Integrating Geriatrics into Medical School: Student Journaling as an Innovative Strategy for Evaluating Curriculum

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Purpose of the study: The Alpert Medical School of Brown University began to integrate geriatrics content into all preclerkship courses and key clerkship cases as part of a major medical school curriculum redesign in 2006. This study evaluates students’ responses to geriatrics integration within the curriculum using journals kept by volunteer preclerkship and clerkship students between 2007 and 2010. The journals were used to assess the quality of curricular integration of geriatrics didactic and clinical content, to gather information for shaping the evolving curriculum, and to elicit students’ responses about their professional development and caring for older adults. Design and Methods: Student “journalers” wrote narrative reactions to and evaluations of aging-related content and exposure to older patients in response to written semistructured questions. An interdisciplinary team (including a health services researcher, gerontologist, medical anthropologist, and 2 geriatricians) used qualitative analysis to code the 405 journal entries. Results: The team identified 10 themes within the following domains: (a) evaluation of efforts to integrate geriatrics within the medical school curriculum, (b) recognition and application of geriatrics principles, (c) student attitudes and cultural experiences regarding aging and the care of older patients, and (d) personal and professional development over time. Themes emerging within these domains reflect the effectiveness of geriatrics integration within the new curriculum as well as students’ professional development. Implications: Journaling provides a novel and effective method for capturing medical students’ responses to curricular content in real time, allowing for midcourse corrections and identifying key components of their professional development.

Key Words: Qualitative evaluation, Geriatrics education, Narratives, Professional development

I hate that my grandmother’s last hospital visit was characterized by doctors who didn’t listen . . . this introspective process has helped me to see the real importance of communication and understanding. I hope the geriatric integration helps Brown produce the type of physicians that I would want caring for my grandmother. (MS1 student)

In response to population aging, influential organizations, including the Institute of Medicine, the National Institute on Aging, and the American Geriatrics Society, have summoned medical schools to prepare physicians to meet the challenges of caring for older adults (Anderson, 2004; Association of Directors of Geriatric Academic Programs, 2003; “Caring for older Americans: The future of geriatric medicine,” 2005; Committee on the Future Health Care Workforce for Older Americans, 2008). Medical schools have responded primarily
by adding elective geriatrics courses or a voluntary geriatrics track (Bragg, 2007). In contrast, the Alpert Medical School of Brown University, with support from the Donald W. Reynolds Foundation, has integrated geriatrics into every course, every year, and for every student as part of a comprehensive curriculum redesign, beginning in 2006. This involved the systematic integration of more than 70 hr of lecture, small group, and clinical geriatrics–relevant content into the first 2 years of the medical school curriculum, including regular preclerkship visits to older adults in assisted living facilities (ALFS) (Shield, Wetle, & Besdine, 2008).

Additional curricular innovations were introduced. The mandatory 2-year doctoring course on interviewing, physical examination skills, and professionalism included new content on interviewing and assessing the older patient and targeted exercises on communication skills (Shield, Tong, Tomas, Campbell, & Besdine, 2011). The elective Scholarly Concentration (SC) in Aging was the first for the medical school; each SC was organized around a chosen theme (Green, Borkan, Pross, Adler, Nothnagle et al., 2010). The required first-year anatomy course began “Treasure Hunts” of aging-related anatomical findings in walk-the-tables laboratory sessions with geriatricians (McNicoll, Nanda, & Besdine, 2009). Key clerkship cases were developed to reflect the complexity of comorbid conditions common in older patients. Finally, an “end-of-life theme” was created across the major clerkships highlighting ethical issues and communication challenges. The goal of these efforts was to infuse high-quality geriatrics content throughout the curriculum in recognition that most students’ future practices will involve some older patients regardless of specialty.

Evaluation of students in health care disciplines has traditionally relied on quantitative assessments of a priori learning objectives and attitudes (e.g., Voogt, Mickus, Santiago, & Herman, 2008), evaluation instruments including Association of American Medical Colleges graduation and other questionnaires (e.g., Alford, Miles, Palmer, & Espino, 2001; Anderson, 2004), web-based evaluation tools (e.g., Chumley-Jones, Dobbie, & Alford, 2002; Supiano, Fantone, & Grum, 2002), United States Medical Licensing Examination performance scores, Objective Structured Clinical Examination, “shelves” exams, and pre- and posttest analysis (e.g., Anderson, 2004).

Reflective or narrative writing across multiple health sciences remains uncommon but is increasing. Educators have used student narratives to assess student attitudes and responses to clinical experiences (e.g., Borgstrom, Cohn, & Barclay, 2010; Goldenhar & Kues, 2008; Westmoreland et al., 2009). Student narratives have also been used to foster student self-reflection (e.g., Brady, Corbie-Smith, & Branch, 2002; Charon, 2001; Dyrbye, 2005; Epstein, 1999; Garrison, Lyness, Frank, & Epstein, 2011; Plack, 2007).

Although student narratives may be useful in evaluating students’ responses to programmatic interventions (e.g., Shue, McNeley, & Arnold, 2005), reflective writing to evaluate medical school curricula is rare. To supplement multiple conventional evaluative approaches of students and the curricular redesign, such as exams, questionnaires, and OSCEs, we used narrative journaling to help understand students’ responses to curricular enhancements. Our qualitative “journaling” project was developed primarily to elicit students’ responses to new aging content in the redesigned curriculum and identify areas for improvement. Secondarily, we sought to encourage students’ self-reflection on caring for elders and personal and professional development. Student journals provided real-time feedback on successes and challenges in integrating geriatrics content throughout the curricula to help make immediate and continuous curricular improvement. To our knowledge, this project is a unique effort to rigorously analyze medical students’ qualitative responses to a geriatrics curriculum. This approach could be useful to evaluate other new curriculum content and to better understand how students become physicians while caring for an aging population.

Design and Methods

First-year medical student (MS1) journalers were recruited via E-mail and in-class announcements in Semesters 1–5 of the 7-semester project from January 2007 to June 2010. Second-year students (MS2) were invited to participate in Semesters 2–5. As geriatrics integration proceeded throughout curriculum redesign, third- and fourth-year medical students (MS3 and MS4) were included in Semesters 5–7. Students were invited to participate regardless of their interest in aging. Study staff met individually with all interested students to conduct an informed consent process using an institutional review board–approved protocol. Students were assured that participation would not affect their grades; faculty members would not know who was involved.
MS1 and MS2 participants were asked to write weekly 1- to 2-page narrative responses to two standard questions: (a) What are your experiences, reactions, and insights related to the geriatrics content you have received in your medical school courses? and (b) What are your experiences, reactions, and insights regarding the older patients (≥ 65 years) you have encountered in your community mentoring through the doctoring course, including standardized patients and elderly patients in other settings? Often, a third question, generated by the team, asked about that week’s lecture topics or clinical experiences (see Table 1). Clerkship students (MS3–4) were asked to write journal entries every other week in response to two semistructured questions about didactic and clinical content in their defined clinical experiences. Journal entries were E-mailed to R. R. Shield and S. E. Campbell who reviewed them immediately for content that might result in real-time feedback to course directors. Students who completed the semester of journaling received an honorarium of $100 or $125 depending on the length of the semester and the number of journal entries expected.

During the project, we also conducted focus groups with nonjournaler medical students to broaden student input and validate themes identified in journals as a response to geriatrics inclusion within the medical school curriculum.

**Analysis Process**

Journals were deidentified by R. R. Shield and S. E. Campbell and provided to the analysis team, comprising a gerontologist, a medical anthropologist, a health services researcher, and two geriatricians. Only R. R. Shield and S. E. Campbell knew participants’ level of interest in geriatrics or previous experience with older persons. After reading all transcripts of the first semester and conducting iterative group discussions, an initial coding schema was developed. After each team member individually read and coded the transcripts, the team discussed the transcripts line by line in weekly meetings to achieve consensus about code definitions, reconcile interpretations, identify saturation of categories, and select key quotations representing prominent themes across transcripts (Crabtree and Miller, 1999; Curry, Shield, & Wettle, 2006; Farrell, Campbell, Nanda, Shield, & Wettle, 2008; George, Stuckey, Dillon, & Whitehead, 2011). The “audit trail” documented minor alterations in the coding schema, clarification of codes, emerging themes, and other issues. Clerkship journal analysis followed a similar pattern. The themes, domains, and sub-themes were identified in an iterative process, first as the analysis team reviewed and coded transcripts and then by using NVivo software (http://

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**Table 1. Examples of the Third Question in Journaling**

| MS1 | Do you see a clinical application of course content this week, especially as it might pertain to older people? How might stereotypes you hold influence your care of older patients? Please reflect on how your interviewing skills have improved over this year and how your approach to older patients may be different than that with younger patients. Please write about how your exposure to older patients over this academic year may have changed your level of interest in working with older patients in the future. How do you think the age of your cadaver influences your anatomy experience? How do you think your community mentor experience this year affected your understanding of and interactions with older patients? What are your thoughts about screening tests for cancer and other diseases in older patients as compared to younger patients? What are your thoughts about the use of medications with older patients? |
| MS2 | Please reflect on your communication and physical examination skills in dealing with older patients. How do you think the age of a patient influences the process of informed consent? How do you compare your attitudes and skills in dealing with older patients compared to what they were at the beginning of the semester? Please reflect on your experiences with the geriatrics assessment. What are your thoughts about older patients being on dialysis? What is the knowledge a physician should have to provide care for an older person? What skills are needed by a physician to adequately assess an older patient? What attitudes do you think physicians need to have to adequately care for older patients? |
to identify and manage similarly coded portions of text relevant to the emerging themes. After reconciliation, coded transcripts were entered into the software to allow comparison and analysis of themes across all transcripts and medical school years.

Results

The journaling project included 30 individual journalers, some of whom participated in as many as three semesters, totaling 45 participation semesters; 47% of the participants were Asian, 10% were African-American, 40% were White, including 8% of Hispanic origin, and 3% were of unknown race and ethnicity. The 405 total journals, including 47 clerkship entries, were contributed by 20 MS1 students, 8 MS2 students, and 9 MS3–4 students; 42% of submitted journals were completed by males, and 58% were completed by females compared with an average 46% male and 55% female composition of the medical student body in 2009–2012. Eleven students did not complete their journaling semester.

Journal analysis identified 10 themes. We grouped related themes into four encompassing domains of content (Table 2). Content saturation was achieved in each theme and was further reinforced by input from focus groups (see later). Here themes are presented accompanied by representative quotations.

Domain 1: Evaluation of Geriatrics Content

The themes in this domain show the impact of aging-relevant content and experiences with older individuals on medical students.

Theme 1. Students recognized efforts to integrate geriatrics into the redesigned medical school curriculum.

I’m much more aware of the geriatrics content in my courses this semester . . . . (MS1 student)

Students’ entries reveal that they recognized the need to prepare for an aging population:

I appreciated his . . . laying out the population statistics . . . we first year medical students are not training to enter into a static health care system that will be essentially the same eight years from today as it is now. (MS1 student)

Subtheme A: Students appreciated evidence of successful integration in their curriculum:

. . . there were set units that the geriatrics folks had an opportunity to coordinate with our lecturers to make sure that their content was integrated. (MS1 student)

This student noted improvements over time:

Over the past month, I have been pleasantly surprised at how seamlessly geriatrics content has been woven into my Medicine clerkship in stark contrast to the aging material that always seemed to be more of a nuisance to incorporate for our first and second year professors . . . . (MS3 student)

Students also noted whenever aging content appeared tacked on and slides “stood out by themselves” (MS1 student). Students were critical if instructors appeared not to fully understand the aging content or when implications of aging were included only minimally:

Small group on Monday included a case that was about an elderly person with multiple health issues, but . . . there was little connection made as to why the age of the patient would make any difference to the questions being asked. (MS2 student)

One MS1 student commented, “. . . the lecturer was unable to present those slides to the fullest,” and another MS1 student stated, “. . . some of our professors glossed over slides about geriatrics because they simply did not know what to say about them . . . .”

Subtheme B: Students sometimes debated whether integrated content surpassed stand-alone content:

In today’s lecture on ventilation . . . [the] aging content was integrated with the rest of the material, as opposed to stand-alone. There are pros and cons . . . If stand-alone, it . . . catches attention immediately, but may seem disconnected. If integrated, it may blend in with the rest a little better. (MS2 student)

Subtheme C: Students suggested recommendations regarding opportunities to improve geriatrics content, such as to receive information about mechanisms of aging to understand why disease manifests differently in older patients:

. . . the course directors often mention aging, but rarely spend more than 30 seconds on it. There’s often a brief mention of how something changes . . . but never an explanation . . . . I understand that our courses in the first year are just basic sciences and introductions to various systems/areas, but I still wish the process of aging was explained . . . . (MS1 student)
One MS1 student asked that “some ‘normal’ patients” be included while another wondered, “What IS age to them—what does it mean to be old?” Another student had this suggestion about the ALF program:

I wish that I could have gotten to see this woman in her home environment . . . her actual apartment set-up. This might have given me an indication of how much she is able to do for herself. (MS1 student)

Students requested information about causes and treatments:

It might have felt more thorough to have a separate slide listing all the skin lesions that are more common in the elderly . . . rather than mentioning age as a sidebar to some of the skin conditions . . . . Dr . . . noted that age was a prognostic factor in malignant melanoma, but it would have been nice to see a chart or some specific numbers as to how . . . . (MS2 student)

Another commented:

Whenever we come across a topic that is complicated for the elderly and not currently well understood, we never really know what we should do for it. The treatment is always vague, the course and progression of illness is never fleshed out . . . . (MS2 student)

Subtheme D: Especially in retrospect, more advanced students noted that aging content was beneficial preparation for clinical clerkships in Years 3 and 4:

. . . being on the wards has put our geriatric content and curriculum into context and I really am starting to appreciate how important it is for every future physician to have a basic geriatric knowledge. (MS3 student)

Journalers thus indicated awareness and appreciation of aging-relevant content, expressed approval for well-executed efforts, and suggested improvements.
Theme 2. Preclerkship exposure to elders made a strong and lasting impression.

Students often noted how they valued classroom and clinical experiences with older persons. Presentations including older adults were dramatic:

[The course instructor] did a patient demo of a 70-year-old . . . [professor] mildly affected with Parkinson’s disease . . . . It was enlightening and touching to witness a real patient with PD and learn about how his illness affected his life. (MS1 student)

Another noted:

The best geriatrics content, however, was the ‘patient viewing’ of a 70+ year old man with multiple basal and squamous cell carcinomas . . . . He talked to us a little bit, warning us to stay out of the sun. (MS2 student)

Subtheme A: Exposure to older adults disrupted some stereotypes:

[I thought,] ‘I’m glad we’re doing geriatric interviews because now we can skip over that awkward sexual health profile’ . . . my assumption [was] . . . geriatric patients are always slow and sexually inert . . . [However,] some may have stereotypical health problems . . . but many others will not. They . . . may even have sex (gasp). (MS1 student)

Another student did not expect functional fitness in an older ALF resident:

For the get up and go test, she really got up and went. She got up with ease and walked so fast into the next room that by the time I had walked into it, she was not even there . . . . I thought that she had . . . gone back to her room. But then she reappeared. (MS1 student)

A student compared an older and a younger patient’s reactions to illness:

What amazed me about this patient was how incredibly positive and happy she was . . . She told me more . . . — how she ‘ain’t goin yet’ because her two sons—one is disabled and the other has Down’s Syndrome—needed her . . . . Her attitude . . . was sincere and full of wisdom . . . The patient I saw afterwards was 29 years old and irritable . . . . (MS2 student)

As students began to recognize these preconceptions, they recorded how clinical experiences were affecting them.

Domain 2: Recognition and Application of Geriatrics Principles

In this domain’s themes, students recorded how they used their increased knowledge, appreciated geriatric complexity, and began to develop adaptive strategies.

Theme 3. Students’ journals reflected growing understanding and application of geriatrics principles.

Students remarked how aging is different from disease, social context is important, and these principles have application throughout medicine. This student noted:

I’m more likely to pay attention to whether an older patient can hear me . . . and I’m less likely to call an older patient by their first name without checking . . . . I might pay more attention to whether parts of the [physical] exam will be very strenuous . . . . I may consciously or not pay more thorough attention to an older person’s balance and other components of the neuro and cardiovascular exam . . . . I have a higher suspicion of detecting something different from usual. (MS2 student)

Subtheme A: Students identified distinctions between disease and normal aging and observed the complex interaction between social context and disease:

While I am not surprised that age is a major risk factor for dementia and memory loss, it brings up the interesting question of what defines ‘normal aging.’ Since most, if not all, elderly individuals experience some degree of memory loss, should we include that in the paradigm of the aging syndrome? (MS1 student)

Students saw firsthand the effects of social bonds:

. . . social and spiritual support . . . strongly influences their coping with such difficult times in their lives . . . her two sons frequently visited her . . . so her recovery was relatively fast. [But] more lonely elderly patients may experience greater difficulties coping. (MS1 student)

Difficult family issues also made an impression:

His wife . . . was in poor health . . . [He did] the household chores, including going up and down the basement stairs for laundry . . . he said his children were in very far-off states . . . I would not [think] of being far from my parents in their old age. (MS2 student)

Subtheme B: Students also noticed how geriatrics principles apply to other patients.

Outside of the geriatric content, we seem to study perfect systems. This integration provides a good opportunity to appreciate the inevitable complexities of all our patients-young and old. (MS1 student)
Geriatrics principles might be relevant to pediatrics:

... pediatric and geriatric populations appear to be susceptible to similar pathogens ... the opportunistic bacteria Listeria is implicated in meningitis in the newborn and the elderly ... it is the very young and elderly who do not have the reserve to fully fight off the infection ... In young children ... signs of infections are as subtle as temperature change ... In elderly patients, signs of infection are [also] atypical ... (MS3 student)

Encountering grandparents on the pediatric rotation, one student commented:

... the elderly caretaker was having difficulties getting the child to an afterschool program because she became uncomfortable driving ... the pediatrician ... [should] address this issue ... [but] unfamiliarity with adult issues/programs may serve as a detriment to the care provided. (MS3 student)

Theme 4: Students were impressed by the complexities of treating older patients.

In this theme, students commented on older patients’ complex health histories and long-standing behaviors and recognized troubling implications.

Subtheme A: Students noted the complexity of older patients’ medical difficulties. One said,

Honestly, all I see are challenges. The older the patient the more complicated their medical history and therefore the more multi-dimensional the diagnosis. They are already a pharmacologically vulnerable population ... [with] complex co-morbidities ... (MS1 student)

Another noted multiple pathologies and polypharmacy, saying,

I cannot imagine having such a complex regimen of prescriptions ... take with food, take with milk, DO NOT take with food, take before bed, take in the morning ... (MS1 student)

Some questioned the relative value of treating patients with shorter expected life spans compared with younger patients:

One thing that is very hard to accept about older patients is that they are going to live fewer more years than younger patients, all other things being equal ... I feel that some people do not want to specifically go into geriatrics for that reason—the return is less. (MS1 student)

Subtheme B: Students began to understand limitations of their role. For example, in learning to counsel elders to quit injurious behaviors, they empathized with older patients’ reluctance to change:

... an elderly woman ... was not interested in smoking cessation ... One of her main arguments was that she was too old ... How could I counter such a point? (MS1 student)

Some questioned the physician’s authority to intervene with family members:

In an elderly patient who is regressing in their ability to be independent, whose responsibility is it? ... should a physician initiate communication with family members? ... can a provider mandate that a patient find some home health help? (MS1 student)

Subtheme C: Taking these factors into account, students described traits that a physician must possess for effective care:

... the doctor must be able to assess the interaction of several coexistent diseases ... balance the large numbers of medications ... consider the changes that occur in a patient’s ability to live an independent lifestyle ... having the patience to think through all of these factors and decide on a treatment plan, and then speak with the patient about it, is something that is of the utmost importance. (MS2 student)

As described next, they also noted their increasing skills.

Theme 5. Students developed strategies to address the challenges of interviewing older patients.

Students struggled with various challenges of the medical interview but improved over time.

Subtheme A: Challenges were multifaceted. For example, an MS1 student felt “awkward” with an older patient when “he kept referring to me as a nursing student.”

Time constraints of the interview format were also difficult:

I am so bad at elderly interviews ... I start chatting and ... it becomes a visit ... we are going off track, but I feel like an evil person if I interrupt such venerable elders ... (MS1 student)

Subtheme B: Students began to learn how vital the interview is and how practice helped:

... I am more patient than I thought I was and ... this patience is important in talking to older patients who may need more time to think through their stories. (MS1 student)

One revealed,
how comfortable I have become working with elderly patients. Between my greater knowledge of diseases and my experience working with patients . . . I have no fears about walking into a room with an elderly patient, taking a full history and performing a physical exam. (MS2 student)

Students started learning the power of listening to develop relationships and understand:

The point of learning about the patient, communicating effectively . . . [is to] . . . come up with the most appropriate diagnosis and treatment . . . [and also] to work within the patient’s explanatory model of disease to understand who they are . . . . (MS1 student)

Although acknowledging improved mastery, they compared the complexity of the clinical encounter of older with younger adults:

The interview was much shorter, even simpler, with this [younger] patient. I can see how a physician would look forward to seeing such a patient after a string of elderly patients . . . However, the fact that the interaction was so simple also left me feeling like there was something lacking . . . the interaction had not been as deep and rewarding as some of those I had with many of the elderly patients. (MS2 student)

Another said:

I have now had several older patients thank me for ‘being so thorough,’ and it is gratifying to know that these patients really appreciate the extra time I put in to address all of their concerns . . . [they] have looked me in the face and told me they think I’ll make a great physician. This is particularly touching to hear from my older patients because they have seen their fair share of physicians . . . (MS3 student)

Domain 3: Student Attitudes and Cultural Experiences

This domain links themes in which students explore the meaning of aging, ageism, and cultural stereotypes and how to apply ethical principles to caregiving.

Theme 6. Students struggled to define who and what is “old.”

Journalers labored to define the concept of “old” as number of years lived versus health status:

So, a 40-year-old patient with kidney dysfunction, impaired vision, and a shuffling gait is still considered young in comparison to the perfectly healthy 80-year-old patient with the same profile . . . . (MS1 student)

One MS1 student noted, “After all, in today’s medical world, what we used to call old isn’t exactly that old anymore.” Physical appearance and age were not necessarily markers for health status:

. . . we had a slide of an 80 year old man . . . pole vaulting . . . Not every elderly patient was hard of hearing, blind, or demented, although we had those too . . . . (MS1 student)

Some choices and the lives of older adults surprised students:

I was amazed by the firm way . . . [she] spoke about her life . . . I felt bad that she was not living with family, but . . . I realized that she was living the life . . . with the dignity and grace that I have never seen in someone her age . . . . (MS1 student)

Thus, their encounters with older persons enhanced their growing sophistication.

Theme 7. Students grappled with ageism, including their own cultural stereotypes and those of physicians.

Students indicated how they were surprised by their preconceptions and noted how ageist ideas impede care.

Subtheme A: With exposure to a diversity of older patients, some journalers admitted their own ageist views:

My stereotypes generally characterize the elderly as slow, fragile, forgetful, and eccentric . . . . Even though it was blatantly obvious that . . . [he] was in amazingly good shape, I still made a connection with weakness and disability . . . . (MS1 student)

Another noted:

Our lecturer had assured us that the elderly had plenty of sex indeed, and thus we, as physicians, needed to be both aware and unembarrassed in addressing these issues in order to properly care for them . . . . (MS2 student)

An 86-year-old patient’s request for sexual advice made one MS3 student’s “pre-conceived notions . . . go right out the door.”

Some students emphasized the pitfalls in automatically assigning disability to old age:

. . . many diseases of the elderly go undiagnosed and untreated. Physicians and the elderly themselves underestimate the health capacity of the aged based on stereotypes . . . . When there are pains . . . they assume they are just getting old . . . [but] there
may actually be an underlying physiological malfunction. (MS1 student)

A case study provided student reflection on potentially ageist assumptions regarding the capacity of older patients for recovery:

... a woman in her eighties, walker and wheelchair bound, [was] suffering from increased intracranial pressure... her gait painfully slow. The [instructor] spoke of... how we may be tempted to let her continue in her degeneration; she's already eighty, for Christ's sake. But with a simple [shunt] procedure... we saw this woman walk briskly in weeks, without a walker and without assistance... (MS1 student)

This student related a gratifying story:

My mentor insisted on several lifestyle changes including quitting drinking... I was most intrigued by the man's willingness... [He said] quitting drinking had been difficult...yet he... had not consumed any alcohol since first being diagnosed with cirrhosis... we are taught [in doctoring]... that it can be notoriously difficult to convince elderly individuals to make large lifestyle changes... [This patient is] a reminder that... just because a patient is elderly, it does not mean that they are going to resist... changes their doctor recommends. (MS2 student)

Subtheme B: Stereotypes could disrupt the provision of appropriate care. An MS1 student noted how “bias or even ignorance” could result in misunderstanding or missing important aspects of health and function in older patients. Students occasionally observed ageist attitudes among providers:

There is also ageism where doctors or nurses are more reluctant to deal with elderly patients and this may be felt by the patient... (MS1 student)

Students perceived how complexities involved in caring for older patients may create subtle barriers:

A lengthy and successful surgery would probably be viewed as a great deed by both the surgeons and the patient, but a lengthy interview is a bother. (MS1 student)

Students became aware how their cultural standards could affect their interactions:

Moreover, my unfamiliarity with American culture sometimes makes it harder to connect with the patient. Differences in cultural understanding could lead to poor communication. I will have to learn to remain open-minded, show empathy, and connect with patients of a different culture. (MS1 student)

Theme 8: Students recognized ethical considerations in the treatment of older patients.

Case studies and discussions raised ethical questions about ageist motivations of treatment decisions. A student was troubled by how an older patient may have been wrongly labeled as incapable:

I wonder if I were the doctor, if I would have noticed the possible depression of the patient, if I would have been able to stand for the patient despite the pressure of his lawyer sons... I hope that I would actually be able to take my patient's interests more into heart. (MS1 student)

Listening to house staff physicians discuss deaths of younger versus older patients provoked the following reflection:

One of the fellows iterated, ‘I always feel bad when younger people die. I rarely care when old people do’. [I] wonder how often medical judgment and care is overriding by the age of the patient... (MS3 student)

This student mused about the balance in representing the patient’s wishes in relation to those of the physician and the family:

A physician’s personal ethics and perspectives on aging have a great impact on the lives of their patients who are unable to make decisions for themselves. I’ve generally thought of end-of-life or surrogate decision-making as strictly family oriented, but in reality, the physician has a huge role. (MS2 student)

The influence of age on communication and ethical issues was noted by this student:

[We had] a case (related to ‘truth-telling’ in difficult situations) about an elderly patient but... never really connected to the person’s age. I later thought about what difference age might indeed make within a culture or family that believes a patient should not be told their diagnosis—would they be potentially more or less likely to withhold information? (MS2 student)

A student was troubled by treatment of older adults on a dementia unit:

Because of its convenience for staff, it appears standard practice to calm these patients down with medication. This led me to wonder whether or not we jump to medications too quickly... The use of these antipsychotics on dementia patients is known to be for the benefit of staff... and the benefit of friends/family—who will presumably be more at ease with their loved one appearing tranquil. Is there any perceivable benefit to the dementia patient? (MS3 student)
These journals provide a window into students’ professional development.

**Domain 4: Personal and Professional Development**

The themes in this domain include student considerations about their mentors that reflect some ways students develop personally and professionally during medical school.

Theme 9: Students assessed their clinical mentors with increasing discernment throughout medical school

The journals reveal preclerkship students’ views of their weekly community mentor sessions, beginning in their MS1 year. Clerkship students noted inpatient and outpatient interactions with a range of clinical mentors. This student approved of her mentor’s approach:

*Through experience, [my mentor] has become better at asking . . . questions . . . to prevent the patients from getting the chance to go off on tangents or make the interview unnecessarily long. He certainly gets better information in less time than I am able to.* (MS1 student)

Although still expressing admiration, more discerning appraisal emerged with enhanced training:

* . . . there have been times that I thought [my mentor] could have spent a little more time explaining illnesses and treatments with an older patient to make sure they understand . . . an older patient may be more dependent on their physician for information . . . than a younger patient, and . . . it may be more important to take the time to sit and talk to them in more depth.* (MS2 student)

Students compared mentors’ behaviors:

*My mentor is quite skilled at keeping the interview on track, but flexible enough to let the conversation go at times to where it needs to. Another physician . . . was rather dismissive of the patient, taking on a semi-paternalistic [role] which . . . was less tactful and perhaps . . . potentially rude.* (MS2 student)

Sometimes their preclinical education was challenged by prerogatives of busy hospital routines:

*I have been able to do my part in decreasing medication lists, addressing knowledge deficits about disease, and advocating for the medical treatment that truly betters quality of life. [However] . . . when I bring these quality of life issues up with residents, I received the response, ‘You’re probably right, but the attending has ordered it.’* (MS3 student)

Theme 10: Students’ personal and professional development was demonstrated over time

This theme reflects how students achieved clinical acumen by integrating new knowledge and experiences into their development.

Subtheme A: Students had to adopt the role of the professional and learn basic skills in clinical interaction.

*I was raised to revere my elders. Pretty much anyone older than me should be given some sort of title (Mr., Mrs., ma’am, aunt, etc.). I had no trouble interacting with adults as a child . . . but it has taken me a while . . . to view myself as an adult with the same grown-up status as those elders I encountered in my youth.* (MS1 student)

Students also became more realistic in their approach to patient care:

* . . . when I see a patient who has a medical condition and doesn’t seem to care as much as I think someone ought to . . . I get frustrated. I think I’ve evolved because I used to get angry . . . now I involve less of my own feelings and try to figure out objectively how best to help the patient reach maximal health.* (MS1 student)

Subtheme B: Students assessed their strengths and weaknesses, developed new skills, and applied their knowledge to clinical situations. One said:

*To treat patients with dignity . . . we learn through our interactions with our patients and peers. At the beginning . . . I was focused on the chief complaint, history of present illness, social history, and past medical history . . . on getting the interview right . . . [forgetting] what doctoring really is about . . . grace, dignity, respect. Have I become better now? I sure hope so. I’ve learned that behind all the cookie cutter questions, all we have is ourselves, as doctors and as human beings.* (MS1 student)

With increasing clinical interactions, students related how their classroom learning affects real encounters in the medical setting.

*When we first started learning about drugs . . . I found it very tedious . . . This year . . . I was able to apply the drug knowledge . . . to patients . . . at my mentor’s office . . . Suddenly pharmacology was one of the most relevant topics . . .* (MS2 student)

Personal and professional development throughout medical school training is evident in these journals. While demonstrating increased competence, student uncertainty is also apparent. This student described mixed feelings when a patient was designated to receive “comfort measures only” status:
I could see that she was reaching her end. The fight was gone and it almost didn’t seem like the same Ms. K I had first known . . . it still felt wholly unsettling . . . If this was this hard for me, I could only imagine what her son had to wrestle with to do what his mother would have wanted, to go against the most basic of instincts—survival . . . And as I wrapped up my final day on the wards as a medical student, a sudden chill shot down my back beneath my white coat. What questions lay in store for me during residency and what answers could I ever hope to find? (MS4 student)

Ten focus groups were also conducted with a total of 62 nonjournaler medical students over the same time period, including 22 MS1, 18 MS2, 14 MS3, and 8 MS4 students. Results of focus groups provided results similar to the journaling entries noted earlier. For example, an MS4 student stated that the ALF program provided “good preparation for clinical encounters” in clerkships, whereas in another group, an MS2 student claimed, “Now I am not so scared” of older people because of the geriatrics exposure in the preclerkship curriculum.

Discussion

The journaling project has provided important insight on geriatrics curricular inclusion at the Alpert Medical School of Brown University. Unlike previous applications for student evaluation and self-reflection (e.g., Charon, 2001; Goldenhar & Kues, 2008), journaling was used expressly to assess curriculum in this project. Participants exhibited appreciation for the value of aging-relevant content. This journaling strategy helps complement standard evaluation methods to assess geriatrics curriculum inclusion. As described, journals reveal how students react to the integration of content, how they recognize and apply geriatrics principles, how they assess their attitudes, and how they use knowledge and experience to grow into competent physicians.

We note the implications for faculty, curriculum, and medical students.

Implications for Faculty and Curriculum

Important refinements have occurred as a result of using journal entries to provide “real-time” feedback to instructors and course directors during curricular redesign. Journaling was a deliberate intervention to supplement standard evaluation tools with student responses to guide modifications. For example, when students noted a lack of content and poor integration, Reynolds project leadership worked with the course instructor to incorporate material regarding medication pharmacokinetics and pharmacodynamics in older adults. In another case, feedback that middle-aged standardized patients were not considered believable as older adults resulted in recruitment of older individuals for these roles. Students’ enthusiastic comments about the participation of a geriatrician’s table-to-table discussions of age-related anatomical findings in the “Anatomy Treasure Hunts” led to increased anatomy laboratory sessions involving five geriatricians.

Furthermore, systematically collected material from journals and focus groups about specific lectures, courses, and programs have been provided to course directors at the completion of each academic year and have been used in annual individual meetings with course directors to improve aging-relevant content. Such feedback has influenced curricular leaders to provide other changes, such as the pulmonary course adding a large number of geriatric cases in lectures, the doctoring course appointing a liaison director for the ALF program, course leaders reviewing and responding to specific student comments on content, and instructors facilitating smoother integration of aging content in lectures so that it does not appear “extra.”

It is important for educators to learn how curricular change impacts students. Accompanied by the standard quantitative evaluative approaches we used, the journaling project provided insight about how curricular redesign affects students. It also illuminates how students develop into professionals and how they respond to the challenges of caring for an aging population. Students’ responses help to tailor instruction and calibrate exposure so that students absorb key take-home messages to care for complicated older adults, including the profound difference between normal aging and disease and the impact of comorbid conditions. The journals offer important data about how to provide students with the concepts, information, and tools needed for successful interactions with older adults in clerkships and on the wards.

Overall, the model and results of domains and themes have been used in several ways and are potentially applicable in other medical curricula. The model provided an effective framework for communicating feedback with course directors and clinical supervisors to describe the context of findings regarding how geriatrics integration was
going well and where improvements could be made. The model has also been used to discuss with the geriatrics faculty to develop strategies for mentoring and professional development in addition to the course evaluation data. Finally, the model has helped describe the impact of the program and lessons learned to the Reynolds Foundation and to the medical education community through the Portal of Geriatric Online Education (POGoE) shared resources network.

Implications for Students

Salient themes from medical students’ reflections on geriatrics content illustrate students’ increased awareness of the intricacies of caring for older adults through enhanced exposure to geriatrics content and clinical experiences. The journals also illuminate how students’ emerging grasp of medical challenges is facilitated by interactions with older adults. Students demonstrated a growing appreciation for the diversity among older adults as they learned the value of treating the person—not the illness—and increasingly rejected the tendency to equate age with disease. While initially recounting frustrations in interviewing older patients, they were delighted to discover older individuals’ unexpected capacities and histories. Input received in the focus groups strongly reiterated these views. Upon asking for feedback about the journaling project, students appreciated their impact on the curriculum and reported that journaling encouraged self-reflection and personal development. Comparing students at varied stages of training, we note that advanced students displayed enhanced appreciation of the relevance of aging content on clinical practice. Again, this finding was further supported by clerkship student participants in focus groups.

Limitations

The self-selection of participants limits this study’s generalizability, although the robust number and diversity of journalers and total journal entries allowed identification and saturation of codes and common themes. Focus groups held each year with other students from each class revealed validation for the themes reported here, and no new domains or themes were identified. Although recognition of themes in qualitative analysis is inherently subjective and the analytic process is time- and labor intensive, our multidisciplinary approach to the review assured analytic rigor and yielded rich insights into student responses. We believe that the novel approach of including students from all 4 years of medical student classes, plus students who were not necessarily interested in aging, also supports the validity of these findings.

Conclusions

The need to prepare all new physicians to successfully manage the care of older adults is addressed at the Alpert Medical School of Brown University by its unique commitment to incorporate relevant geriatrics content within all preclerkship courses as well as clinical experiences. Substantive gains in this enriched curriculum attest to curricular successes and suggestions for continued improvement. Journaling should be considered by medical schools to improve course offerings in general, reveal curricular impact on students, help promote professional development, and in these ways advance clinical care. The in-depth perspectives and reactions elicited by student journaling provide important information for identifying problems and improving curricular content.

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