A Comparison of the Willingness of Resident and Attending Physicians to Comply with the Requests of Patients at the End of Life

John M. Thomas, MD^{1,2}, John R. O'Leary, MA³, and Terri R. Fried, MD^{1,3,4}

¹Department of Medicine, Yale University School of Medicine, New Haven, CT, USA; ²Center of Excellence in Primary Care Education, VA Connecticut Healthcare System, West Haven, CT, USA; ³Program on Aging, Yale University School of Medicine, New Haven, CT, USA; ⁴Clinical Epidemiology Research Center, VA Connecticut Healthcare System, West Haven, CT, USA.

BACKGROUND: Little is known about the differences between physicians in training and post training in their willingness to comply with patient requests at the end of life.

OBJECTIVE: To compare the attitudes of attendings and residents regarding a range of patient requests at the end of life

DESIGN: Written, cross-sectional survey

PARTICIPANTS: The cohort included 191 attendings randomly selected across the state of Connecticut and 240 residents from 2 university-affiliated Internal Medicine programs.

MAIN MEASURES: We surveyed attendings and residents about their willingness to honor the requests of the same decisionally capable elderly patient in five scenarios involving different requests regarding end-of-life treatment.

RESULTS: While a large majority of both attendings and residents were willing to comply with each of the requests to withhold intubation (100 % and 94 %, respectively), to extubate (92 % and 77 %), and to give increasingly higher doses of narcotics (94 % and 71 %), a significantly larger proportion of attendings versus residents was willing to comply with each of these requests. Small proportions of attendings and residents were willing to prescribe a lethal amount of sleeping pills (3 % and 5 %, respectively) and to give a lethal injection in its current illegal state (1 % and 4 %). A significantly larger proportion of residents (32 %) compared to attendings (19 %) was willing to give a lethal injection if legal. Adjusting for sociodemographic factors, attending status was independently associated with willingness to extubate [adjusted odds ratio (AOR)=3.0, 95 % CI=1.6-5.7] and to give a lethal injection if legal (AOR=0.5, 95 % CI=0.3-0.8). The proportion of physicians willing to extubate increased across years since graduation, with the greatest differences occurring across the residency years (69 % to 86 %).

CONCLUSIONS AND RELEVANCE: Clinical experience was an important determinant of physicians' willingness to perform multiple patient requests at the end of

life, with substantial changes in attitudes occurring during residency training. More research is needed to determine whether dedicated clinical exposure for physicians in training influences attitudes.

KEY WORDS: geriatrics; end of life; decision making; bioethics.

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INTRODUCTION

Although increasing attention has been paid to patient autonomy in the US over the past few decades, research characterizing physicians' attitudes toward the care of patients at the end of life suggests that physicians are not uniformly willing to comply with the requests of decisionally capable patients. For example, regarding requests for the withdrawal or withholding of life-sustaining therapy, the willingness of physicians has been shown to be influenced by the clinical situation¹⁻³ and physicians' characteristics, including demographic traits,⁴ specialty,⁵ and beliefs about what it means to be a physician.⁶ Regarding physician-assisted suicide (PAS) and euthanasia, most physicians are opposed to these practices,⁶⁻¹⁰ but specialty⁹ and religious preference^{9,10} have been shown to influence willingness.

One study comparing the attitudes of American attendings and residents on interventions at the end of life provides evidence to suggest that the attitudes of physicians in training differ from those post training,¹¹ which if confirmed would have important implications for both patient care and residency training. This study showed a greater number of residents than attendings willing to perform physician-assisted suicide and euthanasia if they were legal, although there was no difference in attitudes in the latter scenario after adjusting for a few basic descriptor variables.¹¹ However, this analysis was limited by the modest number of residents participating in the study. A larger study from over 20 years ago did not find differences

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between residents' and attendings' willingness to comply with a variety of requests,² but this likely reflects a different era in which there was less consensus about what is ethically acceptable in end of life care.¹²⁻¹⁴

We undertook this study to explore the attitudes of a contemporary cohort of American residents and attendings toward honoring a broad range of patient requests at the end of life. The purpose of the study was to compare the willingness of attendings and residents to comply with patient requests regarding life-sustaining therapies, euthanasia, and PAS, and to identify factors influencing these attitudes.

METHODS

Participants

In November 2010, we mailed surveys to 396 practicing attending physicians randomly selected from a registry of Connecticut State Medical Society members. The target population was stratified by specialty, such that general internists and family practitioners each comprised roughly one-quarter of the population, while cardiologists, gastroenterologists, nephrologists, oncologists, and pulmonologists together comprised roughly one-half of the population, stratified equally by specialty. The five subspecialties were chosen to identify physicians whose practices were likely to include patients with life-threatening diseases (geriatricians and palliative care specialists were not included because of their small numbers in Connecticut). Four mailings and two follow-up phone calls resulted in 191 completed surveys (48 % response rate).

We administered a similar written survey in June 2011 to residents of Internal Medicine at two university-affiliated programs in Connecticut during housestaff meetings. Out of a total number of 348 residents at both programs, 240 residents completed surveys (69 % response rate).

The study protocol was approved by each of the Human Investigation Committees overseeing the five hospitals where surveys were administered.

Surveys

The survey consisted of questions asking physicians about their willingness to honor the request of a patient regarding end-of-life treatment in five scenarios that have been previously described.⁶ These scenarios were chosen to cover a spectrum of patient requests that varied in terms of their respective ethical considerations. They all involved an 80-year-old man with metastatic lung cancer who is not depressed and in each case makes a request for which he demonstrates capacity. In Scenario 1, the patient is developing respiratory compromise and requests not to be

placed on a ventilator, understanding that it will likely result in his death. In Scenario 2, the patient had been emergently intubated, and later, without any hope of coming off the respirator, asks the provider to turn it off. In Scenario 3, the patient is experiencing greater pain from his carcinoma while in the hospital and asks for increasingly higher doses of narcotics, to the extent that the provider is concerned about respiratory compromise and death resulting from narcotic administration. In Scenario 4, the patient's pain is under control but he cannot bear being so debilitated, so he asks the provider to prescribe enough sleeping pills so that he could use them to kill himself. In Scenario 5, the patient has the same circumstances as in the previous scenario, but is too weak to swallow pills and asks the provider for a lethal injection.

Following each scenario description, survey respondents were asked to decide whether to comply with the patient's request if the decision were theirs alone. Attending physicians only, due to considerations about survey length for the residents, were then asked for Scenarios 2 through 5 to rate how strongly specific factors had influenced their willingness to perform the request (possible responses ranged from "strongly influenced" to "not influenced" on a 5-point scale, with a response of 4 or 5 considered an influence). The factors included "specific patient encounters like the one described above," "personal life experiences," "opinions of patients' family members," "colleagues' opinions," "consideration of palliative care options," "concern that it undermines the role of clinician," "personal moral beliefs," and "legal considerations." Some of these factors were drawn as single items from a prior study.⁶ These factors were selected to cover a range of potential influences pertaining to prior clinical and personal experiences as well as ethical, moral, and legal considerations. Then for each scenario, all respondents were asked whether they had ever been asked by patients to perform the request. For Scenario 5 only, respondents were asked whether they would comply with the patient's request if a new law were to legalize lethal injections. The purpose of this additional question was to assess the full extent to which respondents were willing to honor patient requests in the absence of legal restrictions.

All surveys were completed anonymously. Self-reported demographic information included age, sex, race, year of graduation from medical school, religion, and importance of religion and of spirituality (each assessed using a 5-point scale from "very important" to "not important," with responses of 4 or 5 combined as "important"). Attending physicians were asked to report their specialty from one of the following choices: "general internist," "family practitioner," "cardiologist," "gastroenterologist," "nephrologist," "oncologist," and "pulmonologist."

Test-retest reliability for respondents' willingness to perform requests was determined by administering an abbreviated survey to a representative sample of 11

attending and residents on two separate occasions approximately one week apart. Cohen's kappa coefficient was calculated to be 0.94.

Analysis

Frequencies and proportions were used to describe participant characteristics and responses separated by training level (attending versus resident). We used the chi-square or Fisher's exact test to assess for differences in responses between attendings and residents. We selected one scenario in which a significantly higher frequency of attendings were willing to comply with the request as compared to residents and another scenario for which a significantly higher frequency of residents were willing to comply with the request as compared to attendings for further analysis of factors associated with willingness to comply with the request. These scenarios were patient requests for extubation and for a lethal injection if legal.

The factors we examined for their association with willingness to perform these selected requests included sex, race, religion, importance of religion and of spirituality, number of hours spent seeing patients every week, specialty, and whether the respondent had ever been asked by patients to perform the request. In order to investigate whether training level (attending versus resident) was independently associated with differences in response to these scenarios, we performed multivariable analyses. Factors found to be associated in bivariate analysis with $p < 0.10$ for each of the two scenarios were entered into a logistic regression model.

We further investigated the relationship between clinical experience and attitudes by performing a bivariate analysis of the entire cohort, including both residents and attendings, to examine the relationship between attitudes and years since graduation. The latter variable was categorized based on its distribution in our study, with 1, 2, and 3-4 years since graduation to represent the residents and decades since graduation to represent the attendings. We used the chi-square test to assess for differences in responses by years since graduation.

RESULTS

Characteristics of the attendings and residents are described in Table 1. The average ages of attendings and residents were 54 and 28, respectively (average years since graduation for attendings was 27, with a range 6-50). Only 21 % of attendings were female, compared to 55 % of residents. While 89 % of attendings were white, 46 % of residents were white and 39 % of residents were Asian. The largest religious population among attendings was Jewish (35 %), while among residents it was "other" (29 %).

Table 1. Characteristics of Attendings and Internal Medicine Residents in Connecticut

Characteristic	Attendings N=191 (48 % response rate)	Residents N=240 (69 % response rate)
Age, mean (range)	54 (33-75)	28 (22-42)
Specialty, %		
General internal medicine	24	n/a
Family practice	25	n/a
Sub-specialization	49	n/a
Postgraduate year, %		
1	n/a	49
2	n/a	28
3 or 4	n/a	24
Female, %	21	55
Race, %		
White	89 [†]	46 [§]
Asian	9	39
African American	1	6
More than one race	1	2
Other	2	7
Ethnicity, %		
Hispanic or Latino	3	2
Non-Hispanic and Non-Latino	97	98
Religion, %		
Jewish	35 [*]	9 [§]
Catholic	23	22
Protestant	16	16
Muslim	3	8
Other [§]	12	29
Atheist, agnostic, or None	15	19
Religion important, %	47 [‡]	47 [¶]
Ever asked by patients to extubate, %	83 [*]	71 [¶]
Ever asked by patients for a lethal injection, %	12 [‡]	3 [§]

*N=188; †N=186; ‡N=189; §N=238; ¶N=236; ¶N=237

§ "Other" does not include those who self-reported their religion as agnostic, atheist, or none

Respondents were similar to non-respondents in gender makeup (21 % versus 22 % females, respectively), and response rates of attendings were similar by specialty (45 % of general internists, 51 % of family practitioners, 45 % of cardiologists, 50 % of gastroenterologists, 48 % of nephrologists, 55 % of oncologists, and 50 % of pulmonologists).

Willingness of Attendings and Residents to Comply with Patient Requests

While a large majority of both attendings and residents were willing to comply with each of the requests to withhold intubation (100 % and 94 %, respectively), to extubate (92 % and 77 %), and to give increasingly higher doses of narcotics (94 % and 71 %) (Table 2), a significantly larger proportion of attendings versus residents was willing to comply with each of these requests ($P=0.0004$, $P<0.0001$, $P<0.0001$, respectively). There were no significant differences in the small proportions of attendings and residents willing to prescribe a lethal amount of sleeping pills (3 % and 5 %, respectively) or to give a lethal injection in its current illegal state (1 % and 4 %). A significantly larger

Table 2. Willingness of Attendings and Internal Medicine Residents to Comply with Various Patient Requests at the End of Life

Request	Attendings	Residents	P-value
	N=191 n (%)	N=240 n (%)	
Withhold intubation, %	191 (100)	224 (94) [§]	0.0004
Extubate, %	175 (92) [*]	182 (77)	<0.0001
Give all narcotics required for pain, %	179 (94) [*]	168 (71)	<0.0001
Prescribe lethal amounts of sleeping pills, %	6 (3) [*]	12 (5) [§]	0.1521
Give lethal injection, %	2 (1) [†]	10 (4) [§]	0.1225
Give lethal injection if legal, %	31 (19) [‡]	75 (32)	0.0045

*N=190; †N=188; ‡N=162; §N=238; ||N=237; ¶N=234

proportion of residents (32 %) versus attendings (19 %) was willing to give a lethal injection if legal (P=0.0045).

Factors Influencing Attendings' Willingness to Comply with Patient Requests

Factors cited by ≥50 % of attendings as having influenced their willingness to comply with each of the patient requests are listed in Table 3. For the scenarios of extubation and use of increasingly higher doses of narcotics, large proportions of attendings cited "specific patient encounters like the one described above" (81 % and 89 %, respectively) and "opinions of patients' family" (62 % and 57 %, respectively). For the scenarios of prescribing lethal amounts of sleeping pills and giving a lethal injection, large proportions of attendings cited "consideration of palliative care

Table 3. Factors Cited by Attendings as Influencing* Their Willingness to Comply with Various Patient Requests

Request	Factors	Attendings, %
		(N=191)
Extubate [†]	Patient encounters	81
	Opinions of patients' family	62
	Personal life experiences	51
Give all narcotics required for pain [‡]	Patient encounters	89
	Consideration of palliative care options	75
	Opinions of patients' family	57
Prescribe lethal amounts of sleeping pills [§]	Consideration of palliative care options	68
	Legal concerns	66
	Moral beliefs	61
Give lethal injection	Legal concerns	64
	Moral beliefs	61
	Consideration of palliative care options	60

*Possible responses ranged from 1 to 5, based on strength of influence; each factor rated 4 or 5 by ≥50 % of attendings was considered an influence

†N=183; ‡N=182; §N=180; ||N=179

options" (68 % and 60 %, respectively), "legal concerns" (66 % and 64 %, respectively), and "moral beliefs" (61 % and 61 %, respectively).

Characteristics Associated with Willingness of Attendings and Residents to Extubate

When the responses of attendings and residents were combined, characteristics independently associated with willingness to extubate included having been asked by patients in the past [adjusted odds ratio (AOR)=4.0, 95 % CI=2.2-7.1], attending rather than resident (AOR=2.8, 95 % CI=1.4-5.5), and Muslim (AOR=0.2, 95 % CI=0.1-0.6) (Table 4). Race and religion not important were also entered into the model because of their association with willingness in bivariate analysis, but these variables did not retain their significance.

Characteristics Associated with Willingness of Attendings and Residents to Give a Lethal Injection if Legal

When the responses of attendings and residents were combined, characteristics independently associated with willingness to give a lethal injection if legal included religion not important (AOR=3.9, 95 % CI=2.3-6.6) and resident rather than attending (AOR=1.9, 95 % CI=1.1-3.3) (Table 4). Race and religion were also entered into the model but did not retain significance.

Relationship Between Years Since Graduation and Willingness to Extubate and to Give a Lethal Injection if Legal

When the responses of residents and attendings were combined and were examined according to years since graduation, a U-shaped relationship was observed for willingness to extubate (P<0.0001) (Table 5). The proportion of physicians willing to extubate increased substantially from postgraduate year 1 to postgraduate year 3 or above (69 % to 86 %), and increased further, such that the vast majority of physicians were willing to extubate from their earliest attending years up to 40 years since graduation (92-100 %), then decreased among physicians who were more than 40 years post-graduation (69 %). No significant differences were found among the modest proportions of physicians willing to give a lethal injection if legal according to years since graduation.

DISCUSSION

In this study characterizing the willingness of attendings and residents to comply with the requests of decisionally

Table 4. Bivariate and Multivariable Models for Determinants of Willingness to Extubate and to Give a Lethal Injection if Legal Among Connecticut Attendings and Residents

Willingness to extubate			Willingness to give a lethal injection if legal		
Variable	Unadjusted Odds ratio (95 % CI)	Adjusted Odds ratio (95 % CI)	Variable	Unadjusted Odds ratio (95 % CI)	Adjusted Odds ratio (95 % CI)
Ever asked by patients in the past	4.1 (2.4-7.1)	4.0 (2.2-7.1)	Religion not important	3.8 (2.3-6.2)	3.9 (2.3-6.6)
Attending rather than resident	3.5 (1.9-6.4)	2.8 (1.4-5.5)	Resident rather than attending	2.0 (1.3-3.3)	1.9 (1.1-3.3)
Religion not important	1.6 (1.0-2.8)	1.7 (0.9-3.0)	White	0.7 (0.4-1.1)	0.7 (0.4-1.3)
White	2.3 (1.3-3.8)	1.2 (0.6-2.2)	Catholic	0.4 (0.2-0.7)	0.5 (0.3-1.0)
Muslim	0.2 (0.1-0.6)	0.2 (0.1-0.6)			

capable patients regarding interventions at the end of life, clinical experience, measured several different ways, was a determinant of the willingness of physicians to comply with all legal requests. While willingness to withhold intubation, to extubate, and to give increasingly higher doses of narcotics was high in the overall study cohort, a significantly greater proportion of attendings compared to residents was willing to perform these requests. In contrast, a significantly higher proportion of residents compared to attendings was willing to give a lethal injection if legal, although this proportion comprised a minority of participants. After adjustment for sociodemographic differences, level of training remained a significant influence on both willingness to extubate and willingness to give a lethal injection if legal. In addition to attending versus resident status, having been previously asked by a patient was a second measure of clinical experience associated with willingness to extubate. Moreover, the proportion of physicians willing to extubate increased across years since graduation, with the greatest differences occurring across the residency years, although willingness decreased among physicians with the greatest length of time since graduation. When attendings were asked directly about influences on their willingness to extubate and to give increasingly higher doses of narcotics, most cited reasons related to their clinical experiences.

To our knowledge, the effect of clinical experience on physicians' willingness to comply with these requests has not been demonstrated for such a broad range of scenarios. The recent study that found a higher proportion of residents compared to attendings willing to perform euthanasia if it were legal¹¹ supports our findings, except that in their study the difference did not remain after adjusting for other

characteristics, perhaps because their study involved a smaller number of residents. In contrast, the study conducted over two decades ago that found no differences between the attitudes of attendings and residents across a number of scenarios² likely represents a period characterized by less consensus about the ethical acceptability of various requests.¹²⁻¹⁴ Thus, our study provides a meaningful addition to these prior studies by assessing the attitudes of contemporary residents and attendings across a spectrum of patient requests involving different ethical considerations and by examining the effects of clinical experience on attitudes in a variety of ways. In addition to demonstrating the differences between residents and attendings, our findings also showed that the attendings who were furthest from their training were less likely to be willing to extubate than attendings with fewer years of experience. This finding replicates the results of a prior study that showed a decreased willingness to extubate among older attendings as compared to younger attendings.⁴

The results of our study have implications for patient care and resident education. It is reassuring that the vast majority of attendings in our study reported that they would comply with patient requests to withhold intubation, to extubate, and to give increasingly higher doses of narcotics for the treatment of pain because these requests are widely considered acceptable.¹⁵⁻¹⁸ Our findings support the notion that the attention paid in recent decades to end-of-life care has achieved a consensus among attendings regarding the appropriateness of both withholding and withdrawing life-sustaining treatment among patients with terminal illness.¹⁹⁻²² The relatively greater unwillingness of the most experienced attendings in our study to extubate compared to their younger counterparts may reflect the attitudes of

Table 5. Comparison of Attendings and Residents, Stratified by Years Since Graduation, Who were Willing to Extubate and to Give a Lethal Injection if Legal

Request	Residents			Attendings					
	Years since graduation			Years since graduation					
	1	2	≥3	≤10	11-20	21-30	31-40	>40	p-value
Willing to extubate, n (%)	81 (69)	55 (83)	48 (86)	5 (100)	39 (98)	59 (95)	58 (92)	11 (69)	<0.0001
Willing to give a lethal injection if legal, n (%)	35 (30)	24 (37)	16 (29)	0 (0)	8 (24)	9 (17)	9 (17)	5 (33)	0.1152

physicians who trained when extubation was more controversial.²³

Our findings suggest that substantial changes in attitudes regarding end-of-life practices occur during residency. However, while the proportion of residents willing to extubate increased by increasing postgraduate year, 14 % of the most experienced residents were still unwilling to extubate, raising the question of whether these soon-to-be attendings were adequately prepared to care for patients at the end of life. Given that a substantial proportion of residents feels unprepared to offer good end-of-life care^{24–27} and that formal curricula in end-of-life care are often lacking or deficient in residency programs,^{24,28,29} a potential intervention is to supplement the clinical experiences of physicians in training, including residents and perhaps also medical students, with such curricula.^{25,30–34} Neither of the residency programs included in this study contained a required palliative care rotation, which has the potential to expose physicians in training to various end-of-life scenarios. The use of standardized patients may also prove effective to this end as an opportunity for clinical experiences in a highly didactic environment.^{35,36} A topic for future research includes determining the extent to which dedicated clinical exposure for physicians in training influences attitudes.

One limitation of our study is the confounding relationship between training level and generational influences for the physicians in our study. It is possible, for instance, that a greater proportion of residents than attendings was willing to give a lethal injection if legal because of differences in generational perspectives rather than differences in training level. A future longitudinal study assessing physicians' attitudes from residency into attending years would avoid this confounder. Another limitation is the response rate of attendings (48 %), although available data suggest that respondents were similar to non-respondents (see results). Our inclusion of only Connecticut physicians limits the generalizability of our study but is consistent with our aim to compare physicians in training with physicians post training because participants were drawn from a shared geographic location. Future research might seek to compare residents and attendings across different geographic regions, since practice patterns are known to differ regionally across the United States.²⁵ A final limitation is that participants may respond differently to theoretical as compared to real-life requests.

In conclusion, clinical experience was an important determinant of American physicians' willingness to perform multiple patient requests at the end of life, with substantial changes in attitudes occurring during residency training. Additional research is needed to examine whether dedicated clinical experiences for physicians in training influence attitudes.

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Corresponding Author: John M. Thomas, MD; Department of Medicine, Yale University School of Medicine, 337 Crown Street, New Haven, CT 06511, USA (e-mail: John.thomas@yale.edu).

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