the survey and those completing the entire survey for medical or nursing students ($p = 0.672$ and $p = 0.427$, respectively).

Overall, 98% of medical and nursing students surveyed had watched television within the past year (99% of women; 95% of men). Approximately 90% or more of both medical and nursing students reported watching dramas, comedies, news, and movies on television, while 84% of medical students and 81% of nursing students watched television medical dramas ($p = 0.454$). These rates do not change substantially when analyzed by gender, with the exception that 87% of women and 70% of men watch television medical dramas ($p < 0.001$).

In order to further define the medical drama viewing habits of male and female students of medicine and nursing, we gathered information specific to four programs: *ER*; *Grey's Anatomy*; *House, M.D.*; and *Nip/Tuck* (Table 2). Since all of the medical dramas were listed in the question, it was possible for respondents to answer parts of this question in the affirmative while leaving other parts unanswered, e.g., "Yes" to *Grey's Anatomy* and *Nip/Tuck* but blank answers for the other options. In such cases, we considered any answer left

blank in the context of one or more “Yes” answers to be a “No” while those respondents who left the entire question (as well as the rest of the survey) blank were excluded from this analysis. Since 248 respondents answered this question and continued with the rest of the survey, this is the denominator for calculating the proportion of television medical drama viewers watching a specific program.

Because the proportion of respondents watching TV medical dramas differed by gender rather than profession, we combined the data on medical and nursing students and stratified medical drama viewing habits by gender. There was no difference between the proportion of male and female students (nursing and medical students combined) who watch *ER* (38% and 39%, respectively; $p = 0.895$) or *Nip Tuck* (29% and 20%, respectively; $p = 0.162$), but significant differences were present for *Grey’s Anatomy* and *House, M.D.* A total of 81% of female students and 63% of male students reported watching *Grey’s Anatomy* ($p = 0.006$); 69% of female students and 83% of male students reported watching *House, M.D.* ($p = 0.047$). The frequency with which respondents who viewed medical dramas watched once or more per week ranged up to 40% with one exception; women watching *Grey’s Anatomy* stood out, with 61% of viewers watching once or more per week. By comparison, only 35% of male *Grey’s Anatomy* viewers watched once or more per week ($p = 0.008$). More than 50% of all combined male and female viewers reported watching *Grey’s Anatomy*, *House, M.D.*, and *Nip/Tuck* with others; only 25% of viewers of *ER* reported watching with others. There was no significant difference based on gender in this regard.

In an attempt to gain insight into the medical drama viewing habits stratified by gender, we reanalyzed the same data but stratified by profession (Table 2). Approximately the same proportion of medical students and nursing students watched *ER* (39% and 38%, respectively; $p = 0.872$), *Grey’s Anatomy* (73% and 80%, respectively; $p = 0.195$) and *Nip/Tuck* (19% and 25%, respectively; $p = 0.255$), but a larger proportion of medical students than nursing students watched *House, M.D.* (76% and 65%, respectively; $p = 0.049$). In addition, 49% of medical student viewers and 66% of nursing student viewers watched *Grey’s Anatomy* once or more per week ($p = 0.020$). The difference is greater for *Nip/Tuck*, with 4% of medical student viewers and 35% of nursing student viewers watching once or more per week ($p = 0.007$).

Since most of the nursing students in our sample are women and the sample of medical students had a higher proportion of men, we performed logistic regression analyses and regression diagnostics to determine if there was an interaction between gender and discipline in those watching *Grey’s Anatomy* and *House, M.D.* Adjusting for discipline, the odds of watching *Grey’s Anatomy* were twice as high in women compared with men males (OR = 2.17, 95% CI: 1.07 to 4.39), whereas the odds of watching *House, M.D.*, were not significantly different for women compared with men males (OR = 0.53, 95% CI: 0.24 to 1.20). Adjusting for gender, the odds of watching *Grey’s Anatomy* or *House, M.D.*, were not significantly different for medical students compared to nursing students (OR = 0.78, 95% CI: 0.41 to 1.48 for *Grey’s Anatomy*; OR = 1.54, 95% CI: 0.86 to 2.76 for *House, M.D.*). Similarly, adjusting for discipline, the odds of women watching *Grey’s Anatomy* once or more each week were twice as high as the odds for men (OR = 2.57, 95% CI: 1.12 to 5.88). Adjusting for gender, there was no difference in the odds of watching *Grey’s Anatomy* once or more each week for medical students compared to nursing students (OR = 0.64, 95% CI: 0.34 to 1.18).

We also asked respondents to rate the accuracy of ethical issues arising in clinical practice as depicted on any television medical program. A total of 44% of pre-clinical medical students ($n = 72$), 33% of clinical medical students ($n = 57$), and 31% of nursing students ($n = 118$) rated such depictions as “mostly adequate.” Differences between the proportions of each

group responding “mostly adequate” were not statistically significant (pre-clinical medical students to clinical medical students, $p = 0.200$; pre-clinical medical students to nursing students, $p = 0.053$; pre-clinical medical students to nursing students, $p = 0.374$).

In order to begin to characterize the ways in which medical and nursing students view the ethical issues that arise in medical dramas, we asked respondents if they remembered viewing depictions involving certain bioethical issues in any television medical drama (Table 3). Ethical issues about death and dying were most frequently recalled (96%), followed by professional misconduct (92%), medical mistakes (86%), infectious diseases (83%), quality/value of life/personhood (78%), artificial and transplanted organs/tissues (74%), confidentiality (74%), access to and equity in health care (64%), truth disclosure (62%), informed consent (60%), education for health care professionals (59%), enhancement (54%), rationing care (41%), and human experimentation (27%).

In order to compare the impressions of pre-clinical medical students, clinical medical students, and nursing students on how depictions of specific bioethical issues were handled in the medical dramas, we compared the percentage of respondents rating a depiction as adequate among the three groups (Table 4). When compared to clinical medical students or nursing students, pre-clinical medical students more frequently rated depictions as adequate of artificial and transplanted organs/tissues ($p = 0.006$ and $p = 0.034$, respectively) and confidentiality ($p < 0.001$ and $p < 0.001$, respectively) as adequate more frequently. Clinical medical students and nursing students, however, were not different in their assessments of either of these ethical issues ($p = 0.358$ for artificial and transplanted organs/tissues, $p = 0.484$ for confidentiality). Pre-clinical medical students also more frequently rated as adequate depictions of human experimentation than did clinical medical students or nursing students, but the difference was only significant for the comparison with nursing students ($p = 0.004$ and $p = 0.070$). Both pre-clinical medical students and nursing students more frequently rated as adequate depictions of ethical issues surrounding infectious diseases than did clinical medical students ($p = 0.03$ and $p = 0.006$, respectively). Furthermore, pre-clinical medical students more frequently rated medical mistakes as handled adequately than did clinical medical students or nursing students, but the difference was only significant for the comparison with clinical medical students ($p = 0.044$ and $p = 0.056$).

Finally, we asked respondents if they ever discuss with friends the bioethical issues that they see on any television medical programs or if friends or family ever ask the respondents about bioethical issues from any television medical programs. A total of 49% of medical students and 55% of nursing students discuss these bioethical issues with friends, and 41% of medical students and 47% of nursing students have been asked by friends or family about a bioethical issue viewed on television. When we asked where they get information about bioethical issues, the top three sources were medical/nursing school, family, and scholarly journals while the three least used sources were popular magazines, TV medical dramas, and clergy (Table 5).

DISCUSSION

Our study suggests that almost all medical and nursing students watch television, and most watch television medical dramas. These programs provide students with an array of messages regarding the care of patients and the difficult bioethical challenges that are sometimes entailed. There is some evidence that medical dramas can effect behavior change in the general public (Valente et al. 2007) and thus the possible effect of medical dramas on the beliefs and behaviors of medical and nursing students is of some concern. In addition, there has recently been a focus on the importance of the “informal curriculum” and mentorship in the education of health care professionals regarding ethical issues in practice

and in research (Anderson et al. 2007; Byrne and Keefe 2002; Sambunjak et al. 2006; Stephenson et al. 2001). Arguably, an expanded notion of the informal curriculum could be taken to include not only what students are exposed to on actual clinical services but also what students are exposed to in the fictionalized clinical world of television drama.

If medical dramas are influencing the perceptions and attitudes of medical and nursing students, the specific story lines and settings of a particular medical drama may have different effects. For example, *ER* tends to highlight ethical issues faced by physicians and nurses in the daily experience of an emergency department, while *Grey's Anatomy* focuses on the ethical issues that emerge on a surgical service. By contrast, *House, M.D.*, focuses largely on difficult diagnostic cases from across the medical spectrum and the unorthodox and frequently unethical methods utilized by Dr. Gregory House to resolve them. While these shows are concerned with love interests and personal relationships, in *House, M.D* the medical particulars of specific cases are generally more central to the story line than in *Grey's Anatomy*, *ER*, or *Nip/Tuck*.

Our data suggest that medical and nursing students are more likely to be exposed to bioethical issues in *Grey's Anatomy* and *House, M.D.*, than in *ER* or *Nip/Tuck*. Moreover, *Grey's Anatomy* is likely to be particularly influential with female students in both medicine and nursing, who are receiving larger “doses” of *Grey's Anatomy* than are male students. It is also noteworthy that nearly two-thirds of students who watch *Grey's Anatomy* reported doing so with others. Such group viewing provides easy opportunities to discuss the ethical issues that are depicted, either during the viewing or at a later time. Indeed, given how many students reported being asked by family or friends about ethical issues viewed on a medical drama or having discussed those bioethical issues with their friends, it is likely that for many medical and nursing students viewing medical dramas is a social activity that may facilitate the formation of new opinions and perceptions.

Also of interest were the differences in students' opinions of the adequacy of the handling of ethical issues based on their level of clinical exposure. This observation underscores the power of clinical experience and mentorship in shaping impressions about bioethical issues (Anderson et al. 2007; Byrne and Keefe 2002; Sambunjak et al. 2006). The finding that more than 50% of viewers watch with friends and that approximately 50% discussed these ethical issues with friends supports the contention that these medical dramas may be an important part of “the informal curriculum”. In this respect, the simulated realism of dramatized cases involving medical ethics issues may prompt students to not only imagine, but also shape their responses to such issues. Nevertheless, medical and nursing students in this study almost universally rated television medical dramas as an insignificant source of information about bioethics. It is possible that given the apparent popularity of these shows with health-professional students, these self-assessments of their impact may not be entirely correct. A prospective study evaluating students' impressions of a bioethical issue before and after the viewing of the issue depicted in a medical drama would be necessary to more precisely measure the impact of these programs on the students' beliefs and attitudes.

Of course, our results should be interpreted with some limitations in mind. First, we sampled students at one university and it is possible that students at other universities will have different viewing habits. Second, the viewing frequencies that we describe may over estimate actual viewing frequencies since those who do not watch television or do not watch medical dramas may have been less inclined to complete the survey. Third, although the difference between the average age of our sample of nursing students and that of the nursing student population was not statistically significant, the medical students in our sample were more than 1.5 years younger than the average age of the population of medical students. This may be due to a higher response rate among pre-clinical medical students, but we are

unable to determine this based on the anonymous nature of our survey. Regardless, our results may not be entirely representative of the older population of medical students. Fourth, a possible over-representation of female medical drama viewers in this study may have led us to overestimate the odds ratios for women compared with men in medical drama viewing habits.

This study was not designed to establish the actual effects of televised medical dramas on the bioethics-related attitudes and practices of students in the health professions. However, given how popular these shows are with students and how frequently students recalled portrayals of the ethical issues the shows address, future research should try to assess these effects. Moreover, rather than being concerned about the effects of these programs on novice health professionals, faculty in schools of medicine and nursing may wish to proactively use such programs in teaching as has been done with other television programs (Hughes and Lantos, 2001). For example, students are infrequently directly involved with major ethical tensions surrounding issues such as organ donation during training. A brief clip from a medical drama portraying such an issue could stimulate students' ethical analysis and allow for faculty guidance. Research regarding the impact of such educational uses of medical dramas would also make a significant contribution to the literature on medical and nursing education. ■

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APPENDIX 1. SURVEY

This survey is part of a research project at the Johns Hopkins Berman Institute of Bioethics. The survey is intended to gather information on the television (TV)-viewing habits of medical and nursing students at the Johns Hopkins University. Specifically, it contains basic demographic questions as well as questions designed to assess the frequency of viewing medical dramas on TV and the perceptions of the bioethical issues portrayed on those programs.

This survey could take up to 10 minutes to complete. All data collected are anonymous. Please wait until you have 10 minutes to complete the survey in one sitting, since on exiting the survey your answers cannot be retrieved. Although you may exit the survey and discontinue participation at any time, your answers will be recorded each time you advance to the next page of questions.

Questions about this survey can be directed to Dr. Jeremy Sugarman at jsugarm1@jhmi.edu.

If you agree to participate, please click “Next” to begin the survey.

Q1: Are you a: Medical Student/Nursing Student?

Q2: What year of medical/nursing school are you currently in? (If you are enrolled in a joint program, please answer with the year of medical or nursing school). 1/2/ 3/4

Q3: What is your age?

Q4: What is your sex? Female/Male

Q5: Have you watched a television program in the past year? Yes/No

Q6: Which of the following types of television programs have you watched in the past year?

Comedies: Yes/No

Dramas: Yes/No

Movies: Yes/No

News: Yes/No

Sports: Yes/No

Q7: Do you watch television medical dramas? Yes/No

Q8: Over the past year, have you watched any of the following medical programs? If so, how often?

Programs: *ER* / *Grey’s Anatomy* / *House, M.D.* / *Nip Tuck* / *Scrubs* / Other (please specify)

Watch format options: New episodes on TV/Re-runs on TV / digital video disc (DVD) / New episodes and re-runs on TV / Re-runs on TV and DVD / New episodes on TV and DVD / Download to MP3 player / All of the above / I do not watch

Frequency options: Never / Less than once per week / 1–3 times per week / 4–6 times per week / Greater than 6 times per week

Q9: Do you watch any of the following medical programs with friends?

Programs: *ER* / *Grey's Anatomy* / *House, M.D.* / *Nip Tuck* / *Scrubs* / Other (please specify)

Options: Don't ever watch / Watch mostly by myself / Watch mostly with medical professional student friends / Watch mostly with friends who are not medical professional students

Q10: Do you discuss ethical issues raised in the medical programs with your friends? Yes / No

Q11: Do you think that television programs accurately depict ethical issues that arise in clinical practice? Please rate the accuracy (0 = least accurate, 5 = most accurate): 0 / 1 / 2 / 3 / 4 / 5

Q12: Which ethical issues to you remember from television medical dramas? Overall, do you feel that these issues were handled appropriately?

Issues: Rationing care / Medical mistakes / Infections diseases / Quality or value of life or personhood / Enhancement (e.g., cosmetic surgery, off-label growth hormone use) / Education for health care professionals / Professional misconduct / Truth disclosure / Informed consent / Confidentiality / Access to and equity in health care / Human experimentation / Artificial and transplanted organs or tissues / Death and dying

Remember: Yes / No

Handling: 0 = Poor / 1 = Sub-par / 2 = OK / 3 = Best

Q13: Which ideals of professionalism do you remember from viewing any medical programs on television? Overall do you feel they were depicted positively or negatively?

Ideals: Responsibility / excellence and scholarship / Altruism, honesty, and integrity / Caring and compassion / Leadership / Respect / Accountability

Remember: Yes / No

Positive / Negative: Don't know / Positive / Negative

Q14: Do friends or family members ever ask for your opinion on a bioethical issue they viewed on a medical program? Yes / No

Q15: Which character on *Grey's Anatomy* do you most aspire to be like in your professional career? Least? Don't know / Meredith Grey / Cristina Yang / Alex Karev / Izzie Stevens / George O'Malley / Derek Shepherd / Preston Burke / Addison Shepherd / None

Q16: Which character on *House, M.D.* do you most aspire to be like in your professional career? Least? Don't know / Dr. House / Dr. Cuddy / Dr. Foreman / Dr. Wilson / Dr. Cameron / Dr. Chase / None

Q17: Which character on *Nip / Tuck* do you most aspire to be like in your professional career? Least? Don't know / Sean McNamara / Christian Troy / Liz Cruz / Quentin Costa / None

Note: questions 15 through 17 were followed by a free-response field asking respondents to briefly explain their choices.

Q18: What previous exposure to the study of bioethics have you had? (Select all that apply)
None / Undergraduate course (non-nursing, non-medicine) / Required medicine/nursing course / other

Q19: Please rank the following choices from 1 to 10 in terms of their importance in informing you about bioethical issues (where 1 is most important and 10 is the least important): Clergy / Family / Friends / Popular magazines / Medical or nursing school / Newspapers / Religious values / Scholarly journals / TV medical dramas / TV news

Q20: Is there anything else you want to tell us about television medical dramas and bioethics?

Table 1

Characteristics of the Study Sample

	All Respondents	Continuing Respondents	Population	% of Population Beginning Survey	% of Population Completing Survey
Medical Students					
Female	126	87	228	55%	38%
Male	79	43	249	32%	17%
All*	207	131	477	43%	27%
Average Age [†]	24.58	24.47	26.11	-	-
Nursing Students					
Female	150	108	339	44%	32%
Male	17	9	33	52%	27%
All	167	117	372	45%	31%
Average Age ^{††}	27.02	26.35	27.87	-	-

* Gender data not reported by all respondents.

[†] All respondents to population, $p < 0.001$; all respondents to continuing respondents, $p = 0.672$.

^{††} All respondents to population, $p = 0.150$; all respondents to continuing respondents, $p = 0.427$.

Table 2
The Viewing Habits of Medical and Nursing Students of Television Medical Drama

	% Watch	Frequency Sample Size (Expected) *	% Watch ≥ Once/Week	Watch With Friends Sample Size (Expected) *	% Watch With Friends
Female Medical and Nursing Students					
<i>ER</i>	39%	73 (76)	12%	75 (76)	24%
<i>Grey's Anatomy</i>	81%	153 (157)	61%	157 (157)	64%
<i>House, M.D.</i>	69%	131 (134)	35%	135 (134)	60%
<i>Nip/Tuck</i>	20%	36 (39)	22%	40 (39)	50%
Male Medical and Nursing Students					
<i>ER</i>	38%	20 (20)	20%	20 (20)	35%
<i>Grey's Anatomy</i>	63%	31 (33)	35%	33 (33)	70%
<i>House, M.D.</i>	83%	38 (43)	37%	42 (43)	57%
<i>Nip/Tuck</i>	29%	13 (15)	15%	16 (15)	56%
Male and Female Medical Students					
<i>ER</i>	39%	51 (51)	14%	47 (51)	38%
<i>Grey's Anatomy</i>	73%	93 (95)	49%	94 (95)	69%
<i>House, M.D.</i>	76%	95 (100)	31%	98 (100)	59%
<i>Nip/Tuck</i>	19%	23 (25)	4%	26 (25)	54%
Male and Female Nursing Students					
<i>ER</i>	38%	42 (45)	14%	48 (45)	15%
<i>Grey's Anatomy</i>	80%	90 (94)	66%	95 (94)	62%
<i>House, M.D.</i>	65%	73 (76)	41%	78 (76)	59%
<i>Nip/Tuck</i>	25%	26 (29)	35%	30 (29)	50%

* Expected sample size is the number of respondents who reported watching that specific television show.

Table 3

Recall of Ethical Issues on Television Medical Drama

Ethical Issue	Yes	No	% Yes
Access to and equity in health care	151	84	64%
Artificial and transplanted organs/tissues	172	59	74%
Confidentiality	173	62	74%
Death and dying	228	9	96%
Education for health care professionals	138	94	59%
Enhancement	123	105	54%
Human experimentation	62	168	27%
Infectious diseases	192	38	83%
Informed consent	137	92	60%
Medical mistakes	203	33	86%
Professional misconduct	215	19	92%
Quality/Value of life/Personhood	177	51	78%
Rationing care	94	134	41%
Truth disclosure	143	89	62%

Table 4

Impressions of Ethical Issues Arising in Television Medical Dramas.

	MS1 & MS2 Sample Size	MS1 & MS2 % Adequate	MS3 & MS4 Sample Size	MS3 & MS4 % Adequate	Nursing Sample Size	Nursing % Adequate	P-values		
							MS1 & MS2 to MS3 & MS4	MS1 & MS2 to Nursing	MS3 & MS4 to Nursing
Access to and equity in health care	45	76%	39	67%	70	70%	0.368	0.516	0.719
Artificial and transplanted organs/tissues	50	66%	47	38%	77	47%	0.006	0.033	0.358
Confidentiality	47	62%	36	19%	91	25%	< 0.001	< 0.001	0.482
Death and dying	67	75%	52	77%	111	76%	0.772	0.873	0.865
Education for health care professionals	45	47%	37	32%	61	44%	0.190	0.803	0.246
Enhancement	29	55%	34	35%	60	50%	0.114	0.646	0.168
Human experimentation	18	56%	19	26%	31	16%	0.070	0.004	0.384
Infectious diseases	53	62%	47	40%	92	65%	0.029	0.719	0.005
Informed consent	41	51%	32	31%	68	46%	0.087	0.569	0.174
Medical mistakes	60	60%	47	40%	97	44%	0.044	0.056	0.660
Professional misconduct	59	32%	51	26%	104	24%	0.441	0.259	0.842
Quality/Value of life/Personhood	54	69%	38	66%	87	61%	0.787	0.363	0.603
Rationing care	20	60%	27	59%	52	48%	0.960	0.363	0.347
Truth disclosure	38	48%	40	60%	67	51%	0.263	0.741	0.352

MS1, first-year; MS2, second-year; MS3, third-year; MS4, fourth-year medical student

Table 5

Sources of Information on Bioethical Issues

Source	% Responding "Important"	Total Responding
Medical/Nursing school	91%	290
Family	81%	290
Scholarly journals	79%	285
Friends	70%	288
Religious values	56%	285
Newspapers	49%	288
Television news	28%	284
Clergy	27%	283
Television medical dramas	14%	307
Popular magazines	10%	283