The Status of Ethics Teaching and Learning in U.S. Dental Schools

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Abstract: The purpose of this study was to gather and analyze information about the status of ethics teaching and learning in U.S. dental schools and to recommend a curriculum development and research agenda for professional ethics in dental education. A survey to collect this information was developed by the authors and administered by the American Society for Dental Ethics. The results suggest that dental schools have adopted many of the recommendations for curricular content and learning strategies proposed in the 1989 American Association of Dental Schools (now American Dental Education Association) Curriculum Guidelines on Ethics and Professionalism in Dentistry. The survey was sent to the individual who directs the ethics curriculum at the fifty-six U.S. dental schools that had a full complement of enrolled predoctoral classes as of January 2008. All fifty-six schools responded to the survey. The data suggest that, in general, little time is devoted to ethics instruction in the formal curriculum. The mean number of contact hours of ethics instruction is 26.5 hours, which represents about 0.5 percent of the mean clock hours of instruction for dental education programs reported in the most recent American Dental Association survey of dental education. While the amount of time devoted to ethics instruction appears not to have changed much over the past thirty years, what has changed are what qualifies as ethics instruction, the pedagogies used, and the development and availability of norm-referenced learning outcomes assessments, which are currently used by a number of schools. We found that dental schools address a substantial list of topics in their ethics instruction and that there is general agreement as to the appropriateness of the topics and the ethics competencies that need to be developed and assessed. This study also identified the respondents' perceptions of unmet needs in ethics education. Four general themes emerged: the need for ethics to be more fully integrated across the curriculum, including carryover into the clinical years; the need to assess and ensure competence; the need for faculty development; and the need for more attention to method of instruction. Recommendations based on the study findings are offered for a curriculum development and research agenda for professional ethics in dental education.

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Nearly twenty-five years have passed since the Board of Regents of the American College of Dentists (ACD) resolved to recommend to the American Dental Association (ADA)'s Council on Dental Education (CDE) that it consider establishing standards for the teaching of professional ethics in dental schools.[1] Subsequently, accreditation standards for ethics were developed by the Commission on Dental Accreditation (CODA), and in 1989, Curriculum Guidelines on Ethics and Professionalism in Dentistry were developed by a tripartite committee consisting of representatives from the CDE, the ACD, and the American Association of Dental Schools (AADS; now American Dental Education Association, ADEA).[1] The committee included ethicists, psychologists, and practitioners and was charged to identify the rationale, content, sequence, and methodology for a model curriculum in dental ethics and professionalism.

Following general advice on the goals for ethics teaching first articulated by Bok[2] and promoted by early work of the Hastings Center[3] and incorporating theoretical perspectives from moral psychology,[4] the committee articulated broad content areas for instruction in ethics and professionalism. Grounded in Rest's Four Component Model of Morality (FCM),[4] which defines moral sensitivity, moral reasoning, moral motivation, and moral implementation as necessary conditions for moral behavior, the committee articulated four major educational outcomes: 1) recogni-

tion and analysis of ethical problems; 2) reasoning, argument, and judgment about course of action; 3) commitment to ethical principles of the profession; and 4) implementation of plans of action. Specific learning objectives were stated for each. The committee recommended that ethics and professionalism instruction be included each year of the educational program with early focus on ethical issues of the profession giving attention to commitment, professionalism, and reasoning and judgment abilities. Vertical integration was recommended, guided by clinical faculty members who could routinely involve students in ethical reflection during clinical evaluation of patients.

A 1980 survey conducted by Odom[5] found that 76 percent of responding dental schools had some kind of "formal" ethics instruction in the curriculum. In that study, formal instruction was defined as classroom instruction structured to focus on application of ethical principles, rather than informal instruction that may occur in the context of clinical encounters. By 1986, 79 percent of responding schools had at least one formal course in ethics in their educational program,[6] and by 1998, 91 percent of responding schools had at least one formal course.[7] Between 1980 and 1998, ethics instruction at the responding schools increased mainly in the first and third years of the curriculum and decreased somewhat in the fourth year.[5-7] However, the total number of credit hours of ethics instruction was very low relative to the entire dental curriculum, ranging from a total of one to three credit hours.

Between 1982 and the present, ethics educators have reported on individual programs,[8-12] sometimes describing instructional strategies[13,14] and occasionally reporting on a program's educational outcomes;[15-17] analyzed student reactions, including dental and dental hygiene students' attitudes following a community-based service-learning experience,[18] first-year dental students' perceived learning following an introductory ethics course,[19] and fourth-year students' self-reports of ethical dilemmas faced in community-based extramural programs;[20] and described faculty training to enhance clinical evaluation of students' professionalism,[21] as well as occasional efforts to synthesize this literature.[22-24] The earliest review[22] concluded that dental educators have followed the 1989 curriculum guidelines by including formal ethics instruction and by adopting teaching methods that are interactive and promote student introspection and group problem-solving.

Masella's review[23] focused on "professionalism" as the outcome of dental education and suggested that dental schools pay attention to, carefully analyze, and build consensus around dentistry's moral convictions lest they send mixed messages to dental students about professionalism. He traced the use of the term "professionalism," now popular in the medical education literature,[25] and identified altruism as the core principle of professionalism. Masella's review cites educational research revealing a significant positive relationship between students' moral reasoning ability—the second outcome of the 1989 curriculum guidelines—and their clinical performance, as well as studies demonstrating that students' moral reasoning ability can be improved using specific educational interventions. Most importantly perhaps, he cites studies suggesting that in the absence of specific educational interventions, the moral development of professional school students either fails to progress or erodes as they progress through their program.

The most recent review on the subject[24] describes the status of ethics education across professions, contrasting efforts to assess educational/learning outcomes related to the four capacities (Rest's FCM: sensitivity, reasoning, motivation, and implementation) with the recent emphasis on measurement of professionalism using observable behaviors as the focus for ethics education.[25] The focus on capacities identifies and measures competence in sensitivity, reasoning, motivation, and implementation (the learning outcomes specified in the 1989 curriculum guidelines[1]) as necessary conditions for professional behavior, whereas the focus on professionalism addresses the outward manifestations of behavior. In medicine, for example, the National Board of Medical Examiners has implemented an Assessment of Professional Behaviors program designed to provide residents, fellows, and faculty members with feedback about their professional behaviors using a twenty-three-item rating scale that measures behavioral indicators of professionalism.[26] Bebeau and Monson[24] argue for a vision for professional ethics education that draws upon the best of both approaches, citing evidence from a study of deficiencies in capacities exhibited by professionals disciplined by a licensing board[16,17] to empirically support such a vision.

These recent advances in understanding the importance of developmental capacities that give rise to professionalism suggest that a review of the current

status of ethics instruction and assessment of learning outcomes at U.S. dental schools is both timely and important. Whereas shifts in instructional strategies used to teach ethics and in the inclusion of formal instruction have occurred over the last three decades, no study to date has comprehensively documented the content, timing, and placement of ethics instruction in the dental curriculum, the credit hours of courses offered, whether courses are graded or pass/fail, the extent to which ethics instruction is provided in stand-alone courses or integrated into others, the topical content of courses, pedagogical methods used, methods used to assess student learning including competence assessment, environmental dimensions that may support formal instruction and/or an ethical climate within schools, and perceptions of unmet needs in ethics instruction. The purpose of this study was to gather and analyze this information and to recommend a curriculum development and research agenda for professional ethics in dental education.

Methods

An eight-section survey was designed to collect data about the status of ethics instruction in U.S. dental schools. SurveyMonkey was selected as the delivery system for the survey. Section 1 asked whether and when stand-alone ethics courses were offered. Respondents were asked to indicate the academic year and term the course was offered, the number of clock hours and credit hours for each course, and the grading policy (graded or pass-fail). Next, respondents were asked whether ethics instruction was integrated into other courses and, if so, to estimate the clock hours devoted to ethics, the year and term the course was offered, and the grading policy. Lastly, respondents were asked to provide the name of each course in which ethics instruction was integrated and the year it appeared in the curriculum. To enable follow-up for more specific information, Section 1 also asked for the name of the school for which data were provided and the name of the person completing the questionnaire.

Section 2 listed specific topics organized under six domains: nature of professions, professional codes of ethics, professional relationships, informed consent and refusal, challenges to professionalism, and ethical decision making, particularly in relation to major ethical issues currently facing dentists and the dental profession. The specific topics under each domain were gleaned from these sources: current dental ethics texts, our collective experience in teaching ethics, and the 1989 curriculum guidelines.[1] After respondents indicated the presence or absence of each topic in their curriculum, they rated whether each was addressed in a "major" or "minor" way, based upon the following definition. A topic addressed in a "major" way is specifically addressed in a syllabus and/or by a specific learning outcome documented by the school. A topic addressed in a "minor" way is discussed but does not appear in a syllabus or as a specific learning outcome for the school. Respondents were instructed to select the "no" option if a topic was not addressed in their curriculum.

Section 3 asked respondents to indicate the presence or absence of twelve teaching and learning methods in their schools' ethics instruction: lectures, small-group sessions, case-based learning, problem-based learning, reflective writing exercises, journal writing, ethical rounds, standardized patient instructors, formal faculty mentoring and role-modeling, formal mentoring by non-faculty dentists, study of moral exemplars, and computer- or web-based instruction. Section 4 asked respondents to indicate which of five assessment methods were used: case presentations, graded essays, role-plays, multiple-choice tests on the ADA Principles of Ethics and Code of Professional Conduct, and/or multiple-choice tests on the principles of biomedical ethics. This section also asked respondents to indicate whether one or more of five outcome measures were used to assess the outcome of ethics instruction: the Defining Issues Test,[24] Professional Role Orientation Inventory,[24] Dental Ethical Reasoning and Judgment Test,[24] professionalism measures such as checklists used in clinic, and objective structured clinical examination (OSCE). Section 5 asked if one or more of three dental ethics textbooks were used and requested the titles of other texts or instructional materials used. Section 6 asked about the presence of elements that might affect the climate for ethics at the school including whether the school had an honor system, a white coat ceremony, and/or awards that recognize professionalism. Each of these sections included a place to write in an alternative not on the list. Finally, Section 7 asked whether the respondent would be willing to share ethics course syllabi and/or teaching materials to support a national study of ethics instruction in dental education, and Section 8 asked respondents to describe the most important unmet instructional need in ethics at their school.

To pretest the survey and ensure content validity, it was sent to members of the Executive Board of the American Society for Dental Ethics (ASDE) for review. After review and revision, the survey and procedures were submitted to the Health Sciences Institutional Review Board (IRB) at the University of Michigan for review. This board determined that the study did not include human subjects and therefore was not regulated by the IRB.

The survey was sent through the ASDE to the individual who directs ethics instruction at the fifty-six U.S. dental schools that had a full complement of classes enrolled in their predoctoral dental program as of January 2008. In schools where the person responsible for teaching ethics could not be identified through ASDE membership, we contacted an administrator familiar with the school's ethics instruction, asking that the survey be completed in cooperation with the school's ethics instructor. Delivery of the survey was monitored by a staff assistant at the University of Michigan School of Dentistry. The survey was first e-mailed in January 2008, with an e-mail reminder sent in March 2008 to those who had not responded. After that, members of the ASDE Executive Board contacted nonresponders individually by telephone until all responses were received. Data analysis was conducted by the first two authors (M.S.L. and M.J.B.) and presented to the ASDE Executive Board for discussion in August 2008. The board used the survey results to plan ASDE-sponsored faculty development workshops conducted at the 2009, 2010, and 2011 ADEA Annual Session & Exhibition.

Results

All fifty-six dental schools operating in the United States at the time responded to the survey. In general, it was completed and submitted by one individual at each school; these individuals collaborated to varying extents with their colleagues in completing it. Individuals in dean-level positions (three assistant deans, nineteen associate deans, and two deans) responded on behalf of twenty-four schools, and faculty members responded on behalf of thirty-two schools. Five schools unintentionally submitted two surveys, one completed by an individual in a dean-level position and the other by a faculty member who taught ethics. We examined these "duplicate" surveys to ascertain the level of agreement in responses. For three schools, there was excellent agreement between the dean-level and faculty respondents' responses. For two schools, there was less agreement. In one case, the dean-level respondent indicated broader ethics instruction (more courses and more clock hours of instruction) than did the faculty respondent. In the other case, the reverse was true: the faculty member reported broader ethics instruction (more courses and more clock hours of instruction) than did the dean-level respondent. The two respondents at the five schools with "duplicate" surveys were contacted by one of the authors (M.S.L.), sent copies of each respondent's completed survey, and asked to consult with each other and return one survey on behalf of their school. Each school did so, and the resubmitted version was used for these schools in our analysis.

Although the survey required 109 separate responses and some questions were difficult to answer, respondents seldom skipped a question. Response rates for a particular question never fell below 91 percent. Eight questions asked the respondent to write in a response, and eight presented lists of alternatives for the respondent to check, followed by space to augment a response by adding to the list. These responses were content-analyzed, and response rates are reported where the results supplemented findings. Forty-six respondents (82 percent) said they would be willing to provide course syllabi and/or teaching materials to support further analysis for a national study, five said they would not, and five skipped the question. Finally, forty-four (78.6 percent) of the fifty-six schools described "a most important unmet curriculum need at your schools." The ASDE board has used a content analysis of these perceived needs to guide the development of programs and workshops it provides.

Amount and Placement of Ethics Instruction

The respondents from forty-five of fifty-six U.S. dental schools (80 percent) reported that they provide at least one stand-alone ethics course as part of the D.D.S./D.M.D. program at some time during their program. Twenty-seven schools present a stand-alone course during the first year (mean contact hours 17.2 [range three to forty-eight]); twelve during the second year (mean contact hours 14.4 [range three to forty]); nineteen during the third year (mean contact hours 13.8 [range three to thirty]; and twenty during the fourth year (mean contact hours 13.3 [range three

to forty]). Because the definition "contact hour per credit" varies across institutions, we are reporting "clock hours" of instruction across institutions.

Twenty-one schools offer one stand-alone course during the D.D.S./D.M.D. program, thirteen offer two stand-alone courses, five offer three stand-alone courses, and five offer four stand-alone courses. Respondents from a few schools reported that they provide more than one stand-alone course in a given academic year. The average number of clock hours devoted to a stand-alone ethics course at the forty-five schools with such courses is 26.5. For most schools, this would represent one two-credit-hour course (at ten to fifteen contact hours/credit) offered at some time during the predoctoral program.

Slightly more than half (53.5 percent) of the first-year stand-alone courses were said to be graded courses, while 40 percent of second-year, 73.7 percent of third-year, and 61 percent of fourth-year stand-alone courses were said to be offered for a grade rather than as pass/fail (Table 1). The ratio of graded vs. pass/fail courses in which ethics instruction is included follow similar trends for the stand-alone ethics courses, except in the second year when courses with ethics instruction are offered for a grade about 60 percent of the time in contrast to 40 percent for stand-alone courses (Table 2).

When ethics instruction is included in other courses, it is most often for a total duration of less than five clock hours (Table 3). In five schools in which more than twenty clock hours of ethics instruction are integrated into coursework, it appears to be in the third and fourth years.

Curriculum Topics

The data presented in Tables 4–10 show the extent to which the dental schools address particular instructional topics grouped under these headings: nature of professions, professional codes of ethics, professional relationships, informed consent/informed refusal, challenges to professionalism, ethical decision making, and reflection on practice. Almost all schools' respondents claimed to address each topic in at least a minor way. Whereas all topics

Table 1. Number of U.S. dental schools offering stand-alone ethics courses by year of study and whether courses are graded or pass/fail, 2008

	Graded	Pass/Fail	Total	No Response
Year 1	15	13	28	3
Year 2	6	9	15	0
Year 3	14	5	19	4
Year 4	11	7	18	3

Table 2. Number of U.S. dental schools offering ethics instruction that is integrated with other courses by year of study and term and whether graded or pass/fail, 2008

	Fall	Winter	Spring/Summer	Other	Total	Graded	Pass/Fail	No Response
Year 1	31	6	14	0	51	21	26	4
Year 2	16	4	12	0	32	17	11	4
Year 3	12	7	17	2	38	23	10	5
Year 4	13	7	14	4	38	17	18	3

Table 3. Number of clock hours in U.S. dental curricula devoted to ethics instruction when integrated into other courses reported by schools and by year of study, 2008

	<5	5-10	11-20	21-30	31-40	41-50	>50	Total
Year 1	26	16	9	0	0	0	0	51
Year 2	15	11	6	0	0	0	0	32
Year 3	23	11	4	1	0	0	0	39
Year 4	20	7	6	2	0	0	2	37

are addressed in a major or minor way by at least 60 percent of the schools, some topics are not included in the ethics instruction of a sizeable proportion of the schools. For example, 41 percent said they do not address the American Student Dental Association (ASDA) Code of Ethics,[27] 34 percent do not address the four models of the dentist-patient relationship (described by Ozar and Sokol[28]) and assessed by the Professional Role Orientation Inventory developed by Bebeau et al.,[29] and 38 percent do not ask students to conduct a learning needs assessment and develop a personal learning plan.

In addition to responding in the affirmative to almost all instructional topics, eight respondents used

Table 4. Number of U.S. dental schools reporting whether particular topics regarding the nature of the profession are presented in a major or minor way, 2008

	Yes, Major	Yes, Minor	No	Total Responses	No Response
Self-regulation: individual dentist	35	20	1	56	0
Self-regulation: the profession	41	15	0	56	0
The social contract: relationship of the dentist to society	40	15	0	55	1
The social contract: relationship of the profession to society	39	15	0	54	2
The priority of the needs of those served	37	18	1	56	0
Personal values	29	22	4	55	1
Obligations and central values of the profession	48	6	1	55	1
Virtues: integrity	39	14	2	55	1
Virtues: trust	37	16	2	55	1
Virtues: altruism	26	26	3	55	1
Virtues: compassion	33	20	2	55	1
Virtues: justice	39	14	2	55	1
Virtues: moral courage	22	26	7	55	1
Virtues: moral insight	22	24	8	54	2

Table 5. Number of U.S. dental schools reporting whether particular topics regarding professional codes of ethics are presented in a major or minor way, 2008

	Yes, Major	Yes, Minor	No	Total Responses	No Response
History of codes and oaths	22	21	11	54	2
Other professional codes	12	29	13	54	2
ADA Principles of Ethics and Code of Professional Conduct	50	6	0	56	0
ASDA Code of Conduct	15	17	22	54	2
ACD Handbook	22	21	9	52	4

Table 6. Number of U.S. dental schools reporting whether particular topics regarding professional relationships are presented in a major or minor way, 2008

	Yes, Major	Yes, Minor	No	Total Responses	No Response
Interaction with other professionals on ethical considerations: specialists, allied, medical, etc.	40	16	0	56	0
Difficult conversations with peers	30	23	3	56	0
Dentist-patient relationship: ethical considerations	47	9	0	56	0
Four models: 1. Guild model	21	14	17	52	4
2. Agent model	20	14	19	53	3
3. Commercial model	21	14	17	52	2
4. Interactive model	21	14	18	53	3
Interaction between ethics and law in professional relationships	40	15	1	56	0

Table 7. Number of U.S. dental schools reporting whether particular topics regarding informed consent/informed refusal are presented in a major or minor way, 2008

	Yes, Major	Yes, Minor	No	Total Responses	No Response
Compromised patient capacity	40	16	0	56	0
Language and cultural barriers	39	16	0	55	1
Children	41	14	1	56	0
Confidentiality	50	6	0	56	0

Table 8. Number of U.S. dental schools reporting whether particular topics regarding challenges to professionalism are presented in a major or minor way, 2008

	Yes, Major	Yes, Minor	No	Total Responses	No Response
In dental school	38	17	0	55	1
In practice	42	14	0	56	0
Unethical behavior in dental school	40	16	0	56	0
Unethical behavior in practice	41	13	0	54	2

Table 9. Number of U.S. dental schools reporting whether particular topics regarding ethical decision making are presented in a major or minor way, 2008

	Yes, Major	Yes, Minor	No	Total Responses	No Response
Models for resolving ethical dilemmas	39	13	4	56	0
Practice using models for resolving ethical dilemmas	37	13	6	56	0
Major ethical issues for the profession: access to care	41	15	0	56	0
Major ethical issues for the profession: managed or universal care	30	21	5	56	0
Major ethical issues for the profession: delegation and supervision	26	28	2	56	0
Major ethical issues for the profession: standards or quality of care	38	17	1	56	0
Major ethical issues for the profession: incompetent, dishonest, or impaired practitioners	39	16	0	55	1
Major ethical issues for the profession: child abuse or neglect	42	12	2	56	0
Major ethical issues for the profession: adult or elder abuse	32	19	5	56	0
Major ethical issues for the profession: business practices	34	21	1	56	0
Major ethical issues for the profession: cultural competence or sensitivity	36	20	0	56	0
Major ethical issues for the profession: advertising	26	24	6	56	0
Major ethical issues for the profession: commercialism	28	24	4	56	0
Major ethical issues for the profession: scope of dental practice	30	22	3	55	1
Major ethical issues for the profession: HIV/AIDS	29	23	3	55	1

Table 10. Number of U.S. dental schools reporting whether particular topics regarding reflection on practice are presented in a major or minor way, 2008

	Yes, Major	Yes, Minor	No	Total Responses	No Response
Self-assessment	33	17	5	55	1
Peer-assessment	24	23	8	55	1
Learning needs assessment and personal learning plan	12	22	21	55	1

the space provided to write in additional ethical topics taught at their school. These were marketplace ethics vs. ethics of health care, moral distress, autonomy, academic integrity issues, sexual harassment/boundary issues, standard of care, malpractice, confidentiality, breaking bad news, mistakes and truth-telling, cultural self-assessments, reflection on ethical conflicts while in school, ethical issues in recordkeeping and documentation, ethical issues in treatment planning, and ethics and state law.

Teaching and Assessment Methods

Lectures, small-group sessions, and case-based formats are the most prominent teaching and learning methods and are used by almost all schools (Table 11). Further, about 80 percent of schools reported using reflective writing exercises. About half said they use problem-based learning or computer-based or web-based instruction. Mentoring by faculty or non-faculty dentists (e.g., an ACD Fellow), interaction with standardized patient instructors, and the study of moral exemplars were also frequently mentioned instructional strategies.

Two-thirds of the respondents said they use "challenging to grade" ethics case presentations and essays to assess learning of material presented in courses (Table 12), and nearly half the schools also grade role-plays. Similarly, two-thirds of schools use multiple-choice tests on the ADA Principles of Ethics and Code of Professional Conduct,[30] and about half use multiple-choice tests on principles of biomedical ethics. Interestingly, in addition to checking the response categories provided, respondents listed various other classroom assessment strategies: multiple-choice tests on other ethics topics, including expected professional behaviors, the doctor-patient relationship, central values of the profession, the ACD handbook,[31] and the appropriate state dental practice act; a taped interview with a simulated patient; an OSCE with or without a standardized patient; short-answer questions on the state practice act and ethical cases; graded case analyses; a case-based presentation with peer and faculty questioning; article reviews; and movie reviews.

With respect to the use of particular outcome measures for assessing ethical competence or professionalism (Table 13), 65 percent of the schools reported using either in-class essays on professionalism or case analyses to assess ethical competence. Checklists used in clinic to record professional-

Table 11. Number of U.S. dental schools reporting the use of particular teaching and learning methods/processes in ethics instruction, 2008

	Yes	No	Total Responses	No Response
Lectures	53	1	54	2
Small-group sessions/learning	50	5	55	1
Case-based learning	54	1	55	1
Problem-based learning	28	26	54	2
Reflective writing exercises	44	11	55	1
Journal writing	6	48	54	2
Ethical "rounds"	2	52	54	2
Standardized patient instructors	12	41	53	3
Formal faculty mentoring and role modeling	30	25	55	1
Formal mentoring by non-faculty dentists, e.g., ACD Fellows	17	38	55	1
Study of moral exemplars	13	41	54	2
Computer-based or web-based instruction	26	28	54	2

Table 12. Number of U.S. dental schools reporting the use of particular student assessment techniques, 2008

	Yes	No	Total Responses	No Response
Ethics case presentations	34	19	53	3
Essays that are graded	38	14	52	4
Role-plays	25	28	53	3
Multiple-choice tests on ADA code of ethics	39	15	54	2
Multiple-choice tests on principles of biomedical ethics	26	28	54	2

ism are used by 60 percent of the schools. Ethical competence tests including the Defining Issues Test (DIT),[15,16,32-34] the Professional Role Orientation Inventory (PROI),[16,29] and the Dental Ethical Reasoning and Judgment Test (DERJT)[35,36] are used by 27.8 percent, 18.5 percent, and 24.1 percent of the responding schools, respectively; and 34.5 percent of the schools reported using an OSCE to assess ethical competence. Other methods mentioned by respondents include PowerPoint case presentation and discussion followed by faculty and peer critique and assessment; standardized patient encounters; course exams; and feedback from instructors in the small-group setting. One school's respondent commented that it does not use any standardized outcome measures to assess ethical competence.

Regarding the use of a required or supplemental textbook, about 65 percent of the respondents reported using *Dental Ethics at Chairside,*[28] 53 percent reported using *Ethical Questions in Dentistry,*[37] and 22 percent reported using *Dentists Who Care: Inspiring Stories of Professional Commitment*[38] (Table 14). Other learning materials mentioned were *The Dentist's Legal Advisor,*[39] *Principles of Biomedical Ethics,*[40] the ADA Principles of Ethics and Code of Professional Conduct,[30] the ACD ethics handbook,[31] the FDI Dental Ethics Manual,[41] *Dentistry, Dental Practice, and the Community,*[42] *Getting to Yes: Negotiating Agreement Without Giving In,*[43] *Law and Risk Management in Dental Practice,*[44] *The Rights of Patients: The Basic ACLU Guide to Patients' Rights,*[45] course packs with articles from the primary literature, and course materials written by the instructors.

Environmental Support

The presence of elements within the institution that have the potential to support the efforts of ethics educators was addressed by a series of questions. Respondents indicated the presence of three common elements. At least forty-four (78.5 percent) schools have implemented an honor code and/or honor system, and forty-two of those forty-four indicated that students participate in adjudication of the honor system. Eleven schools did not have an honor code, and one school did not respond to the question.

With respect to a white coat ceremony, fifty-three schools (94.6 percent) indicated having such a ceremony, two said they do not, and one did not respond. When asked when the ceremony is held, twenty-eight respondents said it is at the beginning of (most often after orientation) or at some time during the first year. Some schools reported that the ceremony occurs very early in the program—sometimes even before orientation. Two schools hold their ceremony after the first-year ethics course and four at the beginning of the second semester of the first year. Two schools conduct the ceremony at the end of the first year; five at the end of the second year,

Table 13. Number of U.S. dental schools reporting the use of particular outcome measures for assessing competence, 2008

	Yes	No	Total Responses	No Response
Ethical competence: Defining Issues Test	15	39	54	2
Ethical competence: Professional Role Orientation Inventory	10	44	54	2
Ethical competence: Dental Ethical Reasoning and Judgment Test	13	41	54	2
Ethical competence: in-class essays on professionalism or case analysis	36	19	55	1
Professionalism measures (e.g., checklists used in clinic to record professionalism)	33	22	55	1
Objective structured clinical exams (that include ethics issues)	19	36	55	1

Table 14. Number of U.S. dental schools reporting the use of particular dental ethics texts as required or supplemental, 2008

	Yes, Required	Yes, Supplemental	No	Total Responses
Ozar and Sokol, *Dental Ethics at Chairside*	15	20	19	54
Rule and Veatch, *Ethical Questions in Dentistry*	9	19	24	52
Rule and Bebeau, *Dentists Who Care: Inspiring Stories of Professional Commitment*	2	9	39	50
Other (please specify)				14

four before students enter clinic, and two in fall of the junior year, presumably before students enter clinic. Three schools indicated that they have two ceremonies: one at the beginning of the first year and a second in either year three or four.

In addition to white coat ceremonies in which students affirm their commitment to professional ideals, twenty-seven (48.2 percent) of the schools said they recognize professionalism or academic integrity with internal or external awards. When asked to explain the award, twenty-one schools gave specific responses. Nine respondents said that the ACD is involved—either in selecting a recipient or recipients for an award (e.g., judging student essays) or naming winners of an ACD award based on leadership, ethics, or professionalism. Eleven of the respondents indicated that multiple awards are given. In some cases, the local dental society was said to be involved in giving the award, or the award was a named honor for leadership, practice management, clinical achievement, or ethics and professionalism.

Perception of Unmet Needs

Forty-four (78.6 percent) of the fifty-six schools responded to the request to indicate their most important unmet instructional need in ethics. Four major themes emerged from the open-ended responses. Some responses touched on more than one issue, in which case the response was classified more than once.

Theme 1. Ethics needs to be more fully integrated across the curriculum, including carryover into the clinical years, clinical seminars, ethics grand rounds, and/or other formal courses. Twenty-eight schools (63.6 percent) identified this unmet need. Three also mentioned that more dedicated time for ethics instruction was needed.

Theme 2. The need to assess and ensure ethical competence. Respondents commented both on the need to assess and ensure competence in professional behavior (professionalism and the behavioral manifestation of ethical competence) and ethical competence (moral sensitivity, moral reasoning and judgment, role concept, and moral implementation) as described in the 1989 curriculum guidelines.[1] Respondents commented on the need to assess learning outcomes for both individual courses (nine schools, 20.5 percent) and for the ethics instruction as a whole (five schools, 11.5 percent).

Theme 3. The need for faculty development. Six schools (13.6 percent) identified the need for faculty development to ensure integration of ethics across the curriculum and attention to role modeling. Four schools (9.1 percent) identified the need to hire/develop faculty to teach ethics.

Theme 4. The need for more attention to method of instruction. Three schools (6.8 percent) identified the need for small-group, case-based methods. Individual schools identified the following as needed instructional methods: role-playing, cases for integration across the curriculum, more active learning, and self-assessment/reflective practice.

Discussion

The data from this study support findings from earlier studies suggesting that, in the broad scheme of things, little curriculum time is devoted to ethics instruction in U.S. dental schools. Only forty-five (80 percent) of the fifty-six schools provide a stand-alone ethics course at some time in the curriculum. The average number of clock hours devoted to such courses is 26.5, which would amount to about a two-credit course. Although fifty-one of fifty-six schools state that they integrate ethics content into other courses, most often the additional ethics content amounted to less than five clock hours. While this finding may represent a slight increase over the past decade (Odom[7] reported that 65 percent of schools responding offered a one-credit course, 19 percent a two-credit course, and 8 percent a three-hour course), it also indicates that instruction in ethics still represents a very small proportion of dental schools' formal curriculum: just over 0.5 percent of the mean curriculum clock hours reported for dental education programs in the most recent ADA clock hour report for predoctoral dental education programs.[46]

Figure 1 summarizes the percentage of schools offering stand-alone ethics courses by academic year for the three surveys reported in the dental ethics literature[5-7] and the current study. During the first year, 48 percent (twenty-seven schools of fifty-five) in 2008 compared with 61 percent (twenty-eight of forty-six) in 1998 and 45 percent in 1980 said they present a stand-alone course at that level. Whereas the proportion of schools offering stand-alone first-year courses increased to the point at which twenty-eight offered such courses in 1998 and twenty-seven in 2008, the number of contact hours has changed significantly. In 1980,[5] the range of contact hours for a first-year course varied from one to twelve hours. In 2008, the mean number of contact hours was 17.2 (range of

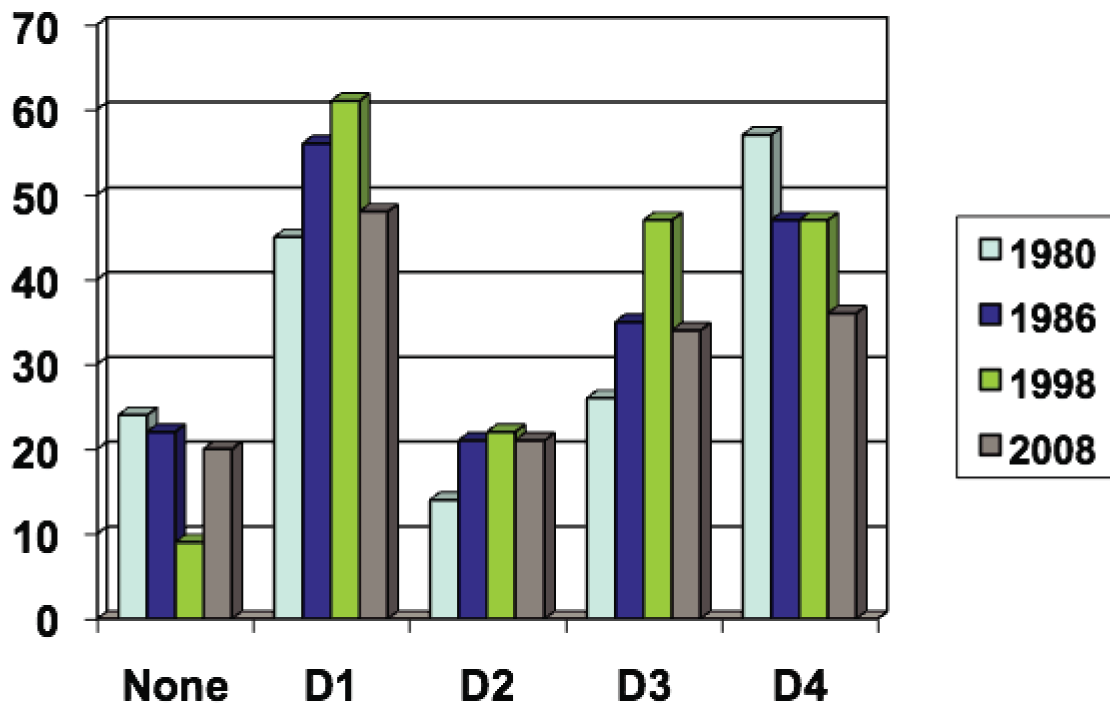

Figure 1. Percentage of U.S. dental schools offering stand-alone ethics courses by academic year: results of surveys in 1980, 1986, 1998, and 2008

three to forty-eight). In the second year, stand-alone courses tend not to be offered. In 1980, only six schools (14 percent) reported a stand-alone course. The number of contact hours was not reported. By 1998, 22 percent of schools offered a stand-alone course, and a similar percentage did so in 2008, with a mean number of contact hours at 14.4 (range three to forty). The number of stand-alone courses for third-year students declined from 47 percent in 1998 to 34 percent (nineteen schools) in 2008. Similarly, the percentage of stand-alone courses for fourth-year students has steadily declined, although the contact hours devoted to ethics in the third and four years has increased. For 1986, Odom[6] reported a mean of nine contact hours for juniors and seniors, whereas our data show a mean of 13.8 for juniors and 13.3 for seniors. Since the 1998 survey estimated credit hours rather than reporting contact hours and reported data from only forty-two of forty-six schools, it is difficult to judge whether the current data represent a decline in the proportion of stand-alone courses, but the contact hours over the twenty-year period appear to have increased.

Our study was more comprehensive than earlier surveys and is distinctive in the fact that all schools responded (earlier surveys had response rates of 92 percent,[5] 96.5 percent,[6] and 84 percent[7]). Both dean-level administrators (43 percent of respondents) and individual faculty members (57 percent of respondents) served as representatives of their schools in responding to our survey. The five cases in which two individuals (one a dean-level administrator and the other a faculty member) inadvertently responded on behalf of their school offered us the opportunity to consider the impact of who responded to the survey on the survey information collected. For three of the schools, the information provided by the two individuals completing the survey was virtually identical, so the respondent appeared not to influence the data collected. For two of the schools, the data provided varied with the respondent and in opposite ways. This observation is consistent with findings reported by Chambers and Licari[47] that who responds to a survey (composition of the sample) can have a great impact on the results obtained. We conclude that it is highly likely that having dean-level respondents and faculty

respondents complete our survey introduced variance into the data we collected that may or may not have been controlled for by inclusion of both groups in the sample. If this survey is repeated, asking multiple respondents from each school to complete the survey would control for this source of variance.

Whereas the amount of time devoted to ethics instruction does not appear to have changed significantly, there are both broad and subtle changes that signal the maturation of the field and even some hopeful new directions. For example, what qualifies as ethics instruction has clearly changed over time. In 1980, Odom[5] reported that many schools had stand-alone courses in ethics. However, his analysis of available syllabi suggested that what schools were labeling as ethics instruction was really jurisprudence, practice management, and avoidance of malpractice. Based on his review of the literature from 1970 to 1980, he concluded that the field of dental ethics was poorly defined, with little emphasis on bioethics, values, or a humanistic approach to ethical problems in dentistry. Further, lecture was the predominant instructional method. Today, we see a substantial list of topics addressed, and our survey results suggest general agreement among schools as to the appropriateness of the topics and the competencies that need to be developed.

The results of this study suggest that dental schools have adopted many of the major recommendations for curricular content and learning strategies proposed in the 1989 Curriculum Guidelines on Ethics and Professionalism in Dentistry,[1] including exposing students to a wide range of ethics issues in dentistry; the use of case-oriented approaches to learning (54/55 schools); discussion of the ADA Principles of Ethics and Code of Professional Conduct[30] (50/55 schools include consideration in a major way); practice resolving ethical dilemmas (50/56 schools: thirty-seven in a major way and thirteen in a minor way); and use of small-group discussions in learning (50/55 schools). Moreover, today almost all schools report using case-based formats in addition to the occasional lecture. More impressive is the percentage of schools that say they use reflective writing and other assessment procedures that require students to demonstrate their ability to apply ethical principles to complex cases.

Unmet Curriculum Needs and Future Directions

This study contributes greater detail than previous studies about the topics typically included in the ethics curriculum, the pedagogies being used, and the kinds of classroom and outcome assessment methods being used. The amount of detail, combined with perceptions of dean-level and faculty respondents in the various schools, provides a stronger basis for recommendations for strengthening ethics instruction than do previous studies.

In our study, more than 60 percent of the schools that identified unmet curriculum needs (28/44) indicated that more integration of ethics instruction across the curriculum was their most important unmet need—particularly what they described as carryover into the clinical years. This unmet need was identified in spite of the fact that most schools (51/56) reported that ethics content is integrated into other courses within their curriculum. This is perhaps because when this integration is accomplished in most cases, ethics content is present in small amounts (less than five hours of total instruction). While such integration of ethics content into other courses may represent a good start toward addressing the concerns raised by the respondents, we conclude that a much more comprehensive approach will be required to address these concerns. In order for ethics to show up in the clinical years of the curriculum—for example, in regular day-to-day discussions of ethical issues and dilemmas that arise in the clinical setting—the concerted efforts of curriculum planners, ongoing assessments of professionalism, and ongoing performance-based assessments of ethical competence will be required. In addition, we conclude that thoughtfully planned faculty development programs will be required (another unmet curriculum need identified by 13.6 percent of the respondents). Moreover, it is highly likely that strengthening ethics instruction will require not only evolving the curriculum but also work at the level of the institutional culture and climate for ethics in dental schools.

The need to assess and ensure ethical competence is another unmet curriculum need identified by about 30 percent (14/44) of the schools that responded to this question. We found that a number of schools use norm-referenced measures to assess particular aspects of ethical competence. For example, fifteen schools (28 percent) use the DIT,[15,16,32-34] a life-span measure of moral judgment development; thirteen (24 percent) use the DERJT,[35,36] a measure of dental ethical reasoning and judgment; and ten use the PROI,[16,19] a measure of professional identity formation. Our study is the first to document the prevalence of these measures across schools. Sixty-five percent of schools assess the ability to conduct an

ethical analysis as a way of measuring ethics learning outcomes, and thirty-five percent use an OSCE that includes ethical issues for this purpose. We did not ask follow-up questions to ascertain the particular ethics competencies (sensitivity, reasoning, identity formation, and ethical implementation) assessed by an OSCE, though presumably all four could be assessed using this method. Our survey data suggest that more faculty development efforts are needed to support faculty members in using norm-referenced measures and other methods for assessing ethical competence.

About 65 percent of schools use some strategy to assess professionalism (i.e., observable behaviors that indicate a commitment to professional ideals). Sixty percent of the respondents reported that checklists were used in clinic to assess professionalism. It would be helpful to identify the array of strategies used to assess or monitor professionalism in a follow-up study.

Earlier surveys did not ask about strategies used to assess classroom performance in ethics instruction. Although ethics workshops offered over the years have advocated techniques for assessing essays, case presentations, or role-plays, our study provides the first indication of the extent to which classroom assessments are being used that would provide formative feedback to students as they work to develop competence in reasoning about and critiquing moral arguments. Two-thirds of the respondents in our study said that they use one or more of these "challenging to grade" assessments: case presentations, essays, and role-plays. Schools have not abandoned the use of objective tests, however, as 72 percent use multiple-choice questions to test knowledge of the ADA Principles of Ethics and Code of Professional Conduct[30] and 48 percent use multiple-choice items to test knowledge of the principles of biomedical ethics.

A few schools (6.8 percent) indicated a need for more attention to methods of instruction including role-playing, cases for integration of ethics content across the curriculum, more active learning, and self-assessment/reflective practice. These schools may be quite forward-looking. The ADA Commission on Dental Accreditation recently approved significant changes to the accreditation standards for dental education programs.[48] New and revised standards address self-assessment and development of professional competencies and values, and it is likely that the pedagogies and instructional methods identified in our study will be helpful in both formative and summative assessments of student learning outcomes in these domains.

Finally, schools must remain aware of environmental factors (educational, cultural, and climate issues) that can either support or work against the formal instruction that seeks to develop and assess students' ethical competence. Our survey identified three elements that support formal ethics instruction: white coat ceremonies, an honor system (with student participation in the adjudication system in some cases), and awards or other special recognition for outstanding performance in ethics and professionalism. For schools that have a mix of graded and nongraded courses, we note that when ethics is integrated into other courses, the grading policy favors a graded vs. a pass/fail grading policy. In contrast, with first-year stand-alone ethics courses, only slightly more than half are graded. When ethics courses are offered pass/fail in a curriculum in which most courses are graded, there is the risk that the environmental message sent to students is that there are no objective criteria or standards for judging the adequacy of a moral argument, hence no way to determine a grade. This cultural message reinforces moral relativism and may suggest to students that professional ethical judgments are subjective and personal. Such a message would clearly work against the efforts of formal instruction in ethics.[21]

Agenda for Future Research

Some schools are engaging students in taking personal responsibility for their ethical development. For example, having students complete norm-referenced measures like the DIT[15,16,32-34] or the PROI[16,29] or a role-concept essay upon entry to professional school and giving them feedback on their developing competence in reasoning or articulating professional role expectations can become a basis for initial goal-setting. We found that thirty-three and twenty-four schools, respectively, include peer- or self-assessment in a major way in their ethics instruction, while eleven schools include a learning needs assessment and development of a personal learning plan in a major way. This is encouraging in that it may indicate that ethics instruction is engaging students in formally charting goals for their own professional development. Helping students reflect upon who they are and what level of competence they have developed to date provides a basis for goal-setting and for later reflection on personal achievements. Such approaches, when coupled with feedback from peers and mentors, support

development of the skills required for self-directed, lifelong learning and professional development. Portfolios containing these reflections and other evidence of student learning provide a scaffold to support this work over time and facilitate engagement of students in shaping their own learning and development.

Based on the survey outcomes, we offer some suggestions for an agenda for future research. First, we conclude that dental schools should use measures to assess the learning outcomes of their ethics instruction. These outcome assessments not only provide a way to ensure that schools are achieving desired learning outcomes, but also a mechanism for documenting the ethical competence of graduates and setting goals and charting progress toward improving learning outcomes. Studies describing this process would be valuable to all dental schools seeking to improve student learning in ethics. Existing norm-referenced measures could be useful to schools in this regard. Second, such studies could help identify the need for additional outcomes assessment measures. Dental schools could collaborate to develop and validate such measures. Third, dental schools could collaborate to develop best practices to support faculty members in their development as mentors to students' ethical development. Finally, studies are needed to identify factors that support and enhance the ethical climate of dental schools.

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