ORIGINAL INVESTIGATION

The Impetus Behind Choosing a Medical Specialty
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Aleksandra Dukhan, BS1,2; Carly Chamberlain, BA1,2; Richard Terry, D.O1,2
1Lake Erie College of Osteopathic Medicine, 1858 W. Grandview Blvd. Erie, PA 16509
2Arnot Ogden Medical Center, 600 Roe Ave Elmira, NY 14905

ABSTRACT

Selecting a specialty is an important step in a medical student’s education, and many believe this choice is more difficult than the decision to attend medical school. With so many changes occurring in the medical system, including the increasing reliance on electronic medical records, the merger of the American Osteopathic Association (AOA) and Accreditation Council of Graduate Medical Education (ACGME) residency programs, and the increasing number of women entering the field, we conducted a study to determine the impetus today behind how individuals choose their medical specialty. To determine the most significant factor influencing an individual’s choice of specialty, we created a seven-question survey that was made available to students, residents, fellows, and attendings at one medical school and one community teaching hospital system. The results of the study, collected from 282 completed surveys, showed that personal experience was the most influential reason amongst those surveyed for selecting a residency specialty (p < 0.05). One limitation of the study was that 56.7% of respondents were students who had not applied to residency, while 16% were in the process of applying, but had not yet matched. A future study could explore if, upon matching in residency, the students maintained their desire for the same specialty. Another limitation of the study was that individuals were only surveyed within a single hospital system and one medical school’s closely affiliated sites. Therefore, there were limited individuals available to survey. Additionally, more hospitals should be contacted to obtain results from a greater number of practicing physicians.

INTRODUCTION

Choosing a specialty is an important and inevitable step in a medical student’s education. This selection not only has a significant impact on the course of the student’s education and life, but also greatly affects the entire healthcare system. Depending on students’ specialty choices, there could be a shortage or abundance of physicians in varying specialties, leading to a disequilibrium of available resources. This problem was exemplified in a study published by the Journal of the American Medical Association, where medical students’ preference for specialties with controllable lifestyles and income correlated with significantly lower residency fill rates in specialties such as family practice and general surgery.

Medical specialties have been categorized in two different ways: person-oriented specialties such as family medicine, versus technique-oriented medicine, such as surgery, and primary care specialties versus non-primary care specialties, respectively. Both of these categorizations are an over-simplification of the specialties students can choose. For example, a person-oriented specialty like family medicine may include a fair amount of procedures like joint injections, osteopathic manipulative
treatment, and biopsies. In addition, a specialty such as obstetrics and gynecology, which is often categorized as a primary care specialty, has a vast array of procedures such as deliveries, cesarean sections, pap smears, hysterectomies, and endometrial dilation and curettage. Some students have reported that choosing what type of medical doctor to be is more difficult than choosing to become a physician in the first place.  

In 2015, the Association of American Medical Colleges (AAMC) released a study showing that 56% of medical students changed their preferred residency specialty before completing medical school. ¹ This number has increased in prevalence when compared to a study in 1997 that showed only 75% of students, at the completion of medical school, selected specialties within their matriculation preference. ² Despite the lack of continuity in specialty preference from the beginning to the conclusion of medical school, this data shows that most medical school entrants have a specialty in mind when embarking on their medical education. This trend in changing specialty preference during the four-year course of medical education is significant in the American healthcare system. Why students decide to change their specialty choice and what influences they have in their education that persuade them in one direction over another is an area that requires more analysis. Our survey attempts to determine what major variable in one’s experiences leads them to their specialty of choice.  

Many factors impact an individual’s specialty choice and these influences vary between countries and gender. Per Alawad et al., in the United Kingdom, society’s opinion of the specialty and fewer practice hours were the most important swaying factors, while in Turkey, monetary compensation and high regard for the specialty were considered of utmost significance. Meanwhile, in Sudan at the University of Medical Sciences and Technology, personal interest was by far the most influential factor in choosing a specialty. ² Gender has also been shown to affect a person’s specialty selection, as both males and females tend to choose specialties based on gender norms; females usually choose pediatrics or obstetrics and gynecology, while men tend to lean toward surgical specialties. ²  

Over the last two decades, the medical field has seen many advances and changes. The electronic medical record has become the basis of record keeping. ⁹ The Affordable Care Act was passed in 2009, providing insurance to a greater number of Americans. ¹³ Most recently, the Accreditation Council for Graduate Medical Education (ACGME), American Osteopathic Association (AOA), and American Association of Colleges of Osteopathic Medicine (AACOM) came together to create a single graduate medical education accreditation system in the United States, allowing allopathic and osteopathic graduates to complete their residency in ACGME-accredited programs, while demonstrating achievement of common competencies. ⁶ With this merger, there will be at least a 20% deficit in first-year residency positions annually, thereby increasing individuals’ chances of not matching into residency on their first attempt at the completion of medical school. ¹² Also, women outnumbered men in the 2017 medical school entering class, comprising 50.7% of the new members, which has not been the case in prior years. ⁸ Finally, retention of physicians, especially in rural community hospitals has become a growing problem. In the southern tier of New York State especially, 33% of hospitals have had to eliminate specialty services because of an inability to retain hired physicians. ¹² With this evolution of the medical field, it would be remiss not to re-evaluate the reasons driving people into medicine and particularly, into their specialty of choice.  

To evaluate the major reasons future and current medical professionals choose their respected specialties, a survey was conducted amongst a sample of students, residents, fellows
and attendings, at a community hospital system and affiliated medical school. The survey asked for participants to state their chosen specialty and select why they chose this specialty from five categories. The data collected from this research is explained in this paper. Our findings concluded that personal experience was the most selected factor affecting their choice amongst 8 of the 10 specialties.

**OBJECTIVE**

This study was conducted to determine the main influencing factor on medical professionals in choosing a specialty. We conducted a survey aimed at medical professionals in various stages of their career. We hypothesized that the majority of individuals in the medical field chose their medical specialty from personal experiences. Prior studies in Sudan have shown a similar category, titled “personal interest”, to be the most common prognosticator in a student’s selection of medical specialty. We anticipated similar results amongst American medical students and professionals based off an article published by the Harvard Business Review. This article demonstrated that most millennials, individuals born between 1980 and 1996 who are currently entering the work force and thus applying to medical schools, search for jobs that provide opportunities for growth and development within their chosen fields. Though income is important, it was not in millennials’ top five factors when applying for jobs. “Millennials largely want the same things from their employers as most generations. They look for growth opportunities, great managers, and jobs that are well-suited for their talents and interests,” the latter of which is likely determined through their education and prior work experiences. In turn, the null hypothesis states that there is no relationship between personal experience and the choice of medical specialty.

**INTRODUCTION**

Per Survey Monkey data, people are more likely to complete a survey if it takes less than five minutes and if the questions are short, clear and apply to them. With these characteristics in mind, survey questions were composed by the primary author and reviewed for clarity and conciseness by two subsequent authors. Surveys were generated using Survey Monkey. All physicians, fellows, residents and medical students at Arnot Ogden Medical Center, as well as the students at Lake Erie College of Osteopathic Medicine, and other medical students, residents and attending physicians from other Lake Erie College of Osteopathic Medicine affiliated clinical sites, were given access to the survey via email and a Facebook post on the medical school’s main page, which was shared by fellow students and administrators, and were asked to complete it. The survey contained a total of seven questions.

1. **Where are you in your medical career?**
   a. The provided answer choices included: First Year Medical Student, Second Year Medical Student, Third Year Medical Student, Fourth Year Medical Student, Traditional Rotating Intern (TRI), Resident, Fellow, and Attending.

2. **What was the most significant factor that influenced your decision to become a physician?**
   a. The provided answer choices included: family tradition, monetary prospects, personal medical experiences, influential advisor/mentor, desire to grow from a prior medical career, childhood dream, and other.

3. **What (will be/currently is/formerly was) your specialty in residency?**
   a. The answer choices included: Internal Medicine, Family Medicine, Obstetrics and Gynecology (OBGYN), Pediatrics, General Surgery, Psychiatry, and other.

4. **What is/was the driving influence for your
residency specialty selection?
   a. The answer choices included: board scores, mentor influence, family influence, fellowship goals, monetary goals, personal experience, and other.
5. What (will be/currently is/formerly was) your fellowship?
   a. The answer choices included: Not applicable or a fill in for specialty of choice.
6. “What is/was the driving influence for your fellowship specialty?”
   a. Answer choices included: board scores, mentor influence, family influence, monetary goals, personal experience, other, and not applicable.
7. If you would like to share further information regarding the driving force behind your medical specialty selection, please do so below (optional).
   a. This was an optional fill in question.

A total of 282 survey responses were collected and the data was analyzed using chi-squared, with a level of significance at 0.05, to determine if there was a significant difference between the expected and observed frequencies in our pre-determined categories, on Microsoft Excel to compare categorical data. \(^{17}\) Chi-squared test for independence was performed to see if there was an association between the two variables: medical specialty and influencing factor behind choosing a medical specialty. This test was determined to be the most appropriate for the data because we used simple random sampling, our variables were categorical, and the expected frequency for each cell in our contingency table was at least five. We assumed an equal distribution of expected values for each answer choice. The sample included a wide distribution of medical specialties such as family medicine (45), internal medicine (52), obstetrics/gynecology (13), pediatrics (31), general surgery (23), psychiatry (15), anesthesiology (14), radiology (11) and other (44). If participants selected “other” they were asked to specify. Responses for “other” included, neurology, emergency medicine, ophthalmology, pathology, urology, physical medicine and rehabilitation, orthopedics, oncology, plastic surgery, neurosurgery, and otolaryngology.

Survey responses, 282 in total, were collected

![Graph 1: Where are you in your medical career?](image)

**Figure 1.** Representation of the answer to question 1 of the survey.
RESULTS

from individuals at varying levels in their medical career, ranging from first year medical school student through attending.

“Where are you in your medical career?”
The results showed that 72.69% of the responses were from medical students: 29 first-year, 40 second-year, 91 third-year, and 45 fourth-year medical students. Physician responses included: 3 traditional rotating interns, 36 medical residents, 5 fellows, and 33 attending physicians (Graph 1).

“What was the most significant factor that influenced your decision to become a physician?”
The results (Graph 2) showed that the most significant reason for deciding to become a physician was “childhood dream” (p <0.05).

“What is/was the driving influence for your residency specialty selection?”
In this category, 1 of the 282 responses was not included, bringing the sample size down to 281, as the question was answered inappropriately.

Our results showed that for eight specialties (Family Medicine, Internal Medicine, Emergency Medicine, Pediatrics, General Surgery, Psychiatry, OB/GYN, and Other), personal experience was the most prevalent influence in choosing a residency specialty. Chi squared test for independence demonstrated significance at p <0.023. For Anesthesiology and Radiology, there was no correlation between personal experience and selecting those specialties (Graph 3). The results are depicted in Table 1. Due to the significance of the analysis (X² =19.28), the alternative hypothesis that there is a significant difference between our observed values and the expected values is accepted. This indicates that there is far more significance in choosing a medical specialty based on personal experience compared to other variables. Additionally, as the p value is less than the alpha value (<0.05), type II error is unlikely.

Using Chi squared test for independence, the data collected from this study also showed that there is no relationship between the type of medical specialty and the driving influence behind choosing that type of specialty. Specifically, primary care was compared

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**Figure 2.** Representation of question 2 of the survey. Of 282 responses, 124 selected childhood dream as their primary influencing factor pursuing medicine.
Figure 3. Responses to question four in the survey. It shows the seven answer choices and the distribution by specialty.

Table 1. Using Chi squared goodness of fit, depicts the calculations used to determine if there was a significant difference between the expected and observed frequencies. Expected values were calculated by multiplying the total of each corresponding row by the total of each corresponding column and dividing this number by the total number of responses (281).

Figure 4. visual depiction of the responses to question 6 of the survey.
against non-primary care specialties. Primary care was considered to be Internal Medicine, Pediatrics and Family Medicine, as was established by Burack et al, and every other medical field was categorized as a “non-primary care” specialty. 3 We hypothesized that the reason for choosing a specialty would vary based on the specialty chosen, however the p-value was 0.60 which was insignificant, and thus the null hypothesis was accepted.

“What is/was the driving influence for your fellowship specialty?”

Further training, which involves choosing to pursue a specialized fellowship, was also analyzed with our survey. From the 282 responses, 181 people responded, “not applicable” as it is assumed that these survey participants are not pursuing a fellowship training. From the remaining 101 responses, 61 chose “personal experience” as their driving influence, which we found to be statistically significant with a p < 0.05 (Graph 4).

To evaluate the major reasons medical professionals choose their respected specialties, a survey was conducted amongst individuals within different stages of their medical career. The data obtained from the 282 survey responses concluded that childhood dream was the most significant factor in individuals’ decision to become a physician, personal experience was the most significant deciding factor for choosing a specialty, and personal experience was the leading factor in individuals’ fellowship choice.

Childhood dream was the most significant factor in the decision to become a physician with the second most common influencing factor being personal medical experience. As individuals did have the option to fill in a different, not listed reason, or explain the one they chose, such as childhood dream, one individual summarized the thoughts of many by stating they “wanted a career that was meaningful” while eight others expressed that they had an inherent interest in medicine, or helping others, and couldn’t see themselves doing anything else.

Chi-squared test for independence demonstrated that there was a relationship between personal experience and the choice of medical specialty for our sample. There are many different paths an individual can pursue in medicine and the reasons that give rise to these decisions can vary significantly. With the many different factors that lead to choosing a medical specialty, according to the data collected in this study, personal experience is the most significant element in this decision-making process. “Other” was the second most selected answer choice with 14 individuals writing work/life balance and lifestyle as their reasoning for choosing their specialty. Further research into the “personal experience” factor could include when the particular “experience” occurred. Do these experiences typically influence specialty choice prior to any medical education? Alternatively, do experiences during medical education primarily impact specialty choice, as seen in the open-ended response by one individual who stated that they chose their specialty because it was the “rotation I liked the most (in) 3rd year?”

Personal experience was significant in fellowship specialty choice as well, with mentor influence being the second most common reason for choosing a fellowship. It is interesting to note that of 84 individuals who have completed, are in, or are applying to fellowships, only one individual cited fellowships as both their reason for fellowship and choosing the medical career. This finding could suggest that the decision to pursue fellowship training is something that medical professionals determine during their careers in medicine. Therefore, it would be reasonable to conduct further research regarding the decision to undergo fellowship training.
training, targeted at current resident physicians and medical students further along in their education.

Though this study produced significant data, there are several limitations of this study. Primarily, the majority of the surveys were completed by medical students, most of whom had not yet matched into a residency. Depending on how they match, their specialty choice could have changed. Secondly, this study mainly surveyed one hospital system and thus had a limited number of residents, fellows and attendings. Finally, the survey sent out did not include a question regarding gender. A gender imbalance amongst those who responded has the potential to skew the results as it has been shown that there are gender disparities among medical specialties. Women have been more prevalent in specialties such as family medicine, pediatrics and obstetrics and gynecology, while men have typically held more positions in surgery, anesthesia, and radiology. 14 However, as more women are graduating from medical school, a shift from women choosing primary care specialties to more specialized training could be expected. Gender distribution in the survey would have provided insight into medical preference trends among men and women.

A follow up study of medical students would be of interest to determine if they match into a different specialty than originally desired. The merger of the AOA and ACGME accreditation may drastically alter the distribution and availability of specialties to osteopathic students, further impacting the specialties selected by future medical professions. With less residency positions available and more competition for each spot, students may find themselves “settling” for specialties they did not originally see themselves pursuing. For this reason, the predominant answer to our question, “What is/ was the driving influence for your residency specialty selection?” may resemble more circumstantial variables like board scores, rather than personal experiences. Finally, a future study should also aim to see if there is a difference in the specialties predominantly chosen by women versus men to see if gender norms have changed.

Another facet of selecting a medical specialty that this paper did not delve into is the effect that ethnicity, religion, and cultural background has on one’s decision for choosing their medical route. In Vietnamese culture, for instance, male practitioners are not allowed to touch their female patients outside of checking their pulse.19 Would this cultural upbringing deter such individuals from pursuing an OBGYN specialty? In Orthodox Jewish households it is important to know that contact outside of hands-on care is prohibited when interacting with the opposite sex.20 Would this restriction result in more individuals, of this background, to pursue medicine where personal contact is minimally required, such as diagnostic radiology? Increasing the diversity of a healthcare team is crucial for providing adequate care within America’s ever-growing minority communities. Thus, recognizing what drives individuals of different cultural backgrounds is of utmost importance.

Lastly, this data may also be important for understanding the distribution of medical specialties in underserved communities. Given the predicted shortage of general practitioners in the near future, 4 this information could be applied to medical school curricula in an effort to encourage medical students to pursue careers in primary care and other specialties where there is a shortage. If personal experience is the main contributing factor to individuals choosing their medical specialties, increasing medical students’ exposure to much needed specialties may help sway them into these fields.

CONCLUSION

Based on the survey data, choosing a medical specialty after years of education is a thoughtful decision highly motivated by personal
experience. Arguably, it would be inappropriate to advise medical students to weigh other variables more favorably, as this decision should be based on preference, comfort and a sense of purpose. It is reassuring to see that monetary expectations and standardized test scores did not play as strong a role in the participant sample. With that being said, medical students should take into account a variety of factors when choosing a medical specialty. Family influence was an answer choice in this survey that was selected 16 times, as compared to the 154 individuals who selected personal experience. Although this may seem trivial to some students, with the increasing rates of burnout among residents and physicians, many students find that they need higher degrees of family support. If a medical student is determined to balance their career with family relationships, this variable should be carefully considered when choosing a medical specialty.

The merger of the AOA and ACGME residency programs into one match will arguably have lasting impact on the distribution of medical specialties. With the merging thus far, only 72% of AOA training programs have received or applied for ACGME accreditation. It can be assumed that the loss of these positions will affect the availability of spots for all medical students and create a greater disparity in the number of medical students graduating each year and the number of training positions available.

This study demonstrated that personal experience had the greatest impact in choosing a medical specialty, regardless of specialty choice. With the changes happening within the American health care and medical school systems, these surveys should be repeated with each new change to see if medical students continue choosing specialties based on individualized preferences and experiences or if their decisions are swayed by uncontrollable factors such as residency position availability. Medicine is a challenging career to pursue, as is evidenced by the frequency of burn out. If the impetus behind choosing a medical specialty changes with all these new adjustments in the medical system, it will be interesting to see what happens to the rate of student burn out.

LEARNING POINTS

1) Personal experience is a significant factor in the decision making process for choosing a medical specialty and fellowship, which correlates to prior studies on millennials and their job preferences.
2) Childhood dream is a significant factor in the decision making process for pursuing a career as a physician.
3) This study shows that in individuals pursuing radiology and anesthesiology, personal experience was not a significant influencing factor, unlike the other specialties because of income/salaries or assumed lifestyles of these specialties being larger variables. There was also a smaller sample size of people who chose Radiology and Anesthesia which would therefore result in a lower power/significance.

REFERENCES


