
Teaching medical ethics

Talking about cases in bioethics: the effect of an intensive course on health care professionals

Janet I Malek, Gail Geller and Jeremy Sugarman *Rice University, Houston, Texas, Johns Hopkins University, Baltimore, Maryland and Duke University, Durham, North Carolina, USA, respectively*

Abstract

Educational efforts in bioethics are prevalent, but little is known about their efficacy. Although previous work indicates that courses in bioethics have a demonstrable effect on medical students, it has not examined their effect on health care professionals. In this report, we describe a study designed to investigate the effect of bioethics education on health care professionals. At the Intensive Bioethics Course, a six-day course held annually at Georgetown University, we administered a questionnaire requiring open-ended responses to vignettes both before and after the course. Following the course, respondents defended their responses more carefully and articulated their thoughts more clearly. In addition, after the course respondents seemed to have a more subtle understanding of the relevant issues in the cases and applied theory to these cases more frequently. These findings help to formulate an understanding of the effect of bioethics education on health care professionals.

(*Journal of Medical Ethics* 2000;26:131-136)

Keywords: Bioethics education; questionnaire; health care professionals

Educational opportunities in bioethics are now quite prevalent. These include a wide variety of courses, conferences, and seminars. The primary goals of these efforts arguably are to increase participants' awareness of, and to improve their moral reasoning about, bioethical issues.

The efficacy of educational efforts in bioethics in meeting these goals has received some critical attention. Published studies with undergraduate medical students report on the effect of specific courses or discussions,¹⁻⁷ as well as the typical four-year medical school curriculum,⁸⁻¹³ on the attitudes and behaviours of these students. House officers have also been included in a small number of studies¹⁴⁻¹⁶ which evaluated the efficacy of edu-

cational efforts in bioethics. However, this literature leaves unexamined both the population of practising health care professionals and the unique formats used in their education, such as conferences and intensive courses.

Determining how best to perform an evaluation of the efficacy of bioethics education can be quite challenging. Various instruments have been developed to assess ethical awareness,^{1,2} such as the Toronto Ethical Sensitivity Instrument^{8,9,14} which measures the number of ethical issues identified in vignettes. Other studies have evaluated changes in moral reasoning ability, using several instruments^{3-6,10} including Kohlberg's Moral Judgment Interview¹¹ and the Sociomoral Reasoning Measure.⁵⁻¹² Finally, chart review,¹⁵ written questionnaires,^{7,16} and the Objective Structured Clinical Examination^{13,17} have been used to try to assess respondents' ability to act in an ethical manner in a clinical setting. Each of these methods uses scales to convert responses into numerical values which are then compared. We could not find any published literature evaluating the effects of education in bioethics using a more thoroughgoing qualitative analysis. While quantitative techniques are an important dimension in evaluating the effect of ethics education, that evaluation might be enhanced if it were accompanied by qualitative analysis.

Our study was designed to provide some of the pieces missing from the published literature concerning the evaluation of bioethics education. Specifically, using qualitative techniques, we investigated the effects of a six-day intensive bioethics course on a group of health care professionals.

Methods

Institutional Review Board approval was obtained to conduct this study with participants in the Kennedy Institute of Ethics' Intensive Bioethics

Table 1 *Course topics*

Introduction to normative ethics
The principles of beneficence and nonmaleficence
The principle of autonomy
The principle of justice
Virtue-based ethics
BIOETHICSLINE training
A care-based approach to ethics
Death and dying
Informed consent
Bioethics and the law: issues in human reproduction
Human gene therapy

Course. The course included a series of lectures and small group discussions on bioethical principles and theoretical approaches as well as specific topics (table 1). At on-site registration, each participant was asked to complete a survey before the course's opening session. Another version of the survey instrument was distributed at the conclusion of the course.

The pre-test instrument consisted of items regarding demographic characteristics and professional experience, scales measuring tolerance for uncertainty and ambiguity, and two of four clinical vignettes (table 2). The post-test instrument included the same uncertainty scales in addition to the two remaining vignettes, and was linked to the pre-test by a subject number. A randomised pre-test/post-test crossover design was used with the four groups so that each participant received every vignette, but some participants received it before and some after the course. In this way, we were able to control for bias from prior exposure while maintaining our ability to compare pre-test and post-test results in the aggregate. Participants were asked to describe in an open-ended fashion the ethical issues raised by each case as well as to explain how they would resolve the case from the perspective of an ethics committee member.

Data from the professional and demographic surveys were analyzed using SPSS software. A coding sheet was developed to quantify information contained in the open-ended responses,

including the use of specific ethical principles and whether the use of the principle was implicit or explicit. This latter distinction was made based on whether the respondent named the principle in identifying issues relevant to the vignette or referred to the principle without using the term for it. For example, an explicit reference to autonomy from the lung tumour case: "If he's competent, tell the diagnosis to the patient based on respect for autonomy" can be contrasted with the implicit reference: "I believe this man has the right to know about his tumour and prognosis". Two coders independently reviewed a sample of the cases and then met to resolve any discrepancies in coding. Once the coding system needed no further modifications and was consistent among coders, all of the cases were coded and the data were entered into a computerised database.

A coding manual was designed to analyze further the open-ended discussions elicited by the vignettes. Codes were created to identify particular text in the responses indicating respondents' methods of reasoning and proposed resolutions. Characteristics such as designation of power, communication, third party interests, hypothetical reasoning, directive tone, compassion, justification of resolutions, and recognition of competing interests were included in this coding system (table 3). A sample of the responses was coded to establish consistency, after which all responses were coded by a single individual (JM) and entered into the NUD*IST qualitative analysis software program (Qualitative Solutions & Research Pty Ltd, Melbourne, Australia). The resulting data were analyzed to uncover changes occurring between the beginning and end of the course.

Results

RESPONDENT CHARACTERISTICS AND RANDOMISATION
 One hundred and nine of the 131 conference participants (83%) returned the pre-test questionnaires. Respondents were fairly evenly distributed

Table 2 *Vignettes*

*Brain Haemorrhage case:	A 58-year-old male has suffered an extremely large haemorrhage in the left side of his brain and requires life support and surgical intervention to survive. He has previously discussed with his family his wish never to be placed on life support. However, his wife wishes to have "everything" done for her husband.
*Deteriorating Health case:	You visit an 82-year-old female who has been previously healthy and independent. She has been deteriorating for five weeks, has lost weight, is mildly delirious, and has taken to her bed. You think she needs to come into hospital for further investigation, but she adamantly refuses.
Huntington's Test case:	A 38-year-old married man is at risk for Huntington's disease, a degenerative genetic disease of the nervous system that manifests itself around age 40. Given his family history, his three children and siblings are also at increased risk. Right now he has no symptoms, but requests genetic testing due to his increased risk. The test reveals that he has the Huntington's gene and will develop the disease. His insurance company requests his test results from the physician who arranged for the testing to be done.
*Lung Tumour case:	A hospitalised 45-year-old widower had tests that reveal an inoperable malignant lung tumour. He is likely to die within the next six months. He has a past history of depression and is currently on anti-depressant medication. His adult children have told his physician that he cannot handle "bad news" and have requested that under no circumstances should he be informed of his diagnosis.

*These vignettes were adapted from a previously validated instrument.^{8 9}

Table 3 Selected codes: definitions and examples

Code	Identifies parts of responses which include:
Communication	Mention of communication between parties; for example the provider, patient, family or other individuals. Suggestion to share information, clarify the situation or attempt to reconcile opposing viewpoints. "Approach [the patient's] wife concerning the degree of injury and therefore permanent deficits, prognosis, and quality of life issues as well as [concerning] her feelings, concerns, and relationship with her husband." (Brain haemorrhage case)
*Conflicting	The indication of a conflict existing between two or more principles, values, or interests in the analysis of the scenario. Recognition of interpersonal or intrapersonal conflicts. "In accordance with the principle of beneficence in a situation where grave harm could beset the patient ... the information might be withheld. However, this infringes upon the principle of veracity and patient autonomy." (Lung tumour case)
Directive	Use of a directive tone in stating a resolution. An authoritative, instructive statement that does not consider opposing viewpoints or other possible solutions. "Bring the patient into [the] hospital and evaluate her. Give her the best care available." (Deteriorating health case)
Hypothetical	Use of hypothetical reasoning. Presentation of conditional resolutions or identification of issues based upon supposition of various facts. "If there is significant evidence of incompetence, serious consideration must be given to ... beneficent intervention. If she appears competent, respect for her autonomy and choice should govern." (Deteriorating health case)
*Justification	Justification of a proposed resolution or defence of how a resolution was decided upon. Explanation of consideration of various issues in the vignette. "The patient has the right to choose any ... therapy offered ... or to refuse treatment. He cannot make those choices if he does not know what is wrong with him." (Lung tumour case)
Power	Identification of a locus of power. Indication of who has decision making authority; for example patient, family, physician, ethics committee, the law, or others. "Absent any law requiring disclosure of the test results to the insurance company, I would comply with the patient's wishes." (Huntington's test case)
*Ranking	An attempt to choose between conflicting principles, values or interests. Ordering of or assignment of value to conflicting aspects of the vignette. "Given the fiduciary [physician-patient] relationship ... the patient's interests supersede those of third parties." (Huntington's test case)

*Differences were found in these coding domains before and after the course.

across all of the four groups into which conference participants were divided, with 79% responding from group 1, 91% responding from group 2, 85% from group 3, and 79% from group 4. The majority of respondents (55%) were physicians or nurses, with clergy, lawyers, philosophers and others constituting the remainder. Nearly half (49%) of the respondents reported providing direct patient care. Forty-four per cent had prior training in bioethics and 43% had conducted an ethics consultation.

We were able to confirm the successful randomisation of the pre-test respondents among the four groups using demographic and professional survey information. No differences across the groups were found in professional distribution, percentage of professional time spent doing direct patient care, the discussion of ethical issues with patients, or prior experience conducting a formal ethics consultation. Participants' sex, age, and religious affiliation were also evenly distributed. Sixty-six of these 109 participants (61%) returned the post-test questionnaire, and likewise were found to be evenly distributed across the four groups. The characteristics of those returning the post-test instrument did not differ from those participating in the pre-test with the exception of an increased response rate ($p < 0.03$) from those who had conducted an ethics consultation.

RESPONSES

Clear differences in pre-test and post-test responses were discernible in three qualitative domains: *justification*, *ranking* of elements, and recognition of *conflicting* elements. Respondents justified their proposed resolutions more frequently after the course and did so in more depth and detail than before the course. Considering the Huntington's test case, representative pre-test responses included: "The MD should not give out the information based on the ethical rule of confidentiality," and "the insurance company accepts the risk of the patient population as a whole". In contrast, after the course a respondent wrote: "The ethical issue here is one of confidentiality. The duty of the physician is to the patient and not to the insurance company". Another defended not releasing this information by claiming that "justice [guarantees the] rights of persons with illness to health care insurance despite expenses to insurers". Although some of the same justifications for actions were cited before and after the course, responses to the vignettes after the course were more explicative and more frequently incorporated theoretical language.

Compared to justifications before the course that tended to rely upon the unique features of particular clinical vignettes, justifications following the course tended to invoke more

Table 4 *Explicit use of principles*

Case	Pre-test		Post-test		P-value
	#/n	%	#/n	%	
Brain haemorrhage	37/61	61%	39/44	89%	.001
Deteriorating health	42/70	60%	42/51	82%	.008
Huntington's test	18/36	50%	28/39	72%	.05
Lung tumour	46/67	69%	38/51	75%	.50
Total	143/234	61%	147/185	79%	.00005

#/n = The number of instances principles were used explicitly / the total number of instances principles were used. % = the corresponding percentage. P-values determined using the t-test.

generalisable constructs. For example, when presented with the lung tumour case before the course respondents offered: "The patient should know what is happening to his body so that he can make preparations to exit this life", and "the patient will realise in the near future that he is dying and may become angry if information is withheld from him". Following the course, however, the nature of justification shifted. For example, "[because of] patient autonomy [the] patient is presumed to be competent and have the capacity to make decisions unless proven otherwise;" and "he has a right to know".

After the course, participants also tended to rank, or weigh, issues and interests more frequently and clearly. In responding to the Huntington's test case before the course, a participant commented: "the physician's obligation to his patient outweighs his societal obligations". After the course, a respondent stated: "confidentiality is supported by the principle of respect for autonomy. Even if we consider this a prima facie principle, the need for the insurance company to obtain these results does not override . . . the physician's obligation to his patient".

Similarly, while participants identified many conflicting elements in analyzing the cases both before and after the course, they articulated these conflicts more precisely in post-test responses. Before the course, the "right to privacy v [the] right to know" was stated as an issue relevant to the Huntington's test case. Responses were more refined after the course, as illustrated by the explanation: "for the physician . . . to report information regarding [the] Huntington's gene to the insurance company without the patient's permission would violate his privacy and confidentiality and would be a conflict of the principles of beneficence and non-maleficence".

Furthermore, the conflicting elements identified by participants tended to be simple before the course, but involved greater complexity after the course. A pre-test response to the lung tumor case states that "the family members' concerns are outweighed by the patient's own rights" which contrasts with the post-test response: "if he's not

competent, withhold disclosure based on [the] principle of beneficence overriding [the] principle of autonomy". The brain haemorrhage vignette given before the course elicited statements identifying a "conflict between the patient's wish and the wife's wish," and the question of "whether to follow the desires of the individual or his closest proxy," while after the course a respondent stated that respecting the "self-determination and autonomy of the patient may run counter to the patient's wellbeing or best interest". Thus, more intricate and nuanced understandings of the vignettes are illustrated by the responses after the course.

Responses in most other domains differed very little from pre-test to post-test. Nevertheless, there was a trend within each vignette towards explicit use of ethical principles compared to implicit use (table 4). Before the course, 61% of the instances in which a participant identified a relevant principle were explicit for the brain haemorrhage case. After the course, 89% of the references to principles in the post-test responses were explicit. A similar trend from implicit use to explicit use was evident in the other three cases.

Experience conducting an ethics consultation may have affected the changes we observed before and after the course. Specifically, there was a trend towards those without prior ethics consultation experience being more likely to mention autonomy explicitly after than before the course (100% versus 67%; $p=.09$), whereas there was no difference among those who had conducted an ethics consultation. This pattern also held true for the principle of beneficence.

Discussion

The two greatest strengths of our study are also inherent weaknesses. Because the randomisation among the four groups was successful, the cross-over study design allows us to see an accurate picture of the effects of this intensive bioethics course on its participants as a *group*. However, we are limited to interpreting these effects in the aggregate because no participant was given the

same case twice. This prevents us from being able to examine any changes on an *individual* level.

The qualitative nature of our analysis is also an important strength because we are able to look at subtleties invisible to numeric data and thereby gain a more thorough understanding of the effects of this educational intervention. However, this type of qualitative analysis is necessarily subjective, requiring the differentiation between shades of grey rather than the reporting of more stark quantitative data. In addition, the process of analysis is a time-consuming endeavour, while describing these findings is itself a challenging task.

Adjustments

In retrospect, some adjustments might have been made to expand our findings. For example, the inclusion of additional details about the scenarios might have enabled respondents to analyze more thoroughly the issues involved. Developing a way to encourage longer, more discursive responses, perhaps through interviews, would enrich the results. Finally, a follow-up instrument could be designed to analyze long term effects of the course.

In interpreting our results, it is important to consider that these health care professionals are not unfamiliar with bioethical issues. Most had had experiences in clinical care or bioethics before taking the course, presumably making them familiar with some of the basic concepts in bioethics and therefore affecting what they learned from the course. In addition, a self-selection bias must be considered because an interest in bioethics most likely prompted the participants to register for the course. Similarly, a response bias may have affected our results in the post-test responses as a disproportionate number of participants who had conducted ethics consultations returned the surveys after the course. Finally, the course format and topics likely influenced our findings, making it reasonable to expect that a different course format and/or set of topics would yield other results.

Nevertheless, the three qualitative domains (*justification*, *ranking* and *conflicting*) in which we found noticeable changes following the course shed light on how respondents analyzed the vignettes and explained their resolutions. The trend towards more frequent, thorough, complex, and precise explanations of reasoning and defence of their analyses suggests that what these respondents took away from this intensive course in bioethics was an enhanced capacity to support better the resolutions they proposed. Similarly,

they seemed to derive an improved ability to articulate their thoughts on relevant issues.

The systematic review of ethical theories offered in the course may have provided a contextual framework through which participants learned to express themselves. Lectures and discussions probably familiarised participants with a language that they might not have known before attending the course, the language of contemporary bioethics. In addition, these professionals may have come to understand better the tensions and conflicts involved with the cases they face and therefore have been able to explain *why* the issues they recognise are important.

Because of the uniqueness of this study as an evaluation of an intensive course intended for a group of health care professionals, our data expand current understanding of bioethics education. The published literature reports that medical ethics courses increase undergraduate medical students' ethical sensitivity^{1 2 14} and moral reasoning ability^{3-6 10} as well as improve clinical competence and confidence surrounding ethical issues in house officers.^{15 16} Studies have also found significant increases in ethical sensitivity in undergraduate students resulting from lectures and discussion workshops.^{1 14} Together, these studies suggest that bioethics courses and workshops have a positive effect on the ability of medical students to identify issues, reason morally and act ethically. Perhaps *students* just beginning to be exposed to bioethical questions gain these abilities from courses in the discipline while experienced *professionals* instead gain the ability to defend more carefully their reasoning and to articulate more clearly the relevant issues.

While our methods seem too cumbersome to use as an evaluation tool for individual courses, our evaluation is important since it enhances our understanding of the effect of bioethics education on health care professionals. This more complete picture should help educators to improve subsequent educational efforts.

Acknowledgments

We are indebted to all the participants in the Intensive Bioethics Course who responded to our questionnaire(s). We are also grateful to the staff of the Kennedy Institute for helping to distribute the questionnaires, to Barbara Lovell, MA for typing the hand-written responses to the cases, to Misha Strauss (PhD candidate) and Ellen S Tambor, MA for coding the open-ended responses, to Theresa Doksum, MPH for her assistance in analyzing the demographic data, and to Robert M Veatch, PhD, for giving us permission to conduct this study at the Kennedy Institute.

Janet I Malek, BS, is a Graduate Student in the Department of Philosophy, Rice University, Houston, Texas, USA. Gail Geller, ScD, is Associate Professor at the Center for Genetics and Public Policy Studies and the Bioethics Institute, Johns Hopkins University, Baltimore, Maryland, USA. Jeremy Sugarman, MD, MPH, MA, is Director of the Center for the Study of Medical Ethics and Humanities and Associate Professor of Medicine and Philosophy, Duke University, Durham, North Carolina, USA. Correspondence: Dr Jeremy Sugarman, Box 3040, Duke University Medical Center, Durham, North Carolina 27710, United States of America.

References

- 1 Stevens NG, McCormick TR. What are students thinking when we present ethics cases?: an example focusing on confidentiality and substance abuse. *Journal of Medical Ethics* 1994;20:112-7.
 - 2 Shorr AF, Hayes RP, Finnerty JF. The effect of a class in medical ethics on first-year medical students. *Academic Medicine* 1994;12:998-1000.
 - 3 Siegler M, Rezler AG, Connell KJ. Using simulated case studies to evaluate a clinical ethics course for junior students. *Journal of Medical Education* 1982;57:380-5.
 - 4 Howe KR, Jones MS. Techniques for evaluating student performance in a preclinical medical ethics course. *Journal of Medical Education* 1984;59:350-2.
 - 5 Self DJ, Wolinsky FD, Baldwin DC Jr. The effect of teaching medical ethics on medical students' moral reasoning. *Academic Medicine* 1989;64:755-9.
 - 6 Self DJ, Baldwin DC Jr, Wolinsky FD. Evaluation of teaching medical ethics by an assessment of moral reasoning. *Medical Education* 1992;26:178-84.
 - 7 Myser C, Kerridge IH, Mitchell, KR. Ethical reasoning and decision-making in the clinical setting: assessing the process. *Medical Education* 1995;29:29-33.
 - 8 Hebert PC, Meslin EM, Dunn EV, Byrne N, Reid RS. Evaluating ethical sensitivity in medical students: using vignettes as an instrument. *Journal of Medical Ethics* 1990;16:141-5.
 - 9 Hebert PC, Meslin EM, Dunn EV. Measuring the ethical sensitivity of medical students: a study at the University of Toronto. *Journal of Medical Ethics* 1992;18:142-7.
 - 10 Baldwin C. Jr, Daugherty SR, Self DJ. Changes in moral reasoning during medical school. *Academic Medicine* 1991;9, **suppl**:1-3.
 - 11 Self DJ, Schrader DE, Baldwin DC Jr, Wolinsky FD. The moral development of medical students: a pilot study of the possible influence of medical education. *Medical Education* 1993;27:26-34.
 - 12 Self DJ, Davenport E. Measurement of moral development in medicine. *Cambridge Quarterly of Healthcare Ethics* 1996;5:269-77.
 - 13 Mitchell KR, Myser C, Kerridge IH. Assessing the clinical ethical competence of undergraduate medical students. *Journal of Medical Ethics* 1993;19:230-6.
 - 14 Green B, Miller PD, Routh CP. Teaching ethics in psychiatry: a one-day workshop for clinical students. *Journal of Medical Ethics* 1995;21:234-8.
 - 15 Sulmasy DP, Geller G, Faden RR, Levine DM. The quality of mercy: caring for patients with 'do not resuscitate' orders. *Journal of the American Medical Association* 1992;5:682-6.
 - 16 Sulmasy DP, Geller G, Levine DM, Faden RR. A randomized trial of ethics education for medical house officers. *Journal of Medical Ethics* 1993;19:157-63.
 - 17 Singer PA, Robb A, Cohen R, Norman G, Turnbull J. Performance-based assessment of clinical ethics using an objective structured clinical examination. *Academic Medicine* 1996;5:495-8.
-