Wolff M, Pohl H, Jacoby L
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Self-reported competencies related to end of life care among residents and attending physicians

Michael L. Wolff[2], Henry S. Pohl [3], Liva H. Jacoby[3]

Corresponding author: Dr Michael L. Wolff mwolff@communitycare.com
Institution: 2. St Peter's Health Partners & Albany Medical College, 3. Albany Medical College
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Abstract

Aims

Research with residents demonstrates perceptions of insufficient skills and comfort with end of life (EOL) care, and there is a paucity of evidence regarding attending physicians' competencies in such care. The purpose of this study was to gain an understanding of self-reported competencies among medical school graduates and to assess the impact of a 3rd year hospice rotation.

Methods

An online survey was sent to 510 medical school alumni assessing experiences, self-rated competencies and preparedness regarding EOL care, and perceptions of the hospice rotation. Analyses explored a range of possible variable associations.

Results

116 surveys were completed. EOL care experience was substantial during undergraduate and residency training. More experience was predictive of greater skills and comfort. Pain management skills were rated lower than other skills. Completion of the hospice rotation was associated with confidence-building and perceptions of preparedness. Attending physicians did not report stronger skills than residents. There was strong support for training in EOL care.

Conclusions

Our findings support previous research about the benefits of EOL care experiences for residents and exposure to such care during undergraduate training, underscoring the importance of well-tailored EOL care education at all levels of training for optimal development of competencies.

Keywords: education, residents. attending physicians, end of life care, competencies

Introduction

The Liaison Committee for Medical Education (LCME) recommends the inclusion of end of life (EOL) care topics in medical school curricula (LCME, 2012) and The Accreditation Council for Graduate Medical Education (ACGME) requires that residents and fellows in a number of specialties (ACGME, 2015). Empirical studies during the past 15 years demonstrate that training varies across medical schools and is often perceived as inadequate by students, house staff, faculty and medical school deans (Aulino and Foley, 2001; Sullivan, Lakoma and Block, 2003; Sullivan, Warren, Lakoma, Liaw, Hwang, and Block, 2004; Hammel, Sullivan, Block and Twycross, 2007; Van Aalst-Cohen, Riggs and Byock, 2008; Billings, Curtis and Engelberg, 2009; Lester, Daroowalla, Harisingani, Sykora, Lolis, Patrick, Feuerman and Berger, 2011; Horowitz, Gramling and Quill, 2014). In a review of regular surveys with US medical schools during the past 40 years, Dickinson (2016) reports a steady increase in a range of EOL offerings -- albeit with notably lower survey response rates over the years. The proportion of graduating medical students who rated their training in EOL care as inadequate has hovered around 20% between 2009 and 2013 (The Association of American Colleges 2013).

The Institute of Medicine's 2014 report on Dying in America lauds the establishment of hospices and palliative medicine as a specialty, but notes insufficient training at all levels as a key problem (IOM, 2014).

Most research on physicians' self-ratings of EOL care competencies pertain to residents and indicates perceptions of inadequacies (Ury, Berkman, Weber, Pignotti & Leipzig, 2003; Billings et al., 2009; Lester et al., 2011;). One study comparing satisfaction with caring for patients at EOL among professional groups and patients' families found house staff to be the least satisfied (Galanos, Morris, Pieper, Poppe-Ries and Steinhauser, 2012).

A study of medicine residents at two large institutions reported clinical experience with EOL care during training as the strongest predictor of self-perceived competence (Billings et al., 2009) These results support earlier evidence for house staff as well as for medical students (Fischer, Gozansky, Kunter, Chomiak, and Kramer, 2003; Ury et al. 2003; Ratanawongsa, Teherani and Hauer, 2005; Yacht, Suglia and Orlander, 2006; Anderson, Williams, Bost and Barnard, 2008; Wechter, O'Gorman, Singh, Spanos and Daly, 2015).

Other research with house staff demonstrates particular discomfort with providing EOL care and inadequate skills in symptom management and communication (Clark et al. 2003; Ury et al. 2003; von Gunten et al. 2003; Michelson, Ryan, Jovanovic and Frader, 2009; Kawaguchi, Mirza, Nissim and Ridley, 2016).

In 2006, a one week required 3rd year hospice rotation was implemented at Albany Medical College (AMC) as part of the internal medicine clerkship. A qualitative analysis of students' narratives about their learning experiences indicated benefits pertaining to pain management methods, the workings of interdisciplinary teams, the meaning and alleviation of suffering, and confronting one's own mortality (Jacoby, Beehler and Balint, 2011).

There is a paucity of research on attending physicians' perceptions of competencies related to EOL care. This signifies a notable knowledge gap and precludes comparisons with house staff. An early survey of 231 physicians in Connecticut showed that 75% felt knowledgeable enough to discuss hospice care with patients and families (Bradley et al., 2002). Yet, between one-fifth and one-quarter had discussed hospice care or made referrals for less than one fourth of their terminally ill patients

House staff have key responsibilities as caregivers at the bedside and as role models to and teachers of students

acquiring competencies for good doctoring. Thus, there is a need to further examine and understand residents' self-perceived skills, including level of comfort and attitudes regarding EOL care and to evaluate the effects of their clinical experiences over time. Similarly, there is now a critical need to gain more evidence about the same elements among attending physicians as care providers to an aging population and as mentors to trainees.

The current study was undertaken to help fill these knowledge gaps and to help guide efforts to standardize EOL curricula for optimal educational interventions at all levels.

The aims of the study were to describe house staff' and attending physicians' 1) clinical experiences and perceived preparedness with EOL care, 2) self-rated competencies related to providing EOL care, and 3) perceived impact of a 3rd year hospice rotation. The fourth aim was to explore factors associated with perceived competencies and preparedness.

Methods

Design

We conducted a cross-sectional survey of alumni from one medical school between one and seven years subsequent to their graduation.

The Alumni Office at AMC distributed an online survey in two waves between February, 2014 and February, 2015 to 510 alumni of 2007 through 2013. Survey Monkey (Palo Alto, CA) was employed as means of survey administration. Respondents returned their surveys anonymously to the Alumni Office. Consent was implied by voluntary participation. Approval for the study was obtained from the Institutional Review Board at AMC.

Instrument

We developed the survey based on instruments with established validity and reliability (Billings et al.2009; von Gunten et al. 2012; Pan et al. 2005. In our survey, end of life care was defined as "caring for patients (and their families) who have a terminal illness with a life expectancy of less than one year and managing their care during the last few months, weeks or days of life."

Study measures

Survey items addressed extent of clinical experiences and perceived preparedness with EOL care during medical school and residency, views of the 3rd year hospice rotation, and post-graduate formal training in palliative care. Perceived competence was measured in three main domains: knowledge, clinical skills, communication skills, and attitudes. Other measures were comfort and confidence. (See Appendix for specific measures).

All scales had fixed responses using 1-3 or 1-5 point Likert formats. Conversion of scores were made where appropriate in the analysis. The survey ended with four open-ended questions regarding perceptions of education, training and experiences with EOL care.

Data analysis

We derived descriptive results from SurveyMonkey (SurveyMonkey Inc., Palo Alto, CA) and used Statwing (Statwing Inc., San Francisco, CA) for statistical analysis. To test for statistical significance, we used Chi-square, t-

test, ANOVA and Pearson correlation as appropriate to the particular level of data. Mean composite scores were calculated for scales measuring comfort, EOL care preparedness, and clinical and communication skills. Background characteristics and extent of clinical EOL care experiences, including completion of hospice rotation, were examined as independent variables in relation to perceived skills, preparedness and comfort. Attitude variables were treated as possible predictors as well as outcomes and were examined in relation to clinical experience, preparedness, skills and comfort.

Results

One hundred sixteen individuals participated in the survey with a response rate of 22.0%. Almost two-thirds (63.5%) were women and a slight majority was over the age of 30. A little less than half of the sample (46.5%) were interns or residents and the remainder fellows or attending physicians. The majority (42.3%) reported primary care as their specialty, with pediatrics as the most common (15.5%). Slightly more than three quarters (77.4%) were training or practicing at a major teaching hospital in urban areas.

Extent of EOL care experience and training

Forty-six respondents (39.7%) reported having had great deal of EOL care experiences during their undergraduate training, while a small majority of 56.0% said they had had some experience, followed by 4.3% stating very little.

Ninety individuals (77.6%) completed the one-week hospice rotation during their third year. The remaining 26 individuals undertook their medicine clerkship in a hospital at a considerable distance from Albany excusing them from the rotation.

With respect to extent of EOL care experiences during residency, 43.5% reported a great deal, while a little over one third (36.8%) stated some and 19.3% responded very little.

Slightly over one third (35.3%) reported having had some type of formal training in EOL care after graduation. One third (34.1%) had devoted more than 20 hours to such training.

Self-assessed skills in and knowledge of EOL care

Table 1 shows perceived gains in selected skills and knowledge areas during medical school (1-5 scale). Among clinical skills/knowledge, knowing when to refer patients to hospice was rated the highest, while the area with the lowest rating was for treating neuropathic vs. somatic pain. Whereas close to 70% strongly agreed or agreed they had knowledge about when to make hospice referrals, only 31.1% responded the same regarding treating neuropathic vs somatic pain. (For all skill items, see Appendix)

Two other items pertaining to the ability to treat pain: evaluating the tolerance to opioids and managing pain showed comparably low means - both at 3.1. Assessing and managing patients' depression was ranked the same. The aggregate mean for clinical skills was 3.2.

Related to communications skills about aspects associated with death and dying, the ability to deliver bad news showed the highest mean (4.1). Half of the group (50.0%) strongly agreed that they felt prepared in this area. Assisting patients and families with reconciliation and saying good-bye, and with bereavement were rated the lowest, each with a mean of 3.3. Means for other communication skills, such as letting patients know they are dying, talking with them about their fears, and discussing withdrawal of treatment ranged between 3.4 and 3.7. The aggregate

mean was 3.6.

Table 1. Self-assessment of EOL care skills and knowledge gained in medical school.

Skills & Knowledge	Strongly Disagree/Disagree n (%)	Neutral n (%)	Strongly Agree/Agree n (%)	Mean (SD)
Clinical				
When to refer pts to hospice	9 (7.8)	26 (22.4)	81 (69.8)	3.8 (0.90)
Assess tolerance to opioids	34 (29.3)	38 (32.8)	37 (31.9)	3.1 (1.10)
Manage pain	34 (29.3)	31 (26.7)	51 (44.1)	3.1 (1.13)
Treat neuropathic vs somatic pain	42 (36.5)	37 (32.2)	36 (31.3)	2.9 (1.11)
Aggregate Mean				**3.2** (0.87)
Communication				
Give "bad news"	1 (0.7)	11 (9.5)	44 (37.9)	4.3 (0.72)
Respond to requests to forgo life-sustaining treatments	5 (4.3)	25 (21.5)	56 (48.3)	3.7 (0.99)
Handle conflicts re: DNR and living wills	9 (7.9)	37 (34.5)	40 (35.1)	3.4 (1.10)
Help families during bereavement	6 (5.1)	43 (37.1)	43 (37.1)	3.3 (0.96)
Aggregate Mean				**3.6** (0.8)

Assessment of hospice experience

Comfort and confidence

The large majority (83.3%) of the ninety individuals who completed the third year hospice rotation strongly agreed or agreed that the experience had been useful in gaining comfort and confidence caring for terminally ill patients and their families. The mean for this scale was 4.3. These numbers reflect the preponderance of positive comments to open-ended questions, such as "…it was an extremely valuable experience which helped me find the words to use with patients and families and understand the medical system with respect to end of life care,"..."it really changed the way I look at things and it taught me about the options and service available for patients and families," and "…extremely helpful for dealing with death and the issues surrounding it."

Skills in inter-professional collaboration

Close to 70% strongly agreed or agreed that the hospice experience had enhanced their ability to work with nurses regarding the management of patients' pain. Similarly, overwhelmingly positive responses were given with respect to working with social work and/or chaplaincy staff. Scale means were 3.9 and 4.0, respectively.

Perceived overall preparedness in EOL care

Almost half (48.3%) of the sample strongly agreed or agreed that their undergraduate medical education and training had prepared them well to care for terminally ill patients, whereas 18.1% responded negatively to this statement. The scale mean was 3.4. With respect to residency, three quarters strongly agreed or agreed that they had been or would be well prepared for EOL care at the end of their residencies, while the proportion who strongly disagreed or disagreed was 9.5%. With a mean of 4.0, the perception of preparedness was higher for residency than for medical school.

Assessment of comfort related to EOL care

General comfort

Asked about level of comfort taking care of a dying patient as any other patient, a little over one third (34.2%) gave a neutral response, while 17.5% strongly agreed and 6.1% strongly disagreed. The scale had a mean of 3.3. (Table 2)

Comfort with pain treatment

Two thirds of participants strongly disagreed or disagreed with the statement being "uncomfortable **not** using IVs for most patients in their last days of life." The scale had a mean of 2.2 with the majority thus expressing comfort withholding intravenous fluids from a terminally ill patient.

A small majority of 53.9% strongly disagreed with the notion of being uncomfortable using high doses of narcotics for pain relief, if necessary, while 1.7% strongly agreed with this statement. The mean on this scale was 1.7.

Table 2. Comfort and attitudes related to EOL care.

Comfort	Strongly Disagree/Disagree n (%)	Neutral n (%)	Strongly Agree/Agree n (%)	Mean (SD)
As comfortable caring for dying patients as other patients	28 (24.5)	39 (34.2)	47 (41.2)	3.3 (1.14)
Uncomfortable **not** using IVs for patients in their last days of life.	76 (66.7)	20 (17.5)	18 15.8)	2.2 (1.16)
Uncomfortable using high doses of narcotics for EOL patients.	99 (85.2)	8 (6.9)	9 (7.8)	1.7 (0.96)
Attitudes				
Working in a hospice would be undesirable	60 (52.1)	28 (24.4)	27 (23.5)	2.6 (1.18)
Exposure to & training EOL care is important.	4 (3.5)	5 (4.4)	106 (92.2)	4.6 (0.83)

Attitudes related toward EOL care

Slightly over half of the sample (52.1%) responded negatively (21.7% strongly disagreed) about the notion that it would be undesirable to work with terminally ill patients in a hospice, compared to 23.5% who responded affirmatively (6.1% strongly agreed). The mean was 2.6 (reflects no conversion of scale scores). With a scale mean of 4.6 regarding the importance of exposure to and training in EOL care, the overwhelming majority (92.2%) agreed or strongly agreed.

Analysis

Background characteristics

Gender, year of graduation, and practice/training site were not significantly related to reported extent of EOL experiences during medical school or residency, preparedness to provide EOL care, self-rated skills, attitudes, or comfort. Older physicians, compared to younger physicians, tended to state that working with dying patients in hospice would be undesirable (p= .02). (Table 3 depicts selected variable relationships.)

Family Medicine residents and attending physicians were significantly more likely to report clinical EOL care experiences during residency (p< .01) and to have had formal palliative care training than those in other specialties (p< .01). Family Medicine practitioners also more often supported the importance of exposure and training in EOL care (p=.02). No significant associations were found between specialty and measures of self-reported EOL care skills or comfort.

EOL care experiences during medical school

A greater extent of pre-clinical and clinical EOL care experiences during undergraduate training was associated with higher ratings of clinical and communication skills. (p= .01 for each aggregate measure). More EOL care experience at the undergraduate level was also related to feeling as comfortable caring for a dying patient as any other patient (p< .01).

Impact of hospice rotation

Of the 90 individuals who completed the hospice rotation, 42.7% stated they had had great deal of EOL care experience during medical school, while 55.1% reported some experience. Compared to those not having done the rotation, they were significantly more likely to feel well prepared with EOL care during undergraduate training. (p= .03). They were also more likely to report having gained skills giving bad news (p= .03), managing pain for dying patients (p= .03), and determining when to refer patients to hospice care (p<. 01). The two groups did not differ on composite skill scores, comfort measures or attitudes.

Perceiving that the hospice rotation had been useful for confidence in EOL care was significantly related to agreement with having been or becoming well prepared for EOL care at the end of residency (p= .04).

EOL care experiences during residency

A greater extent of EOL care experiences during residency was significantly related to the belief that exposure to and training in EOL care is important (p= .01), and being as comfortable caring for a dying patient as any other patient (p= .03).

Attitudes

Agreeing that exposure to and training in EOL care is important was positively associated with aggregate clinical and communication skills, respectively (p< .01 for each measure), and with the perception of having been and expecting to be well prepared to provide EOL care at completion of residency (p< .01). The attitude that "working with terminally ill patients in a hospice would be undesirable" was not found to be related to either set of self-rated skills. There were no significant relationships between attitudes and comfort measures.

Preparedness in EOL care

Those reporting they had been or expected to become well prepared to provide EOL care at the end of residency were significantly less likely than others to feel uncomfortable using high doses of narcotics to treat pain (p< .01), but did not differ on other comfort measures. An overall higher level of perceived preparedness to provide EOL care (combined scores for undergraduate and graduate training) was associated with stronger beliefs in the importance of exposure to and training in such care (p< .01).

Formal training in palliative medicine was not found to be significantly associated with any competencies, attitudes or comfort.

Table 3. Analysis of selected variable relationships

Variables			
Extent of undergraduate EOL clinical experiences	Clinical skills f* P .42 <.01+	Communication skills f* P .43 <.01+	
Completion of hospice rotation	Well prepared with EOL care during undergraduate training d* c.i.** P .5 -.9 to -.04 .03+	Give "bad news" d* c.i.** P .5 -.8 to -.05 .02+	Manage pain d* c.i.** P .03 -1.1 to -.08 .03+
Gained confidence & comfort from hospice rotation	Was/will be well prepared for EOL care at end of residency r*** c.i.** P .2 .01 to .4 .04+		
Was well prepared for EOL during under-graduate education & training	Was/will be well prepared for EOL care at end of residency r*** c.i.** P .5 .4 to .6 <.001+		

* Cohen's f; Cohen's d

** 95% confidence interval

***Pearson correlation

+ Statistically significant

Discussion

While it was more common to have a great deal of EOL care experience during graduate than undergraduate training, results show notable amounts of such experiences during medical school as well. Experiences during residency were particularly prominent among Family Medicine house staff and attending physicians. With regard to the relatively great extent of reported exposure to EOL care during medical school, we believe it reasonable to attribute this to the 3rd year hospice rotation. However, the finding that less than half (42.7%) of those completing the rotation reported having had a great deal of EOL experience seemed surprising. Reviewing comments on the rotation revealed that many respondents noted one week being an insufficient amount of time.

Notably, experience with hospice care during undergraduate training appeared to have had a particular impact on knowledge and skills related to delivering bad news and assessing patients for hospice referral. Other reported benefits of the hospice rotation related to gaining confidence in inter-professional collaboration - an important focus in current medical education.

Consistent with other research on the benefits of early opportunities for trainees to learn about end of life care; Orlander, Fincke, Hermanns and Johnson, 2002; Ratanawongsa et al. 2005; Billings et al. 2009; Galanos et al. 2012; Wechter et al. 2015), our findings indicate that greater undergraduate exposure to EOL care was associated with stronger communication skills, greater comfort with caring for dying patients, and positive attitudes about such care. Moreover, feeling well prepared for EOL care during undergraduate training was strongly predictive of the same perceptions for graduate training.

With regard to comfort providing pain relief for dying patients, there was considerable support for high doses of narcotics and for omitting the use of IVs. In general, however, respondents rated their knowledge and skills related to pain management as relatively low which supports the results by Kawaguchi et al. (2016). These findings were reinforced in recurring open-ended comments by survey participants stressing the desire for more opportunities to gain such skills, highlighting the need for focus on this area of training. The benefits of such training on residents' knowledge and confidence with palliative care skills was demonstrated recently in an intervention study by von Gunten et al. (2016).

Respondents' overwhelming support for the importance of training and exposure to EOL care was notable. Of significance also was the finding that younger respondents tended to express stronger support for working in a hospice setting. These findings warrant longitudinal studies to examine attitude formation and its relationship to EOL education on the one hand, and to proficiency development, comfort and, ultimately, to performance on the other.

Our study is limited by the inclusion of one medical school and a relatively low response rate indicating the possibility for response bias and lack of representativeness of the sample. Thus, the generalizability of study results is limited. Questions about past experiences introduces the problem of recall bias and inaccuracies and subjective assessments of competencies reflect only partial aspects of skills and knowledge. However, attitudes and perceived comfort and confidence constitute essential subjective measures.

Conclusions

In summary, our findings reveal significant exposure to EOL care among respondents during undergraduate and graduate education and perceived benefits of undergraduate experiences, including exposure to hospice care, as

relates to acquisition of many essential skills, comfort and confidence extending into residency training. Importantly, our results point to the area of pain management, in particular, as a central focus for enhanced education and training. The overall support expressed for training in EOL care constitutes a positive basis for educational interventions.

Furthermore, the findings fill a gap in the current literature about attending physicians' perspectives on EOL care.

Despite a considerable growth in the number of palliative care programs during recent decades, the insufficient number of appropriately trained professionals remains a barrier to meet the demands of an increasing geriatric population (Hughes and Smith, 2014; von Gunten, 2015). There is a clear need to continue the expansion of robust EOL care training opportunities.

To meet the continuing needs for quality EOL care, experts propose a new paradigm whereby palliative care concepts become integrated into primary care and all specialties providing care to chronically and seriously ill patients (Weissman, 2012; Horowitz et al. 2014). The responsibilities of house staff as learners, teachers, role models, and caregivers make them, together with mentors and leaders in medical education, crucial participants in implementing such an expanded paradigm. This will require sustained efforts in research and in the development of standardized curricula to make training opportunities available not only for residents but for fellows and attending physicians in an expanded array of specialties, ultimately generating a critical mass to educate medical students.

Take Home Messages

· Early clinical exposure to end of life (EOL) care is predictive of many self-perceived competences and level of preparedness among residents and attending physicians.

· Feeling well prepared to provide EOL care has implications for positive attitudes regarding such care and greater comfort with important aspects of pain management.

· Educational emphasis on pain management in EOL care is essential.

· Longitudinal research is needed to examine the progression of EOL care competencies.

Notes On Contributors

Dr. Wolff is Chief Physician for Continuing Care, St Peter's Health Partners, Albany, New York, Senior Fellow, Alden March Bioethics Institute and Clinical Associate Professor of Medicine, Department of Medicine, Albany Medical College, Albany, New York.

Dr. Pohl is Vice Dean for Academic Administration and Associate Professor of Medicine, Department of Medicine, Albany Medical College, Albany, New York.

Dr. Jacoby is retired Professor of Medicine, Department of Medicine and Alden March Bioethics Institute, Albany Medical College, Albany, New York.

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Appendices

Competency measures

Knowledge and clinical skills: when to refer patients to hospice; assess tolerance to opioids; manage pain; treat neuropathic versus somatic pain; assess and manage depression; and teach families to provide home care;

Communication skills: give bad news; respond to requests to forgo life-sustaining treatments; talk to patients about thoughts and fears about dying; discuss treatment withdrawal; handle conflicts regarding DNR and living wills; help with reconciliation and saying goodbye;

Attitudes: level of importance regarding exposure to and training in the care of terminally ill patients, and desirability of working with terminally ill patients in a hospice.

Comfort measures: levels of comfort not using IVs for most terminally ill patients; caring for a dying patient like any other patient; and using high doses of narcotics for pain relief for terminally ill patients.

Confidence measure: perceived preparedness with EOL care.

Declarations

The author has declared that there are no conflicts of interest.