

# Palliative and End-of-Life Care Education Among Alpert Medical School Students

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## ABSTRACT

Doctors in almost every branch of medicine encounter patients who are dying or have serious illnesses. Numerous studies, however, indicate that the education of physicians does not adequately prepare them for such patients. We aimed to characterize the current training of Alpert Medical School (AMS) students on palliative and end-of-life care using a cross-sectional, web-administered survey. We discovered less than half of Alpert Medical School students have worked with dying patients, and almost a quarter of graduating medical students did not feel prepared to palliate common symptoms including pain, nausea, shortness of breath, and anxiety. We also found that exposure to dying individuals was significantly associated with many symptom management skills and more favorable attitudes toward palliative medicine. We therefore recommend that palliative care skills, which are relevant to all future physicians regardless of specialty, be incorporated throughout the AMS curriculum, and that more students be exposed to patients at end-of-life.

**KEYWORDS:** end-of-life care, palliative medicine, medical education

## INTRODUCTION

*“It’s not enough. We all need a lot more. It would save the system a lot of money and lead to higher quality of life and patient/physician satisfaction.”*

A recently published Institute of Medicine (IOM) report finds that because the supply of hospice and palliative care specialists in the United States is small, many patients rely on other clinicians for palliative care and care at end-of-life (EOL).<sup>1</sup> They recommend that educational institutions establish appropriate training requirements to strengthen the knowledge of students in these areas. Regardless of specialty, nearly every future doctor will need to learn skills in pain control, symptom management, communicating difficult medical realities, and patient-centered decision-making. Moreover, doctors in almost every branch of medicine encounter patients who are dying or have serious illnesses.<sup>2</sup> Numerous studies, however, indicate that the education of physicians does not adequately prepare them for such patients.<sup>3,4</sup>

We aimed to characterize the current training of Alpert Medical School students on palliative and EOL care. Our questions fell into three main categories. The first category we labelled attitudinal questions; these items assessed students’ comfort communicating with patients and families, supporting psychosocial needs, and other skills that involve interaction between physician and patients. Next, we directly asked students to rate how prepared they felt to complete common symptom management tasks, such as treating pain. We referred to these items as symptom-management questions. Finally, we included factual questions to verify that if students did report preparedness, they also had the knowledge to properly provide care; we called these items our knowledge-based questions.

## METHODS

*“I think a major hole in the preclinical education is learning what death is. We never learn any of the physiology or science behind this fundamental part of life.”*

### Survey Development

All adapted questions were from the Harvard Medical School Center for Palliative Care Program in Palliative Care Education and Practice Post-Program Inventory, November 2003.<sup>5</sup> Other questions were developed by the author.

### Data Collection

Our study was a cross-sectional, web-administered survey designed using DatStat Illume.<sup>6</sup> The target population was current AMS students. A survey invitation was sent to the email listserv of all 457 students on April 8, 2014.<sup>7</sup> Our Illume license agreement required that we cease collection after obtaining 50 complete surveys, therefore our sample size was 50.

### Data Preparation

We downloaded raw data from the Illume Web Server to Microsoft Excel,<sup>8</sup> and imported into STATA 13.0.<sup>9</sup> For each of the knowledge-based questions a new variable was created (correct vs. incorrect), counting as incorrect those who chose the wrong answer or selected “don’t know.” We then created a variable containing each participant’s total correct score on the knowledge questions (out of 5).

### Data Analysis

Descriptive statistics characterized palliative and EOL knowledge in the sample. We utilized Fisher’s exact test to

evaluate differences between individuals with and without experience with dying patients. Fisher's test was also used to test for a significant relationship between year in medical school and preparation to perform common palliative tasks. When one or more of the expected number of observations in a cross-tabulation cell is less than 5, Fisher's test is used to replace the chi-squared test of significance.<sup>10</sup>

## RESULTS

*“There was not enough patient interaction, or emphasis on realistic scenarios. Standardized patients often do not present realistic scenarios. Training should be much more experience-based and not overwhelmingly discussion-based.”*

**Table 1** displays responses to attitudinal questions. Less than half of students had experience working with a dying patient, but among students who did have such experience (n=24), 87.5% found it very or somewhat rewarding. Ninety percent of respondents asserted that physician responsibility is to the family as well as the patient. Most respondents agreed or strongly agreed with the statement that a prognosis should always be shared with the patient (Table 1), demonstrating medical students may not be fully aware

of the limited accuracy of most prognoses, especially for non-cancer conditions. More than half (58%) of Alpert students feel at least somewhat prepared to discuss DNRs, with 18% reporting being very prepared. Only one student (2%) felt very prepared to discuss a transition to comfort-only measures with patients, and just 6% of respondents felt very prepared to break bad news. Half our respondents did not feel at all prepared to discuss common symptoms at the end-of-life, 34% are not at all prepared to assess psychosocial needs, and 38% are not at all prepared to assess caregiver needs. Only two respondents (4%) felt very prepared to help grieving persons.

**Table 2** illustrates that few students reported being very prepared to carry out symptom management tasks, such as treating constipation (14%), shortness of breath (8%), anxiety (8%), nausea (6%), and pain (6%). The average number of correct answers to knowledge-based EOL questions was three out of five (see **Table 3**). Most students knew that asking about pain is the optimal method for assessment (84%), that neuropathic and somatic pain are treated differently (76%), and that increasing tolerance is not a sign of addiction to opioids in dying patients (72%). However, less than half (36%) knew that when attempts to control disease stop working, patients should be referred to hospice and that

**Table 1.** Frequencies of attitudinal items

Item	Not at all rewarding	A little rewarding	Somewhat rewarding	Very rewarding	Don't know
How rewarding do you find the experience of working with dying patients? (n=24)	0 (0.0%)	1 (4.2%)	9 (37.5%)	12 (50.0%)	2 (8.33%)
<b>Item: Please indicate your agreement or disagreement with the following statements.</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly agree</b>	<b>Don't know</b>
Every doctor should know how to interact with dying patients. (n=50)	1 (2.0%)	1 (2.0%)	7 (14.0%)	40 (80.0%)	1 (2.0%)
To provide the best end-of-life care, a physician should be emotionally uninvolved with his/her patient. (n=50)	16 (32.0%)	27 (54.0%)	4 (8.0%)	1 (2.0%)	2 (4.0%)
There is little the physician can do to ease the suffering of grief. (n=50)	24 (48.0%)	24 (48.0%)	1 (2.0%)	0 (0.0%)	1 (2.0%)
Psychological suffering can be as painful as physical suffering. (n=50)	0 (0.0%)	1 (2.0%)	15 (30.0%)	33 (66.0%)	1 (2.0%)
The physician's responsibility is to the patient ONLY, not the family. (n=50)	16 (32.0%)	29 (58.0%)	2 (4.0%)	1 (2.0%)	2 (4.0%)
A prognosis is always important information to share with the patient. (n=49)	0 (0.0%)	10 (20.4%)	28 (57.1%)	9 (18.4%)	2 (4.1%)
<b>Item: Based on medical coursework, clinical experiences, personal experiences, or any other relevant information, please describe how prepared you feel to do the following:</b>	<b>Not at all prepared</b>	<b>A little prepared</b>	<b>Somewhat prepared</b>	<b>Very prepared</b>	<b>Don't know</b>
Discuss end-of-life care decisions, such as a DNR (do-not-resuscitate) decision, with a patient? (n=50)	7 (14.0%)	13 (26.0%)	20 (40.0%)	9 (18.0%)	1 (2.0%)
Break bad news to a patient about his or her illness? (n=50)	11 (22.0%)	20 (40.0%)	15 (30.0%)	3 (6.0%)	1 (2.0%)
Discuss the transition from curative treatments to comfort-only measures with patients or their families? (n=50)	18 (36.0%)	14 (28.0%)	15 (30.0%)	1 (2.0%)	2 (4.0%)
Assess the psychosocial needs of a dying patient? (n=50)	17 (34.0%)	16 (32.0%)	13 (26.0%)	2 (4.0%)	2 (4.0%)
Assess caregiver needs in end-of-life care? (n=50)	19 (38.0%)	16 (32.0%)	13 (26.0%)	1 (2.0%)	1 (2.0%)
Answer questions about what to expect at the end-of-life? (n=50)	25 (50.0%)	15 (30.0%)	7 (14.0%)	2 (4.0%)	1 (2.0%)
Help grieving family members through the bereavement process? (n=50)	15 (30.0%)	17 (34.0%)	14 (28.0%)	2 (4.0%)	2 (4.0%)

**Table 2.** Frequencies of symptom management items

Item: Based on your medical school coursework and medical school clinical experiences only, how prepared do you feel to manage the following common end-of-life symptoms?	Not at all prepared	A little prepared	Somewhat prepared	Very prepared	Don't know
Pain (n=50)	14 (28.0%)	17 (34.0%)	13 (26.0%)	3 (6.0%)	3 (6.0%)
Shortness of breath (n=50)	17 (34.0%)	18 (36.0%)	8 (16.0%)	4 (8.0%)	3 (6.0%)
Anxiety (n=50)	15 (30.0%)	17 (34.0%)	11 (22.0%)	4 (8.0%)	3 (6.0%)
Constipation (n=50)	16 (32.0%)	13 (26.0%)	10 (20.0%)	7 (14.0%)	4 (8.0%)
Nausea (n=50)	14 (28.0%)	11 (22.0%)	18 (36.0%)	3 (6.0%)	4 (8.0%)

**Table 3.** Frequencies of knowledge-based items

Item: Please describe the following statements as true or false to the best of your ability.	% Correct
The best way to obtain information about pain is to ask the patient. (n=50)	84.0
Neuropathic pain and somatic pain are treated the same way. (n=50)	76.0
Patients should be referred to hospice when they are no longer responding to curative treatments. (n=50)	36.0
Increasing tolerance to opioids is a sign of addiction among those who are dying. (n=50)	72.0
Symptoms of depression at the end-of-life are evaluated differently than in otherwise healthy adults. (n=50)	36.0
<i>Average number of correct knowledge questions</i>	
	3 (out of 5)

**Table 4.** Differences in responses to items among those with and without experience working with dying patients.

Item	Fisher's exact p-value
Attitudinal items	
<b>How rewarding do you find the experience of working with dying patients? (n=24)</b>	n/a
Every doctor should know how to interact with dying patients. (n=46)	0.48
To provide the best end-of-life care, a physician should be emotionally uninvolved with his/her patient. (n=50)	0.07
There is little the physician can do to ease the suffering of grief. (n=46)	0.94
Psychological suffering can be as painful as physical suffering. (n=46)	1.00
The physician's responsibility is to the patient ONLY, not the family. (n=46)	0.02
A prognosis is always important information to share with the patient. (n=46)	0.70
Preparation to discuss end-of-life care decisions, such as a DNR (do-not-resuscitate) decision, with a patient. (n=50)	0.01
Preparation to break bad news to a patient about his or her illness. (n=50)	0.01
Preparation to discuss the transition from curative treatments to comfort-only measures with patients or their families. (n=50)	0.02
Preparation to assess the psychosocial needs of a dying patient. (n=50)	0.01
Preparation to assess caregiver needs in end-of-life care. (n=50)	0.33
Preparation to answer questions about what to expect at the end-of-life. (n=50)	0.07
Preparation to help grieving family members through the bereavement process. (n=50)	0.17
<b>Symptom management items</b>	
Preparation to manage pain. (n=50)	0.01
Preparation to manage shortness of breath. (n=50)	0.05
Preparation to manage anxiety. (n=50)	0.00
Preparation to manage nausea. (n=50)	0.08
Preparation to manage constipation. (n=50)	0.38
<b>Knowledge-based items</b>	
Average # correct out of 5 (n=50)	0.73

Table 5. Item variation by year in medical school.

Item	Attitudinal items % Somewhat or very rewarding				Fisher's exact p-value
	First Year (n=21)	Second Year (n=10)	Third Year (n=6)	Fourth Year (n=13)	
How rewarding do you find the experience of working with dying patients? (n=24)	0.50	100.0	100.0	92.3	0.18
	Attitudinal items % Agree or strongly agree				Fisher's exact p-value
	First Year (n=21)	Second Year (n=10)	Third Year (n=6)	Fourth Year (n=13)	
Every doctor should know how to interact with dying patients. (n=50)	90.5	90.0	100.0	100.0	0.72
To provide the best end-of-life care, a physician should be emotionally uninvolved with his/her patient. (n=50)	14.3	10.0	16.7	0.0	0.52
There is little the physician can do to ease the suffering of grief. (n=50)	0.0	0.0	16.7	0.0	0.12
Psychological suffering can be as painful as physical suffering. (n=50)	4.8	0.0	0.0	0.0	0.23
The physician's responsibility is to the patient ONLY, not the family. (n=50)	100.0	100.0	100.0	84.6	0.45
A prognosis is always important information to share with the patient. (n=49)	14.3	0.0	0.0	0.0	0.07
	Attitudinal items % Somewhat or very prepared				Fisher's exact p-value
	First Year (n=21)	Second Year (n=10)	Third Year (n=6)	Fourth Year (n=13)	
Discuss end-of-life care decisions, such as a DNR (do-not-resuscitate) decision, with a patient	38.1	40.0	66.7	100.0	<b>0.00</b>
Break bad news to a patient about his or her illness	14.3	40.0	33.3	69.2	<b>0.01</b>
Discuss the transition from curative treatments to comfort-only measures with patients or their families	14.3	30.0	16.7	69.2	<b>0.01</b>
Assess the psychosocial needs of a dying patient	9.5	30.0	33.3	61.5	<b>0.01</b>
Assess caregiver needs in end-of-life care	19.1	10.0	50.0	46.2	0.10
Answer questions about what to expect at the end-of-life	4.8	10.0	16.7	46.2	<b>0.02</b>
Help grieving family members through the bereavement process	14.3	30.0	33.3	61.5	<b>0.04</b>
	Symptom management items % Somewhat or very prepared				Fisher's exact p-value
	First Year (n=21)	Second Year (n=10)	Third Year (n=6)	Fourth Year (n=13)	
Manage pain at the end- of-life	14.3	10.0	33.3	76.9	<b>0.00</b>
Manage shortness of breath at the end-of-life	9.5	0.0	16.7	69.2	<b>0.00</b>
Manage anxiety at the end-of-life	9.5	10.0	50.0	69.2	<b>0.00</b>
Manage constipation at the end-of-life	9.5	0.0	83.3	76.9	<b>0.00</b>
Manage nausea at the end-of-life	14.3	30.0	83.3	76.9	<b>0.00</b>
	Knowledge-based items % Correct				Fisher's exact p-value
	First Year (n=21)	Second Year (n=10)	Third Year (n=6)	Fourth Year (n=13)	
The best way to obtain information about pain is to ask the patient.	81.0	80.0	83.3	92.3	0.85
Neuropathic pain and somatic pain are treated the same way.	71.4	70.0	83.3	84.6	0.82
Patients should be referred to hospice when they are no longer responding to curative treatments.	42.9	30.0	16.7	38.5	0.76
Increasing tolerance to opioids is a sign of addiction among those who are dying.	52.4	70.0	83.3	100.0	<b>0.01</b>
Symptoms of depression at the end-of-life are evaluated differently than in otherwise healthy adults.	47.6	20.0	33.3	30.8	0.50

depression at the end-of-life needs to be evaluated differently than in non-dying persons.

Several items demonstrated significantly different responses depending on whether the respondent had experience with dying patients (Table 4). Those without experience were less likely to recognize obligation to family. In addition, those who had worked with the dying were more likely to report they were somewhat or very prepared to discuss DNRs, break bad news, discuss a transition to comfort measures, and assess psychosocial needs of dying patients. Individuals with experience with dying patients also reported being more prepared to treat anxiety, shortness of breath, and pain in dying patients.

Table 5 illustrates how palliative and EOL care competency varies by year in medical school. Year in medical school is significantly associated with ability to carry out all symptom management tasks. Symptom management preparedness ranged from 69.2–76.9% among graduating students. Year in medical school is also significantly related to preparedness to discuss DNRs, assess psychosocial needs, and discuss a transition to comfort-only measures. In fact, 100% of graduating AMS students surveyed felt somewhat or very prepared to discuss DNRs, 69.2% felt prepared to discuss a transition to comfort measures, and 61.5% felt ready to assess psychosocial needs. However, one area in which there is no significant difference between first- and fourth-year students is ability to assess caregiver needs, nor were there significant differences in any of our attitudinal questions by year of schooling.

## DISCUSSION

*“There is a portion of our Internal Medicine clerkship where we spend time with a hospice specialist. This was a helpful experience, but mostly shadowing. We also had some helpful readings; however, there is a void in actually recognizing clinical signs of end-of-life and appropriate clinical palliation of pain, anxiety, constipation, etc.”*

*“I did 2 weeks of a palliative care clinical elective here at Brown and found it incredibly valuable.”*

The recent IOM publication on the status of EOL care, *Dying in America*, calls for sweeping change for the field to meet the needs of dying patients. One particular recommendation is for medical schools to increase training in palliative care so more clinicians know how to compassionately and effectively treat patients who want to be made comfortable but avoid extensive medical procedures.<sup>11</sup> With the aging of the US population, the increased prevalence of chronic disease, and the growing media and societal attention toward EOL care, it has become imperative that graduating physicians have basic skills in palliative and EOL medicine.

In this study, we aimed to assess the preparation and knowledge of Alpert Medical School students with regard to

palliative care and care for EOL patients. Based on our sample, we discovered less than half of Alpert Medical School students have worked with dying patients, and almost a quarter of graduating medical students did not feel prepared to palliate common symptoms including pain, nausea, shortness of breath, and anxiety.

Medical school curricula are already overstrained by an ever-expanding knowledge and skill base within all medical fields.<sup>12</sup> In their 2013 review of the subject, Horowitz et al<sup>12</sup> recommend that palliative skills be dispersed throughout the medical school curriculum. The Board of Hospice and Palliative Medicine Competencies Work Group<sup>13</sup> defines palliative care competencies to include communication, pain and symptom management, quality-of-life focus, care coordination, and interdisciplinary team involvement. These are skills every physician should embody, and can easily be integrated into existing coursework on medical interviewing, ethics, pharmacology, and clinical teaching rounds. For AMS students specifically, based on our finding that only half of students had ever worked with a dying patient and that exposure to dying individuals was significantly associated with many symptom management skills and more favorable attitudes toward palliative medicine, we recommend an increase in clinical exposure to individuals at the end-of-life.

There are several limitations to our study. First, we utilized a convenience sample out of necessity. Although all medical students were given the opportunity to complete the survey, it is possible that those with a previous interest in EOL care were more likely to complete the survey, artificially inflating reported preparedness to provide EOL care. Second, the Illume license agreement restricted us to a sample size of 50, limiting our ability to perform statistical analysis. A larger sample size would have more power to detect statistically significant differences among students in different years of medical school and among those with and without exposure to dying patients. Third, because of limited time and resources, we did not have the ability to use question assessment strategies such as focus groups, cognitive interviews, or pre-testing. Further research should aim to validate the questions used in this survey. Finally, only Alpert students were invited to complete the survey, negating the generalizability of our results to other schools.

In sum, nearly every physician encounters individuals with serious illnesses and those who are dying. Palliative care skills – including communication, symptom management, and interdisciplinary teamwork – are skills that can be applied universally in medicine. We found that among AMS students, only half had been exposed to a dying individual, and many did not feel prepared for basic EOL and palliative tasks, such as pain relief and difficult conversations with patients. We recommend that palliative care skills be incorporated throughout the AMS curriculum, and that more students be exposed to patients at the end-of-life.

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