An Evaluation of a Sustained Senior Mentor Program for Medical Students

Short Title: Evaluation of a Senior Mentor Program

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Abstract

Background/ Objective: Medical student geriatrics education using community-based volunteer older persons, known as a Senior Mentor Program (SMP), began decades ago. Though these programs have been described and evaluated against curriculum objectives, the full breadth of students' learning from SMPs has not been reported.

Methods: We conducted a qualitative study using content analysis of reflections of Year 2 medical students submitted during a single visit home-based SMP. Written reflections of 102 randomly selected students from 2016-2018 were inductively coded and grouped into themes. Older persons from the SMP site assisted in coding and quotation selection.

Results: We discerned six themes from the evaluation of student reflections: student insight, interview and exam, social community, challenges with aging, strengths (responses to challenges), and physical infrastructure.

Conclusion: A single home visit with older adults enables pre-clinical medical students to learn about multiple positive aspects of aging.

Keywords: medical student, medical school education, geriatrics, evaluation

INTRODUCTION

History of Senior Mentor Programs (SMP)

The need for medical students to learn about aging has been recognized for at least 50 years (Freeman, 1971). The 1967 White House Task Force on Older Americans, the Association for Gerontology in Higher Education (established in 1974), and private foundations promoted education and training curricula to ensure a prepared workforce (Binstock, 2007; Peterson et al., 1987). The Veterans Health Administration began significant support for geriatrics teaching in the late 1970s, with national establishment of the Geriatric Research Education and Clinical Centers (Goodwin & Morley, 1994). In the early 2000s, the American Association of Medical Colleges and the Hartford Foundation supported grants for undergraduate medical education in geriatrics to 40 medical schools (Anderson, 2004; O'Neill & Hollan, 2005). Several years later, the Donald W. Reynolds Foundation began major funding to medical schools to support curriculum development and teaching in geriatrics (Reuben et al., 2009). More recently, the American Association of Medical Colleges and the American Geriatrics Society developed a set of 26 competencies for medical students related to the care of older persons (American Geriatrics Society, 2000; Leipzig et al., 2009).

One of the key innovations that resulted from these efforts was a move from teaching in institutional settings (e.g. hospitals and nursing homes) to community-based experiences. Wilson and colleagues described an education intervention that is now commonly called a Senior Mentor Program (SMP) (Wilson & Hafferty, 1980). This approach involves assignment of medical students to interview and examine community-dwelling senior volunteers, typically in their homes. An evaluation was published on 10 of the 20 SMPs funded by the Hartford Foundation (Eleazer et al., 2009). Variations on this model have included single visits (Adelman

et al., 2007; Heflin, 2006), longitudinal relationships over multiple years (Fitzpatrick et al., 2006; Martinez & Mora, 2012), interprofessional team experiences (Basran et al., 2012), and collaboration with a Meals on Wheels program (Demons et al., 2014). These SMPs have been incorporated in pre-clinical training or embedded within Year 3-4 clinical rotations. Almost all SMPs include related didactic training and/or debriefing sessions with faculty.

There are many attractions to the SMP model. It offers an opportunity for students to interact with people who are two or three generations older than they are, but who are not acutely ill. This helps avoid creating negative attitudes toward older persons that are based on illness and frailty (Higashi et al., 2012). Some medical schools have used these SMPs to promote positive images of the school in the media and with prospective medical students (Anderson, 2004; Eleazer et al., 2009).

History and Structure of the University of Minnesota SMP

In 1999, the University of Minnesota Medical School initiated a SMP as a pilot program. It was then funded by the Hartford Foundation, which covered administrative costs for several years. Before the SMP began, the only formal geriatrics education offered at this medical school was a simulation exercise, called "The Aging Game" (Pacala et al., 2006). The SMP was introduced as a single afternoon session among a series of required Year 2 experiential learning opportunities to practice interview and exam skills, in hospital and clinics. From its outset and to date, the University of Minnesota SMP educational goals have been to: 1) demonstrate appropriate professionalism and etiquette for interacting with an older person in his/her home, 2) describe services available to older individuals in a high-rise campus setting, and 3) complete selected components of a geriatric assessment.

Over the 20 years that this SMP has operated, the model has remained very consistent. This is due to the fact that a single faculty member/investigator (ER) has precepted the SMP. Evaluations of the SMP, including surveys of satisfaction and pre-post self-confidence and a formative Objective Structured Clinical Examination station demonstrated efficacy. The modest changes that have occurred include consolidation of training sites to one campus for older people and enhancements in the assessment tools assigned. In addition, the Year 2 geriatric experiential curriculum expanded from only the SMP to four afternoons/student, occurring in a variety of settings, such as a rehabilitation ward, nursing homes, and hospice.

Since 2002, the SMP has been conducted on a campus including 400 moderately priced, urban, non-government subsidized apartments adjacent to a nursing home, all operated by a faith-based non-profit. The apartment tenants may elect to receive service by a home health agency for intermittent long-term home care and, in more recent years, comprehensive assisted living, When the SMP began, the median age of apartment tenants was in the mid-70s, but rose to the late 80s by 2015. In addition to these older tenants, some newer tenants under 65 years old with a variety of disabilities also participate in the SMP. Other aspects of this community have been described in detail previously (Kilaberia & Ratner, 2018).

The SMP preceptor has personally done most of the recruitment of volunteers for the SMP at group events on the campus and individually in hallways and dining rooms before and after SMP sessions. A few volunteers have been referred by the campus social worker.

SMP Process

One to two weeks before an SMP session, the preceptor calls older adult volunteers to schedule them for a specific date. An increasing challenge in recent years is a decline of volunteers answering their phones. About one-half of volunteers can be reached within three

calls, and about two-thirds of those reached are available to participate. Volunteers are utilized no more than six times per year.

The SMP afternoon experience is preceded by an assignment for students to review a multi-media Web site on performance of a house call and other self-learning materials related to aging and community. Students in groups of about 15 meet with the faculty member at the SMP site for a one-hour orientation to discuss the assessments to be performed. This orientation includes content on etiquette for visits with an older person and a variety of abbreviated geriatric assessments. Visits take place in the older person's apartment, typically with a pair of students per volunteer. This aids in policy and procedure adherence. The one adverse outcome over the 20 years of offering this SMP has been a student bitten by a volunteer's cat, which required only observation of the cat for 2 weeks, as recommended by the State Department of Health.

Students complete a worksheet immediately after their visit with the SMP volunteer describing what they learned. Then, during a group debriefing, students verbally reflect on their experience and discuss the significant variation in health, function, and lifestyle among the SMP volunteers visited. The SMP sessions take place 12 times/year.

This educational model requires approximately 4 hours of faculty/staff time for preparation per session (which includes recruiting senior volunteers, scheduling seniors for specific afternoons, copying worksheets, travel time, and setting up the conference room), 4 hours per session for on-site faculty orientation, supervision, and debriefing, and a mid-afternoon snack for students. The program costs are currently about $15,000 to educate 170 students per year, or $85/student, (8 hours/session X 12 sessions/year X $150/hour estimated faculty compensation).

METHOD

Participants and Procedures

Participants were medical students at a public urban medical school enrolled in a required course during their second year. From 2016-2018, approximately 170 students/year participated in the SMP. Immediately after the interview with the volunteer, before the debriefing discussion, students completed a hand-written reflection in response to the prompt: "Please write a paragraph about something you learned today, about yourself, the senior you visited, or senior housing. This may include perspective from readings related to [this course] or other sources." An unbiased convenience sample was achieved by pulling 102 reflections from the top of stacks of papers from each of the three years (n=27), (n=31) and (n=44), respectively, prior to any review of them.

The Coding Process

We conducted a qualitative study using content analysis of reflection papers submitted by students using inductive coding. The reflections ranged in length from 100-150 words and were analyzed for recurring themes on learning within and between reflections. We looked for shared consistencies and meanings attached to learning (Patton, 2002).

From a sample of one-quarter of the reflections, three investigators (ER, TK, JE) independently chose keywords for each reflection. This coding process was completed manually directly on the back of the reflections. These investigators then met to define a list an initial list of 27 concepts. The remaining reflections were each reviewed by at least two of these investigators, using these concepts or new ones when necessary. Each reflection was assigned as many as three concepts by each reviewer. Five reflections were removed from the sample due to illegibility or unclear meaning. From the set of 456 concept codes assigned to reflections by

these investigators, 59 unduplicated concepts were recognized. These were then used by these investigators to resolve differences in coding on 32 of the 97 reflections. Finally, we manually grouped the concepts into six themes.

Given the brief nature of the reflection papers, we regarded as a meaningful unit of analysis every passage that referred to a learning experience. We focused on concepts as units of analysis. For example, 11 concepts (codes) represented a pattern that described the theme of student insight; eight concepts represented a pattern that described the theme of strengths; three concepts represented a pattern that described the theme of physical infrastructure; etc. We took reflection papers at face value, focusing on explicit statements about learning. Thus, most concepts were in the students' own words, conveying overt meaning rather than our interpretation of them. The theme labels such as "student insight" or "physical infrastructure" were discussed and developed by three investigators. This type of analysis is consistent with category development in content analysis (Berg, 2004). Table 1 presents the concepts and themes.

Inclusion of Program Participants

Our qualitative methodology extended to a community-based participatory research model (Israel et al., 1998). First, one of the investigators (JE) is a longstanding SMP volunteer and is past 90 years of age. Second, we sought to enhance interpretive validity through input from individuals residing on the SMP campus. From 100 quotes extracted from the 97 evaluable reflections, the investigators selected 32 quotes, 4-8 quotes for each of the 6 themes. A general invitation to an event was posted in the SMP site's elevators (the typical announcement process).

About 70 older persons attended the event in the dining room of one of the apartment buildings, sitting three to four at each table. Some attendees were previous SMP program

participants. Each table received a one-sided sheet of four quotes representing a single theme. Each theme was considered by at least two tables. Table groups were asked to come to a consensus about which two quotes best represented the theme.

Of the 32 quotes presented, 21 quotes received a vote from at least one table. From these 21, excerpts from two or three quotes per theme were chosen to include in this paper. The full quotes are in Table 2.

The educational evaluations described were deemed exempt from review by the University of Minnesota IRB.

RESULTS

As presented in Table 1, we discerned six themes from the student reflections: student insight, interview and exam, social community, challenges with aging, strengths (responses to challenges), and physical infrastructure. Below we elaborate on each theme.

Student insight

Students reported person-based and place-based learning. Person-based learning pertained to older adults being more vibrant, fully engaged, aware, cognitively robust, physically able, and high-functioning than expected. Students expressed being surprised or "impressed" with the older person being "very oriented … for someone who is 94"; or "he's … a great example of how age does not predict health, independence, or mental status."

Place-based learning pertained to perceptions that the senior living campus was "like a college dorm where there are always weekly planned activities." Students reported experiencing contrasts such as imagining senior living settings "to be rather gloomy" but finding that "I couldn't have been more wrong" because the resident "was full of life and constantly busy doing things that she loves."

Interview and exam

Students reported two types of learning: that based on interactions with residents in a "patient-centered interview instead of a doctor-driven interview," and learning deduced from the environment or the "home turf" of residents. Interaction-based learning pertained to "deep listening," "power of observation," "bedside manner," beliefs about medicine, speaking "clearly, loudly, and slowly," striking a balance between listening and conducting an assessment, and establishing rapport with residents who may not be conversational and with whom some questions may not be generationally appropriate, such as "questions about children if the patient is unmarried." Students also noted learning about health issues affecting minority groups such as seniors who are lesbian, gay, bisexual or transgender. Residents shared with students "awful experiences about doctors coming in and just doing what needed to be done without interacting." A student reported learning that "this advice will encourage me to engage each patient no matter how little time I have to spend." Students noted that home-based assessments led them to gather information and learn by looking in the refrigerator, looking at medication bottles, and simply observing residents walk or move in their typical environments.

Social community

Students reported learning about the importance and range of community, "from singing in choir to reading in chapel, working at the library in the building, and serving on a housing committee." Forms of community that helped combat isolation were faith, spiritual and church connections, especially "if family is missing." A sense of engagement underlay perception of health as a resident "evaluated his medical care based on its effect on his ability to perform hobbies." Health as more than healthcare was noted as a student

> …came to appreciate how much mental health conditions can be improved by multifaceted health maintenance. The patient I visited commented that, since moving into this home which monitors

> medications, offers social outings, and allows her to focus on other aspects of life, her mental health has greatly improved.

Challenges with aging

Challenges were noted in terms of "the transition from living independently to this kind of setting," loss of independence, loss of autonomy and sense of purpose, feeling like a burden, decreased mobility, and the role of finances affecting options and possibilities. Such learning was described as "a real, visceral appreciation of the vulnerability" and realization that "little things such as cooking and bathing could be so important." Underlying such learning was the understanding of multiple overlapping needs and coping strategies relied on by seniors:

> In an abstract sense, I learned about the constellation of people who might orbit a senior, and the multiple contexts in which they have to exist and find meaning. I learned that some of these contexts are easier to navigate (family / work) than others (healthcare / mental health). I got a sense that navigating these various contexts / relationships / demands is sometimes overwhelming and taxing.

Strengths (responses to challenges)

Students reported learning about older persons' perspective-taking such as recognizing that "there are those worse off than me." Others coped by being involved with family, friends, and volunteer activities and by being proactive: "he sings in a choir, regularly attends church, and takes a bus to get groceries." Other ways to manage activities of daily living were getting "creative about completing tasks such as getting laundry done, going to the grocery store," requesting help "to reorganize her kitchen cabinets," and "outside input from those that care for you" to make adjustments. Will, or individual agency, was noted in maintaining independence "if they so choose." Keeping engaged and connected in the community was noted as vital for a

resident who "volunteers in several different capacities within the building. For her, she views it as a way to be social for others' benefit and gives her a sense of usefulness."

Physical infrastructure

Students were "impressed" with the support infrastructure available for apartment residents, such as help with breakfast and bathing, "call strings" (emergency response system), presence of other people who are understanding and can help or get help right away, and a balance of opportunities for independent living while still being able to rely on on-site supports: "I learned that this senior housing has an extensive array of services that makes the facility akin to a small town. The close proximity of services has served the senior I visited well."

DISCUSSION

This qualitative evaluation of an SMP provides new insight into the ways such a program prepares medical students for care of older people. The described model also demonstrates that an SMP can be effective at a reasonable cost per student.

Most prior evaluations of SMPs have been quantitative. Other programs have published evidence that SMPs can increase students' confidence in various aspects of geriatric assessment (Demons et al., 2014; Lathia et al., 2015; Eleazer et al., 2006). There is one previous report of an OSCE in association with a SMP, with a reported 95% initial pass rate, although its two stations focused only on specific assessment skills (e.g. falls assessment, polypharmacy, and cognitive assessment) (Martinez & Mora, 2012). These studies establish efficacy of an SMP toward planned curricular goals, but don't fully explain what students can learn in such a experiential learning model.

The current study offers a comprehensive and in-depth perspective on the variety of things students learn in an SMP. Our approach differed from prior qualitative analyses of SMP.

One study collected data from students' responses to three open ended questions about what they most enjoyed, would change, and how the SMP influenced them (Adelman et al., 2007). That analysis only identified the most common themes within students' responses, rather than exploring the scope of themes discovered. Another study used focus groups with self-selected students to collect qualitative data about what students had learned in the SMP (Corwin et al., 2006). Three themes were identified: myths about aging dispelled; aging is an individualized process; and the importance of attitude in the aging process. Our study confirmed those themes but also demonstrated broader learning. For example, some of our students' essays focused on the setting in which the SMP volunteers lived. Both the social community and the physical infrastructure of the campus for older persons impressed some students. This demonstrated success toward the learning objective related to the setting of care. SMP models that visit older persons in private homes cannot provide such insight into how congregate housing for older people helps maintain quality of life. Our students also described learning that health outcomes depend upon a combination of healthcare, individual attitudes and preferences, and alignments of multiple types of supports that may be imbedded in a housing community. Students have previously described an SMP as an alternative learning format, that offered a "break from classes" and an opportunity to "get out of the classroom." (Corwin et al., 2006). In contrast, we found that medical students value the SMP experience as a better, not just alternative, model to learn interview skills in comparison to clinic/hospital settings, partly because performing the interview on a senior campus provided insight into micro and macro aspects of how the living environment and immediate community influence quality of life.

Our SMP model is more modest than those described in the literature. Only a single visit is offered, versus other programs which are often longitudinal with multiple visits. A single

faculty member is involved. Except for a few early years, the program has had no administrative support staffing. At the same time, it has been able to offer students the opportunity to interview in pairs, rather than in larger groups. The use of a single large senior campus has facilitated recruitment of volunteers and provided reliable conference room space for discussions.

The SMP model has long been well justified, but the names of such program may no longer be appropriate. The Frameworks Institute to Reframe Aging has recommending retiring the term "Seniors" (Frame Works Institute, 2017). Historically, the University of Minnesota SMP has been called "Seniors as Teachers". This name has been dropped from the curriculum materials to support reduction in ageism among medical students.

Strengths and Limitations

This study's strengths include use of individual essays to collect students' learnings, evaluation of a long-standing stable program, and validation of the findings by inclusion of older persons in the qualitative analytic process. A weakness in this study is that it only examined medical students' experience at a single institution, precepted by a single faculty member. Results may not be generalizable to students and faculty at other institutions, although they are consistent with prior, more limited qualitative SMP evaluations. In addition, we evaluated only students' short-term perspectives. It is unknown whether students retained and used insights gained from this educational experience as they entered Year 3-4 medical clerkships and beyond.

Conclusion

Teaching geriatrics principles using SMPs has been used with medical students for over 40 years. Pairing pre-clinical medical students with community-dwelling older adults enables student learning about multiple positive aspects of aging.

Author contributions: Study concept and design: ER, TK; Acquisition of subjects and data: ER, TK; analysis and interpretation of data: ER, TK, JE, HF; Preparation of the manuscript: ER, TK; critical revision of the manuscript: ER, TK, JE, HF.

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Table 1. Themes and Codes

Themes	59 Unduplicated Codes	
Student insight	Cultural change over time	Self-based learning
	Student preparing for aging	Individuality
	Shared human experience	Dissonance
	Geriatric affinity	Vibrance
	Demographics	Individual preference for faster pace than LTC
	Similarity, senior to young	
Interview and exam	Patient goals	Bedside manner
	Environmental assessment	Listening
	Interviewing	Provider relationship with patient
	Environment	Rapport
	Physical exam—foot	Cognitive assessment
		Beliefs about health
Social community	Home	Community
	A place called home	Social life
	Friends	Isolation: generational difference
	Family	Isolation
	Relationship support	Spiritual community
Challenges with aging	Safety	Physical health
	Hopelessness	Health
	Mental health	Mobility support
	Functional decline	Self-care
	Struggle for independence	Loss of autonomy
	Insomnia	Multiple contexts
	Sleep	Finances
	Loss of driving	Holistic picture
Strengths (responses to challenges)	Attitude	Mortality (death without fear)
	Coping	Importance of doing things for others
	Sense of purpose	Hobbies
	Spirituality Activities	Personal agency
Physical infrastructure	Emergency response	
	Amenities	
	Campus	

Table 2. Full Quotes of Excerpts Included in Results

Student Insight- 8 quotes reviewed, 4 received votes

1. I had imagined nursing homes/senior living facilities to be rather gloom. However, from visiting [resident] today, I found that I couldn't have been more wrong. [Resident] was full of life and constantly busy doing things that she loves.
2. He has a lot of gratitude for his health and family. What surprised me was that he has an excitement and anticipation for the future—despite being 96—which shows his passion for life. As he spoke about this excitement, it made me more aware of all the life that I will experience in the future and made me excited for what the future will bring. In short, his appreciation of the past and progress instilled an excitement for my own—and the world's—future. He's also a great example of how age does not predict health, independence, or mental status.

Interview/ Exam – 8 quotes reviewed, 5 received votes

1. The experience helped me gain an appreciation for geriatrics and the unique stories told by the elderly. The senior I visited was incredibly open about her experiences as a single woman growing up in war times. I learned how to navigate conversation in a way that allowed her to continue telling the stories she was so passionate about while also gathering the information I needed.
2. I think the biggest piece of advice or take away was from my patient who said, "people come to the doctor because they want to talk." He went on to explain some awful experiences about doctors coming in and just doing what needed to be done without interacting. This advice will encourage me to engage each patient no matter how little time I have to spend. Even a simple joke or comment will help build rapport and also then remember something about the patient to mention next visit.

Social Community – 4 quotes reviewed, 3 received votes

1. I was very impressed by all of the activities that the senior I visited participated in here, from singing in choir to reading in chapel, working at the library in the building, and serving on a housing committee.
2. I also came to appreciate how much mental health conditions can be improved by multifaceted health maintenance. The patient I visited commented that, since moving into this home which monitors medications, offers social outings, and allows her to focus on other aspects of life, her mental health has greatly improved.

Challenges – 4 quotes reviewed, 3 received votes

1. In an abstract sense I learned about the constellation of people who might orbit a senior, and the multiple contexts in which they have to exist and find meaning. I learned that some of these contexts are easier to navigate (family / work) than others (healthcare / mental health). I got a sense that navigating these various contexts / relationships / demands is sometimes overwhelming and taxing. Finally, I learned that for some older adults, organizing / cleaning a private space can be a therapeutic way of dealing with the sense of being overwhelmed and depleted.
2. I gained a real, visceral appreciation of the vulnerability and loss of autonomy many elderly patients experience.

Strengths – 4 quotes reviewed, 3 received votes

1. I learned a lot about our resident and how important it is for her to be independent and not be transferred to a nursing home. I assumed that she would have many challenges with

daily tasks; however, she has been very creative about completing tasks such as getting laundry done, going to the grocery store, etc. She also admits that she has limitations due to shoulder pain and has requested help to reorganize her kitchen cabinets. She still maintains her interests with family, friends, and volunteering.

2. I was surprised to learn about the level of community (compared to my past experiences with my grandparents) that some senior housing complexes develop / support. Our senior teacher not only engages in leisure activities, but volunteers in several different capacities within the building. For her, she views it as a way to be social for others' benefit and gives her a sense of usefulness.

Infrastructure – 4 quotes reviewed, 3 received votes

1. I learned that this senior housing has an extensive array of services that makes the facility akin to a small town. The close proximity of services has served the senior I visited well.
2. [Resident] has so many opportunities to live her life with a lot of independence while still being close to assistance if needed. […] Her apartment is fully furnished but has call strings if she needs.
3. I learned how important it is to have strong social connections. Our patient had a serious medical situation that might have been much more serious if he wasn't with other people and had a quick response to the situation. However, our patient did not have a buzzer if in the future he was alone and had a similar incident.

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