How Using Generative Learning Strategies Improved Medical Student Self-Competency in End-of-Life Care

Sandra Marquez Hall, PhD; Janet Lieto, DO, FACOFP; Roy Martin, MDiv, DMin

ABSTRACT

During a mandatory fourth-year core geriatric medicine rotation at our medical school, we discovered that our medical students were struggling with end-of-life (EOL) issues both personally and professionally. We implemented curriculum changes to assist them in developing emotional awareness about death and dying, and to help develop their ability to respond personally and professionally to patients and their families during EOL experiences.

In our new curriculum, a seasoned ethicist at our university conducts educational sessions addressing EOL issues. Students complete self-study content before the first session, in which they have a discussion about their own experience with death and dying. Our ethicist facilitates these discussions with a small group (10-14 medical students), allowing the students to explore their own experiences, case studies, and others’ experiences in EOL. Before the second session, students prepare a self-reflective narrative essay about an EOL experience. Our facilitator, by using a generative learning strategy, has a rich interaction that attempts to connect previous experiences, present training, and how the student physicians may need to adjust behaviors in order to be advocates for their patients in EOL situations in the future. Students complete a pre- and post-self-assessment in the didactic. Results show significant improvement in their perceived competence in EOL issues. In addition, the students’ self-reflection essays reveal intriguing themes for future study.

INTRODUCTION

According to a 2015 Institute of Medicine report, exposure to end-of-life (EOL) care has improved in the area of health professionals’ education, although serious problems still remain and need to be addressed. The report cited one such problem as “developing clinicians' ability to talk effectively to patients about dying and teaching them to take the time to truly listen to patients’ concerns, values, and goals.” A separate 40-year study revealed an increase in medical school curriculum addressing palliative medicine and issues related to death and dying. The latest statistics show that more than 90% of medical students are exposed to some type of program on death and dying, palliative care, and geriatrics. The type of exposure and amount of education varies greatly from program to program. We believe that our students’ lack of formal exposure to EOL curriculum is similar to medical education around the country.

This narrative reports our attempt to increase our students’ exposure to EOL issues during a mandatory fourth-year geriatric rotation.

Medical students must become familiar with these issues and will need tools to increase their ability to feel competent and comfortable in discussing EOL topics. Exposure to EOL or palliative issues on clinical rotation is one way for students to see how they must incorporate discussion in the care of their patients. Many physicians do not like to discuss EOL topics because of their lack of exposure to EOL training, their confidence with the topic, or feeling uncomfortable about death and dying. Medical students similarly struggle with EOL issues and would benefit from a curriculum that addresses the psychosocial management aspects. Some students have never experienced a personal loss and do not have a foundation to process what they may be thinking or feeling. Studies have shown that during clerkships, students are exposed to professional behaviors that are less direct and more informal by observing faculty, residents, and attending physicians as these professionals demonstrate the skills, attitudes, and behaviors of their clinical roles. In one study, students reported that in clerkships EOL issues were minimally discussed and that instruction and role modeling were inconsistent. Adding an EOL component to a geriatric clerkship allowed us to address these concerns.

CLERKSHIP CURRICULUM

The medical curriculum at our campus includes a mandatory fourth-year geriatric clerkship.

Clinical clerkships promote and support students in developing clinical competence with an emphasis on the core competencies beyond medical knowledge alone. Our clerkship provides opportunities for students to experience health and wellness counseling, develop interpersonal communication skills, improve professionalism, and engage in practice-based learning. Goals in the geriatric clerkship provide a focus on supervised, high-quality opportunities where fourth-year students are encouraged to transform their declarative medical knowledge and basic clinical skills into procedural clinical competence.

The clinical clerkship is designed to enable students to achieve competence as graduate medical students. The objectives of the clerkship curriculum are drawn from the American Association of Colleges of Osteopathic Medicine for medical students and the Core Entrustable Professional Activities for physicians entering residency. These are the skills

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and behaviors expected of first-year residents on day one of their residencies, and concerted effort is made to ensure that students have opportunities to practice these skills and behaviors on the clerkship rotation.

The goal of the geriatric clerkship curriculum is to provide a foundation for competent and compassionate care of older adults. This competency includes attitudes, knowledge, and skills required to care for older adults. During the rotation, students are exposed to a variety of experiences that include ambulatory practice, nursing facilities, assisted living centers, home visits, and hospice. Knowledge about geriatrics is gained through self-study, case reviews, clinical case discussions, and working in ambulatory care clinics, long-term care facilities, and inpatient hospice units. At the clinical sites, students examine their own attitudes toward aging, disability, and death. The goal is to form students who are compassionate to caregivers and appreciate the need for functional status assessment of individual patients rather than focusing on disease alone.

Each rotation spans a four-week time frame, and students are assigned to the various rotation sites in two-week blocks. At the end of each two-week block they are reassigned to another setting to maximize exposure. Because of time and space limitations, not all students will have exposure to every two-week rotation site. The mandatory components for all students in the geriatric clerkship are the didactics, group and self-study sessions that cover grief and loss, geriatric syndromes, journal club, board review, Meals on Wheels, and a health literacy community project.

As part of the normal assessment and quality improvement processes for the clerkship, we administer a final examination and student evaluation of the clerkship experience at the end of the rotation. In addition, a pre- and post-self-assessment is regularly given, in which students examine their self-competence in geriatrics before and after exposure to the core geriatric clerkship. The assessments ask students to rate their perceived ability in multiple areas (Figure 1). The category of EOL care was consistently receiving the lowest score from assessment respondents. In 2010, at our annual clerkship end-of-year meeting, participating faculty discussed these results and agreed on a curriculum modification in the form of adding a didactic on EOL issues to address the low score reported by students.

UNDERSTANDING GENERATIVE LEARNING STRATEGIES

Generative strategies are a form of active learning in which students integrate presented information with existing knowledge and experience. Generative strategies promote meaningful learning through writing, summarizing, reflecting, questioning, and self-regulating. Witrock argued that learning is a generative process in which the learner must actively generate relationships among ideas to enable deeper learning and facilitate the transfer of knowledge to application. Generative instructional strategies are believed to be an effective way to promote student learning by providing a method that encourages the transfer of knowledge by integrating new material with an existing experience to build external connections.

The blend of new information with past experience serves as a prompt for students to put feelings into their own words and thereby promote deeper understanding. The goal of using this approach in our clerkship is to lead the students examine their self-competence in geriatrics before and after exposure to the core geriatric clerkship. The assessments ask students to rate their perceived ability in multiple areas (Figure 1). The category of EOL care was consistently receiving the lowest score from assessment respondents. In 2010, at our annual clerkship end-of-year meeting, participating faculty discussed these results and agreed on a curriculum modification in the form of adding a didactic on EOL issues to address the low score reported by students.

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Helping students to organize emotionally charged information and experiences through the use of structured strategies (note taking, summarizing, discussion, and reflective writing) provides an opportunity for deep learning and development of a mental model. Active learning strategies such as these can be combined with questioning, self-explanations, reflection, and problem solving to help students develop into self-regulated learners with the ability to process multiple sources of information into a meaningful context. Learning strategies can take many forms, but all involve cognitive processing at the time that the educational content is presented.

OUR INSTRUCTIONAL INTERVENTION

Although not all students will witness a patient death, our geriatric clerkship exposes them to aging patients and issues in palliative care. One method of addressing EOL topics is to have students compose reflective essays about death, dying, and grief. Studies show that both active and reflective learning are beneficial in helping students recognize the impact EOL issues have on them personally, and these reflections help them become more comfortable in dealing with the death and dying of a patient.12,13

Excerpts and Faculty Comments from Student Essays

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<th>Essay 1:</th>
<th>Essay 4:</th>
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<td>Student 1 wrote about how her grandfather’s death in an intensive care unit in China, where “everything was done” except for any conversation about end-of-life, emotions, or grieving, left her with this self-realization: “And being a physician is so much more than treating illnesses. It is also our duty to guide patients and families through this difficult process, to initiate conversations that are easily overlooked or denied, and, most importantly, to be the compassionate and resourceful stronghold for patients and their families at this crucial time.”</td>
<td>Student 4 wrote about his grandmother’s long course with Alzheimer disease. She declined over 12 years, with the last 3 being spent in a nursing home. “As the family is gathered at the nursing home, I notice the caring and thoughtfulness of the health care staff as they attend the tiniest of requests. They go through this quite often, I imagine, but for me this is the first time. Whether it was a chaplain offering a prayer or a nurse asking if I needed a glass of water, these people understood what I was going through and I was so grateful for that. As a medical student, I made a note that this is how I wanted to make people feel. To give them the smallest amount of comfort, whether it made a difference or not, this is what I owe to my patients and their families.”</td>
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<th>Essay 2:</th>
<th>Essay 5:</th>
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<td>Student 2 wrote, “… I find it interesting that the physician in this case is so uneasy with the idea of his patient’s death. We as physicians suffer from unwillingness to admit defeat all too often. Why is it that those who learn of, fight, and see death everyday struggle to accept it, when their patients can? Is it ego? Do we look at death as a reflection of our failure?”</td>
<td>Student 5 wrote about his grandfather’s death from lymphoma. As a medical student, his family looked to him for answers about the disease. He could look up facts, but he did not know how to approach his grandfather’s decline, treatment failure, and death. “To be honest, I am thankful for what my grandfather’s death showed me. I am grateful to know what it feels like to have suffered a great loss. As a physician, it would be hard to feel comfortable dealing with end-of-life issues without knowing what a family is actually feeling. While I recognize that people are different, I am certain that I will at least be able to empathize with them in some way because of my own experience. I am not sure if I would be able to do this without the loss of my grandfather.”</td>
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<th>Essay 3:</th>
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<td>Student 3 wrote about her grandmother’s rapid course of amyotrophic lateral sclerosis. The student was in denial about the gravity of her grandmother’s condition, and the family did not openly discuss the situation. “This was difficult for everyone because once she got really bad we had missed the opportunity to just be with her and enjoy what she still could. I think it is very important, and what I have been taught over this past month is how important palliative care is for both the patient and their families. It is a transition that does not have to be abrupt as in the case with my grandma. … I understand now why it is so important to have that all in place before a family member gets sick. My personal example has taught me that it is never too soon to mention these issues to my patients.”</td>
<td>Student 6 wrote about her mother’s death from lung cancer when she was a young girl. “This experience has changed how I look at the medical profession. I used to feel that doctors needed to be intelligent and emotionally distant in order to provide the best possible medical care. … Doctors provide so much more than medical knowledge; they provide hope, freedom, peace, and answers.” She went on to state how her family used humor as a coping mechanism. Once the physicians understood this, the atmosphere changed. “My mom would say a joke, and from then on, doctors would enter the room not with a greeting but with a joke to make my mother smile. Like for my mother, a cure is not always a possible solution. Sometimes communication and compassion is all that can be provided, and for those patients, it may be the only thing they need.”</td>
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for reflection on personal and comparative experiences. It is believed that this method increases an individual’s ability to manage difficult conversations about EOL.10,11 No other changes to the clerkship were made during the time the EOL didactic was implemented.

The didactic sessions in our clerkship curriculum are led by a seasoned ethicist who practiced as a hospital chaplain (DMin degree) for many years before joining the faculty of our medical school. All students attend the small group session as part of the clerkship requirements. The didactic sessions are held at the medical school in a quiet classroom area, where students sit around a large conference table and talk quietly about their experiences. For a description of the goals that guided creation of our EOL didactic, see the Sidebar: End-of-Life Didactic Goals.

Students meet with the ethicist during two educational sessions on death and dying. The first session is at the very beginning of the rotation after their pre-self-assessment. The second session is held in the fourth week of the rotation. Each session is preceded by self-study content and comprises lecture, discussion, reflection, and personal integration of a previous experience with dying. During the sessions, students use their personal or past observations of a death. Listening to others’ EOL stories, writing their personal essay (which is submitted before the second session), and the subsequent discussion about the essays assist students in learning new ways to cope with the difficult conversations that surround death and dying. A sample from the student essays is included in the Sidebar: Excerpts and Faculty Comments from Student Essays. These demonstrate the rich personal perspectives of the students and their engagement in the process. Our work on curricular improvement would benefit from qualitative, in-depth review of all student essays.

We observed that students who have had the opportunity to debrief are more willing to explore their emotional involvement with a patient’s death. In comparison, students who do not have an opportunity to debrief seem to experience emotional concern as inappropriate and prefer detachment as the appropriate behavior in a professional context.16 Summarizing learning strategies are also used during the didactic through the use of note taking, transfer of information, and shared recollection of a personal experience. All these methods represent integrative processing and prepare the students to write their reflective writing assignment.17,18 A description of the two 75-minute sessions on death and dying are described in the Sidebar: End-of-Life Didactic Sessions.

**End-of-Life Didactic Sessions**

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<th>Session One: 75 minutes</th>
<th>Session Two: 75 minutes</th>
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<td><strong>Introduction:</strong> Facilitator introduces the topic, then frames the ethical challenges and emotional stress experienced by patients, families, and practitioners as they face end-of-life decisions</td>
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<td><strong>End-of-life case studies:</strong> Provided as part of the syllabus, scenarios include case examples of nursing home, hospital, in-home, and emergency room settings (with patient alert or with patient unconscious)</td>
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<td><strong>Grief resources:</strong> A list of grief resources are included in the syllabus for the didactic sessions (syllabus available upon request)</td>
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<td><strong>General discussion:</strong> Instructor-led general discussion about death, ethical dilemmas, and emotional stress experiences on death and dying</td>
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<td><strong>Personal sharing:</strong> Reflection of a personal experience</td>
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<td><strong>Assignment:</strong> Each student writes and submits before the second session an essay recalling a scenario that describes a physician response to following a patient through the patient’s dying</td>
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<td><strong>Preparation:</strong> Depending on the student’s own experience, select one of three topics: 1) create a fictional narrative on the basis of the case studies they have read; 2) describe an actual experience of a patient’s death that was observed over time; or 3) write about a familial death and the dynamics of the family’s experience</td>
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<td><strong>Essay presentation:</strong> Students present their description of an imagined or actual experience in coping with the death of a patient and the feelings of the family’s grief as well as their own feelings. Students are also asked to summarize their experience and describe subsequent responses by the patient and the patient’s family, and their observations of the physician</td>
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<td><strong>Reflection:</strong> Students express their understanding of death, loss, and grief in a small group discussion</td>
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<td><strong>Facilitator wrap-up:</strong> Discussion about death, ethical dilemmas, and emotional stress experienced in death and dying</td>
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**IMPACT OF THE INSTRUCTIONAL STRATEGY**

Within the pre- and post-self-assessment administered during every clerkship, students examine their self-competence in geriatrics before and after exposure to the core geriatric clerkship. We ask the students to rate their perceived ability in 9 competency areas, and in this narrative report we focus on the EOL competency (Figure 1, item 7). The survey uses a 4-point Likert scale with 1 = No Ability, 2 = Some Ability, 3 = Significant Ability, and 4 = Complete Ability (Figure 1). We collected the data for each rotation during a 5-year period (2011-2016). All students (N = 1024) who participated in the didactic completed surveys. We imported data into SAS Version 9.3 (SAS Institute, Cary, NC) for analysis. The mean response was computed along with a paired t-test for significance for a score of 17.08, p = 0.0001. The overall mean score for the combined pretest data was 2.0, and posttest data was 3.01. These final results show a statistically significant improvement of student self-assessment of their competency in EOL issues. The core geriatric clerkship didactic on EOL increased levels of self-competence in medical students consistently over 5 years.
CONCLUSION
By making the EOL curriculum a mandatory component within our clerkship, students are required to explore the difficult topic of patients’ death and dying. The didactic helps medical students understand that they will eventually need to participate in EOL discussions as part of their professional role. Curricular enhancements that use learning strategies integrating a student’s shared recollection of a personal EOL experience, along with group discussion, reflection, narrative essays, and communication, build deeper learning on the sensitive topic of death and dying.

The ability to speak openly about an EOL experience enables students to explore how these issues may affect their future training and practice. We hypothesize that this activity helps to normalize EOL issues and allows individual students to develop a personal plan or strategy for the future in a safe setting. The small group discussion, reflection, empathetic listening, and communication sessions enable students to self-reflect and to understand how their ability to manage a personal EOL experience will be integral to their roles as physicians. We anticipate that this instructional intervention will continue to build student self-efficacy in their ability to communicate about death and dying as they transition into residency and their future careers.

Disclosure Statement
The author(s) have no conflicts of interest to disclose.

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How to Cite this Article

References

Time to Teach Compassion
I have come to believe that the time and place to teach compassion are the time and place in which all of the rest of medicine is taught.

— Jerome Lowenstein, MD, American nephrologist