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Perceived Barriers and Facilitators for an Academic Career in Geriatrics: Medical Students' Perspectives

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Abstract

Objective There is a growing concern about a shortage of physician scientists. This problem is particularly severe in certain subspecialties such as geriatrics in general and geriatric psychiatry in particular. This study sought to obtain medical students' perspectives on barriers and facilitators toward pursuing a career in academics and/or in geriatric psychiatry or geriatric medicine.

Methods The study surveyed 27 first-year medical students from six US medical schools, who had demonstrated a clear interest in academic geriatrics by completing a mentored summer research training program in geriatric medicine or geriatric psychiatry, funded by the National Institute on Aging. The survey included open-ended and close-ended questions about likely career choice and factors affecting it.

Results Sixty percent of students reported they were likely to pursue an academic career, 44 % a career in geriatric psychiatry or geriatric medicine, and only 36 % a career in academic geriatrics. The most frequently perceived barriers were a lack of knowledge about academic careers and lack of exposure to geriatrics, financial concerns due to loan debts and low compensation, and negative impressions of research and of working with older adults. Facilitators included positive experiences with or positive impressions of research and research mentors and of older adults, and the growing demand for geriatric care.

Conclusions Attracting capable and motivated medical students to academic careers in fields such as geriatric psychiatry or geriatric medicine should be a priority in seeking to expand

the number of physician scientists and to add to the health-care workforce in underserved subspecialty areas. Necessary approaches should include opportunities to work in academic settings; availability of sustained and dedicated mentorship; early, consistent, and positive exposure to older adults; and financial incentives.

Keywords Medical students · Research career · Training · Physician scientists · Aging · Geriatric psychiatry

Several recent reports point to a troubling trend in medical education: a worsening shortage of physician researchers. There is a growing concern that physician scientists have become an “endangered species” [1, 2]. This problem is particularly severe in certain subspecialties such as geriatrics in general and geriatric psychiatry in particular [3, 4]. There is a widening gap between the need and the supply of physicians specially trained to work with older adults [1, 2, 5–7]. There are about 7,400 certified geriatricians in the USA—one geriatrician for 2,550 Americans over age 75; this ratio is expected to drop to one geriatrician for 3,800 elderly Americans in 2030. The disparity between the supply and the demand is even worse for geriatric psychiatrists [8]. The number of board-certified geriatric psychiatrists in the country is less than 2,000, and a majority of them are non-academicians. A recent report by the Institute of Medicine (IOM) [7] lamented a lack of national attention to preparing the workforce to care for older adults, especially those with mental illnesses and substance use disorders. Developing a cadre of clinical, basic, and translational physician scientists devoted to forwarding empirical knowledge and treatments for geriatric mental disorders is critical.

We conducted the present study to seek to understand what factors influence medical students' decisions about pursuing a career in academics and specifically in geriatric psychiatry or

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medicine. For purposes of this paper, an academic career refers to physicians working in academic medical centers with responsibilities for research, teaching, patient care, and service to the academic community at large. Published empirical literature on this topic is quite limited, although several groups have reported that intensive training at the fellowship or junior faculty level can have a significant impact on an individual's career path in aging-related research careers [9–12] and that research programs at the residency level increase affinity for research [13–16]. However, few studies have examined early pipeline factors that influence preference for academic careers in aging and psychiatry, although it is evident that medical student research training can impact retention in research careers overall [17]. In the following study, we sought to elucidate medical students' perspectives on factors that hinder or facilitate their interest in these career paths. This study focused on first-year students from different medical schools within the USA, who had demonstrated a strong evidence of affinity toward careers in aging and research, by completing a federally funded summer research training program.

Methods

The study included students who had recently participated in the Medical Student Training in Aging Research (MSTAR) program at the University of California, San Diego (UC San Diego), funded by the National Institute on Aging (NIA), over a 3-year period. The details of this program have been described previously [11]. Briefly, first-year medical students enrolled in any US medical school could apply. A majority of them had very limited (<1 year part-time) prior research experience. Trainees were selected for the program based on a review of applications submitted online to the American Federation for Aging Research, focusing on their potential for an academic career in geriatric psychiatry or geriatric medicine. Each student worked full-time for an average of 10 weeks during the following summer (generally between June and September) with research mentors at UC San Diego and also attended several didactic sessions. The students were provided with a modest stipend as part of the program.

Survey

At the conclusion of the MSTAR program, trainees were asked to participate in a web-based survey, which was sent to all 56 students who had participated in the program during the study period. Completion of the survey was not mandatory and was not linked with payment of stipends. Responses were aggregated (but not sent to the trainees' mentors). Questions included both close-ended (e.g., "what is the likelihood of your pursuing an academic career or a career in geriatrics including geriatric psychiatry, to be specified as 0 %, 1–

25 %, 26–50 %, 51–75 %, or >75 %?") and open-ended (e.g., "what are the factors that affect medical students' decision to pursue careers in academics or in geriatrics?") questions. This study did not require individual consent because it qualified for an exemption, according to US federal regulations (45 CFR 46.101[b]) as "research conducted in established or commonly accepted educational settings, involving normal educational practices."

Data Analysis

Analysis of answers to the open-ended question concerning perceived hindrances and motivations to choosing an academic and/or geriatrics career followed a general inductive approach where investigators focused on generating sub-themes within barriers and facilitators and identifying relationships among them [18]. Two authors (MAC and AI) collaboratively created a database of all the responses and then read through those several times to categorize the replies. Data analysis consisted of mixed qualitative-quantitative methods of coding, achieving consensus, identifying co-occurrence, and use of constant comparison [19] to identify sub-themes.

Results

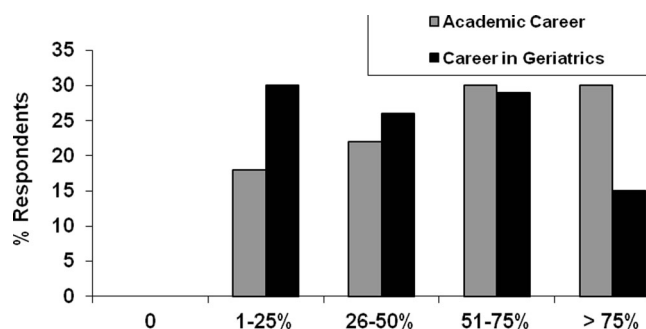
A total of 27 (out of 56) students responded to the survey, resulting in a 48 % response rate. This response rate is within the typical range for similar surveys of medical students [20–22]. The number of surveys analyzed is also well within the acceptable range for a qualitative study.

Quantitative Data

Career Choice We asked the students about the likelihood that they would pursue an academic career and/or a career in geriatric psychiatry or medicine (Fig. 1). A total of 60 % reported that they were likely (>50 % likelihood) to pursue an academic career whereas the proportion of students likely to choose geriatric psychiatry or medicine was about 44 %, and only 36 % for those who would do both—i.e., academic geriatric psychiatry or medicine.

Qualitative Data

As planned, our analysis of open-ended questions related to factors associated with the decision to pursue an academic career and a career in geriatric psychiatry or medicine focused on the two major themes that we had chosen at the beginning—i.e., barriers and facilitators. We found several sub-themes under each of these themes. Below are some illustrative quotes to reflect on medical students' perspectives relevant to different sub-themes.



Likelihood of Choosing Academic or Geriatric Career

Fig. 1 Medical students' self-reported likelihood of pursuing academic or geriatric careers. The figure shows percentages of medical students who reported the likelihood of their pursuing an academic career or a career in geriatrics

Barriers

1. Lack of Knowledge The most frequently perceived barrier (93 % of 27 respondents) was a lack of knowledge about academic careers and exposure to the geriatric population.

"I think that the idea of pursuing an academic career in geriatrics would be aided by more visibility of the subspecialty. It is not something that many medical students are aware of as an option for a career."

"We do not get that much directed education in geriatrics. I was never approached in medical school regarding academic opportunities in geriatrics (whereas I had been approached regarding research in cardiology, GI, infectious diseases., etc.)"

2. Financial Concerns Another common problem was a lack of adequate compensation (89 % of respondents). Most students who cited financial issues felt that they would not be as well compensated from an academic career as they would be in clinical work. They particularly pointed to the need for adequate compensation due to student loan debt incurred during medical school.

"Honestly, I think a lot of medical students feel the weight of their debt and think private practice may be more lucrative (which I also think is a lot less interesting, in my opinion.)"

3. Characteristics of the Older Population A number of students felt that the characteristics of the older adult patient population made the subspecialty less attractive (63 % of respondents). A few respondents felt that the population and health-care issues were not as challenging as working with other populations or medical problems. More often, however, the trainees pointed to difficulties

and challenges involved in working with the older patient population such as concerns about the ability to address the complicated medical care needs of these patients, having to deal with end-of-life care issues, and the perceived "depressing" nature of both the population and their declining health.

"Geriatrics: it can be frustrating at times because of the complexity of their care and inability to withstand most medical modalities of treatments."

"Many medical students are hesitant to enter the field because 1) compensation is poor, 2) the majority of patients you interact with are unlikely to ever be again in an excellent state of health, 3) they don't know how to interact with geriatric population."

4. Negative Impressions About Research Career A number of students mentioned negative impressions of research relative to clinical work (59 % of respondents). They felt that research was "too demanding" and required considerable time commitments and personal sacrifices, was very competitive, involved substantial grant writing, and offered a lifestyle not as appealing as that offered by clinical work.

"In many ways, it feels like the clinical path without research is "simpler"—you apply to a residency, and a few years later you are a practicing clinician. How research training fits into this is unclear at our level of training, and for this reason we feel like the path to become a researcher requires lots of extra planning on our part. It would, therefore, be helpful to receive information about research oriented residencies, how fellowships work, and what we can do now to head in the right direction."

"People are hindered mostly by the stressful atmosphere of an academic career, in which doctors must live month-to-month, always applying for grants and funds."

Facilitators

The respondents overwhelmingly felt that there were a number of ways that would enhance medical students' interest in pursuing careers in academic geriatrics, including positive exposure to geriatrics prior to medical school, opportunities to work with appropriate mentors, and financial support.

1. Positive Experiences with Older Adults The most commonly cited facilitator to pursuing a career in academic geriatric psychiatry or medicine was positive experience with or positive impression of the older adult patient population (37 % of respondents).

"I think early exposure to geriatrics can leave lasting impressions on medical students, especially when the interactions with the geriatric population are positive and significant."

"I enjoyed working with the geriatric population during the summer. I had never thought I would be interested in that population, this program really opened up my options."

2. Positive Experience with Research and Mentor The second most often cited facilitator was a positive experience with or positive impression of research, specifically with a mentor (33 % of respondents). Several respondents emphasized the role of mentors in promoting pursuit of an academic career. Eleven percent of respondents mentioned that choice of an academic career and/or working with older adult patients was a matter of individual strengths and personality.

"My lack of knowledge led me to believe that an academic career meant not interacting with patients and spending a majority of time in a lab. My experience with MSTAR and through interactions with more physicians as I have continued on through medical school has taught me that neither of my misconceptions is the rule. There are doctors that spend a lot of time caring for their patients. Also, many of them participate in clinical research which again allows for them to participate in patient care... My interaction with both patients and ... physicians has made me realize that there is a huge role for research as part of the care for patients who are not responding to typical treatments."

"Medical students may be better motivated by helping to facilitate good matches with principal investigators and possibly other more experienced students who have had positive experiences. The most important goals of doing so would be 1. facilitating successful projects, 2. motivating students indirectly through quality mentorship, and 3. allowing additional experiences beyond what MSTAR provides through the experience to publish and present through quality mentors."

"I think students are motivated to pursue an academic career by the desire to remain in an environment of learning and teaching where they can collaborate with others who are... working to move the field forward. What motivates ... students to go into academics is... (wanting) to be ... in the frontline curing diseases."

"It would be more valuable to us as students who are exploring the possibility of pursuing research to learn more about the researchers themselves than their particular research interests/projects."

"(Attending a conference) succeeded in making me excited about research. Seeing so many like-minded

peers from other medical schools was inspiring; it was a joy to get caught up in the collective... enthusiasm."

3. Increased Demand for Geriatric Care Another positive factor mentioned was the rising number of older adults in the population (22 % of respondents).

"The ability to help the chronologically gifted in aspects of medicine - this population will soon be a huge group of the medically served."

4. Other Specific Suggestions These included a brief program in geriatrics just prior to entering medical school, funding to support travel to a professional meeting to present research after a summer training experience, ability to return to the same lab in the future for additional experience, an opportunity to visit the National Institutes of Health, and a training-related website with information on additional training possibilities.

Discussion

There is a clear and pressing need to attract medical students to the field of geriatric psychiatry and medicine, especially in academic careers. We have a potential crisis of epic proportions ahead of us: not only will there be a greater demand for services based on sheer volume but also the new generation of older adults will have markedly different expectations for their own medical care. They are not a group known to "fade silently into the sunset," but are a generation of individuals known to challenge the status quo and ensure that their own personal needs are met [23]. The 2012 IOM report recommends major changes in how we train our health-care workforce to care for older adults, particularly those with mental health and substance use problems [24]. The IOM recommendations range from standardizing training to offering financial incentives to trainees and broadening the settings in which training is delivered. Our study adds the trainees' perspectives to those suggestions while focusing on academic career paths in the field of aging.

The study has important limitations. This was primarily a qualitative study with a small sample size. In addition, this was a specific group of students self-selected for participation in research training in geriatric psychiatry or medicine. Therefore, the findings may not generalize to all medical students. Furthermore, 29 of the 56 students, who participated in the summer research program, did not respond to the survey, and they might have had a more negative opinion of careers in academics and/or geriatric psychiatry or medicine. Future studies of medical students' perspectives on careers in

geriatric psychiatry or medicine should include larger number of trainees, especially those who have little or no interest in an academic career in aging. Finally, given that career choices can change during the remaining years of medical school training, it will be essential to employ longitudinal follow-up to obtain a clearer indication of the lasting effects of early-stage research training programs.

The findings of the study are somewhat sobering. Even though the sample consisted of medical students who had been chosen for a research training program based on their clear interest in and/or aptitude for a career in academic geriatrics, only 44 % felt that they were likely to choose a career in academic geriatric medicine or psychiatry. In addition, there seemed to be greater agreement among the respondents about individual barriers (from 59 to 93 %) identified than about facilitators (22 to 37 %). Thus, these students with demonstrated interest agreed more about negatives than positives of the academic geriatric profession.

Nonetheless, the data suggest several steps to increase the likelihood that more medical students would prefer academic geriatric psychiatry or medicine as the career trajectory. As described previously, many factors spanning individual, institutional, financial, and cultural domains influence physician scientist retention, and any “intervention” must be multifaceted [25]. First, medical school curricula should be revised to include early, consistent, and positive exposure to geriatrics and geriatric psychiatry. While the Accreditation Council for Graduate Medical Education (ACGME) has provided standards related to geriatrics and geriatric psychiatry, these need rethinking as our population ages. As an example, the UC San Diego School of Medicine completely redesigned its medical school curricula in 2010, with a specific review of geriatric content of each module of the new curriculum (including psychiatry) to ensure adequate coverage. Student input indicates that having early and positive exposure to older adults can significantly impact their opinion of what working with geriatric patients is like. Greater visibility of geriatrics and a demonstration of successful academic careers in aging to the medical students, especially in their first 2 years, will be of considerable value. An example of such an initiative would be introducing geriatrics as a subspecialty early in the first year of the medical school by having an orientation lecture by a leading institutional academic geriatrician or geriatric psychiatrist, who could also serve as a role model. There is a need to convey a sense that aging is not all gloom and doom, but can be a positive and enriching phase of life [26], and that research in geriatrics can be exciting because of the potential for preventive interventions that can be applied to youth too [27].

Similarly, providing medical students with opportunities to work in research settings may enable them to optimally evaluate what an academic career path entails. It is apparent that a number of the trainees have misconceptions about this career option—for example, an impression that physician careers

cannot blend clinical care and research and that one must choose one or the other. Equally importantly, availability of sustained and dedicated mentorship is essential. Last but not least, it is critical that we offer financial incentives to students considering academic careers, especially in an underserved subspecialty such as geriatric psychiatry or medicine. There are understandable concerns about their ability to pay off student loan debt and achieve a reasonably comfortable lifestyle. It is distressing to note that, as noted above, even in our sample of medical students who had a self-declared interest in research in older adults, 56 % of the students did not feel that the likelihood of their pursuing a career in geriatrics was high. A part of the reason for this reluctance to pursue a career in aging may be related to the declining Medicare reimbursement rate during recent years. Financial incentives in the form of adequate compensation for physician services provided to older adults as well as federal loan repayment programs for those who seek fellowship training in geriatric psychiatry or medicine are likely to have an impact on medical students’ career choices.

Although this study was focused on academic careers in geriatrics and geriatric psychiatry, we believe similar considerations would apply to other underserved subspecialties too—e.g., child and adolescent psychiatry, addiction psychiatry, and psychosomatic medicine.

In conclusion, medical students’ attitudes about future careers in academic geriatrics and other underserved subspecialties require careful attention. Although a number of excellent programs target research training in psychiatric residency, our study suggests that research involvement earlier in the pipeline may be necessary [13–16]. Attracting capable and motivated medical students to academic careers in fields such as geriatric psychiatry or medicine should be a priority in seeking to expand the geriatric workforce as a part of the efforts to avert a looming crisis in health care for older adults.

Implications for Academic Leaders

- There is a critical need to motivate and attract medical students to academic careers in geriatric psychiatry or geriatric medicine in view of the rapidly growing numbers of older adults with unique health-care issues and a dwindling supply of academic physicians in this field.
 - The current medical school curriculum involves very limited exposure to geriatrics, and most students have negative impressions of careers in aging.
 - Greater visibility of geriatrics and a demonstration of successful academic careers in aging to the medical students, right from the first year, are warranted.
 - Availability of sustained and dedicated mentorship in geriatric psychiatry and geriatric medicine is essential.
 - Financial incentives in the form of adequate compensation for physician services provided to older adults as well as federal loan repayment programs for those who seek fellowship training in geriatric psychiatry or geriatric medicine are called for.
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