



Clerkship Experiences During Medical School: Influence on Specialty Decision

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Abstract

Objective Clinical rotations during medical school are the time when most students select their specialty. Limited or lack of exposure could deter students from certain sub-specialties, and thus, insight into the selection process is essential. This study assesses the role of limited clinical rotations and perception of students on specialty selection.

Methods All graduating medical students were surveyed at our US-based institution for 2 years. The survey included both open- and close-ended questions related to influence of clerkship experience and other factors on specialty choice and suggestions for improvement. The data were analyzed descriptively and thematically.

Results Majority of students (87%) had minimal exposure to their chosen residency specialty prior to the third-year clerkships. Role of a clerkship experience in selecting a specialty was significant for 70% students, especially interaction with attendings (92%) and residents (86.3%). The most influential reasons for specialty choice to change were clerkship experience (41%) and mentors (21%). Approximately 34% students chose a specialty that was not a part of third-year core clerkships, and the most significant factors influencing their choice were shadowing experience (21%) and lifestyle (18%). Further, thematic analysis suggested that earlier and more clinical exposure to various specialties and formal mentoring could make specialty selection process easier.

Conclusions Along with specialty content, the relationship of learners and teachers in the clinical setting plays a significant role in selecting and/or rejecting certain specialty by medical students. The study provides broader baseline data for medical schools and educators in preparation of curriculum and future physician workforce composition.

Keywords Specialty choice by medical student · Influence of clerkship · Clerkship and specialty choice · Medical education

Introduction

Across the globe, majority of a medical student's initial clinical exposure comes during medical school, from the fourth and fifth years in 6-year programs and the third year in 4-year programs [1]. This is typically the first time most

medical students experience the clinical side of medical practice and develop initial impressions about the various specialties. These experiences likely play a role in a student's career decision. Therefore, gaining insight into students' perception and identifying criteria for selecting medical specialties during this period might provide a better understanding on the decision process. Moreover, society is interested in knowing how medical students make such choices since it is an important determinant of the future supply and composition of the physician workforce in different specialties.

Generally, in North America, where the medical school curriculum is divided into a 4-year program, the third-year curriculum entails the clinical training phase where students rotate through six specialties: family medicine, internal medicine, psychiatry, surgery, pediatrics, and obstetrics and gynecology. Thus, there are a great many specialties that a

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student is not exposed to, yet they are still expected to apply for a residency at the end of third year.

Many studies have evaluated how such experience through the clinical training phase, also known as clerkship, influences students' perception, and/or interest in a specialty. Most studies suggest that the clerkship experience portrays a positive impression for the specialty selected [2–6]. While this “impression” may be of significance, there remains a lack of exposure to the many other specialties. The clerkship experience for most students is their first exposure to the clinical care arena, and there are many components involved in each clerkship experience (i.e., required activities/didactics, mentors, degree of autonomy) that differ clerkship-to-clerkship that may cause a student's interest to either increase or decrease.

Current literature focuses on exposure of medical students to specific specialty and decision making and not the overall process of selecting a specialty. Furthermore, there is minimal use of qualitative approaches on the perceptions of students about their specialty selection process, e.g., why students change their specialty choice following their clinical exposure. Thus, the goals of this study were to use both quantitative and qualitative data to determine if the lack of exposure is deterring students from certain specialties and to explore additional factors that influence students to choose a specialty following their initial clinical exposure of the clerkship.

Methods

For this study conducted at a US-based allopathic medical school, there were six required 3rd-year clerkships: family medicine, internal medicine, psychiatry, surgery, obstetrics and gynecology, and pediatrics. Clerkship length ranged from 4 to 8 weeks. Each clerkship included supervised in-hospital and ambulatory experiences, didactics, and supplementary learning sessions. All graduating students from years 2017 and 2018 were surveyed on “Match Day,” the day in the USA when residency programs decide which students to take. The survey, using both open- and close-ended questions, explored timing of specialty choice, whether or not it changed, and influences on making the final choice.

Narrative responses to the open-ended questions captured perceived influences on choice as well as ideas on how the institution could further facilitate the residency selection process. The close-ended survey data were analyzed using descriptive analysis while open-ended qualitative data were analyzed using constant comparative method [7], and emerging themes were reported. This study was reviewed and approved by the institution's Institutional Review Board.

Results

A total of 183 out of 195 graduating fourth-year medical students from the 2017 and 2018 classes completed the survey with the response rate of 93.8%; 45% were female. Overall, 122 (66.7%) students applied to a specialty experienced in the third-year core clerkship phase, while 61 (33.3%) students chose a non-core specialty. Seventy-six percent (76%) of students rated the role of clerkship experience in specialty choice as either extremely significant or significant.

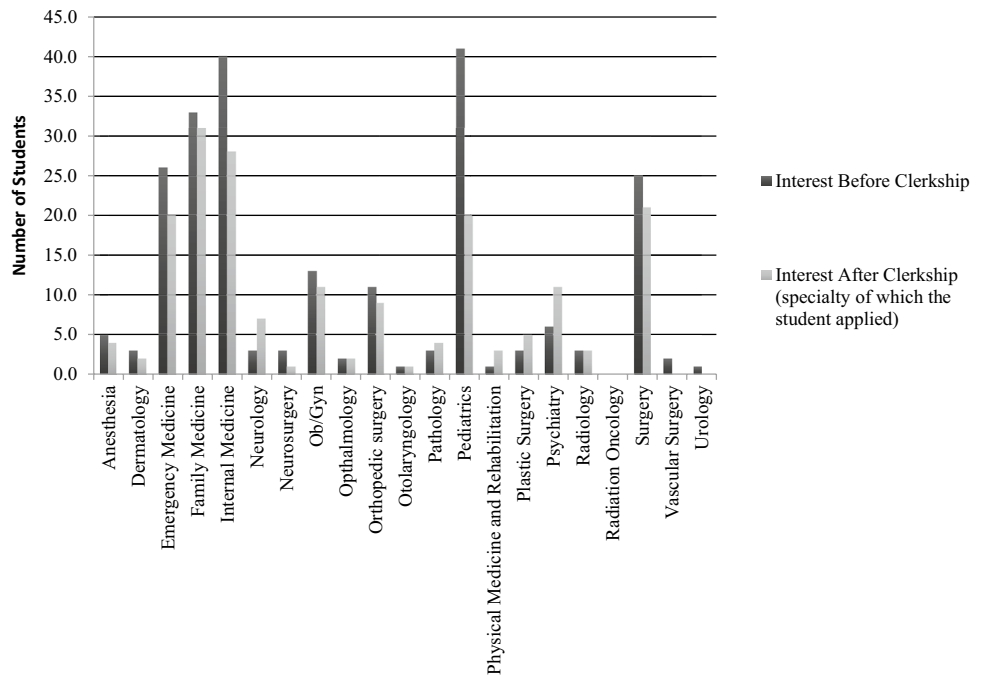
Exposure to a student's selected specialty prior to their clerkship rotation was rated as “none” or “minimal” by 42%. The majority of students agreed that their interactions with residents or attendings during the clerkship influenced their specialty choice (Table 1). The majority of students agreed that their clerkship experience reinforced their desire to pursue their chosen specialty, if applicable. Overall, most students stated they were satisfied with the lifestyle and time commitment aspect of the clerkship of their chosen specialty. Likewise, the majority of students (98%) stated that they were satisfied with their overall involvement of the clerkship of their chosen specialty (Table 1).

Many students changed their specialty interest after the third-year clerkship experiences (Fig. 1). Results indicated that students' interest increased the most for neurology (57% increase) and psychiatry (45% increase) specialties. The specialty interest decreased most significantly for pediatrics (53%) and internal medicine (30%). Moreover, students' interest decreased for many other specialties that are not a part of the core clerkship phase, including vascular surgery, neurosurgery, dermatology, anesthesiology, orthopedics, emergency medicine, and urology. However, there was an increase in some specialties that are not included

Table 1 Role of clerkship experiences in specialty choice

	Strongly agree/agree	Disagree/strongly disagree
Interaction with attendings influenced decision to select this specialty	93%	7%
Interaction with residents influenced decision to select this specialty	89%	11%
I was satisfied with the lifestyle and time commitment aspect of this clerkship	96%	4%
I was satisfied with my overall involvement with this clerkship	98%	2%
Clerkship experience reinforced desire to pursue this specialty	98%	2%

Fig. 1 Change in specialty interests in medical students before and after clerkship experiences



in the curriculum as well, including physical medicine and rehabilitation, plastic surgery, and pathology.

For students whose specialty choice changed following the third year, the most influential reason for their ultimate decision was their clerkship experience of the chosen specialty (41%) followed by specialty lifestyle (19%) and mentors (21%) (Fig. 2). For students who chose a specialty outside of the clerkship curriculum, shadowing experience was the most influential reason (21%) followed by lifestyle (18%), away rotations or electives (18%), and mentors (17%) (Fig. 3).

Thematic analysis of qualitative data identified different themes as shown in Table 2. The students provided

reasons and/or factors that influenced their ultimate specialty choice, be it either to pursue their initial interest or to change interest. One of the primary reasons for their final decision was the *intrinsic content* of the specialty. Specific examples included type of work, scope of care, intellectual stimulation, personal interest, patient population, acuity, continuity, and subspecialty opportunities. Specific comments included:

“I was interested in internal medicine and OB/GYN, and family medicine incorporated both.”
 “I think that surgeons are the best all around doctors, and that is what I wanted to be.”

Fig. 2 Most influential reasons for specialty interest to change in medical students

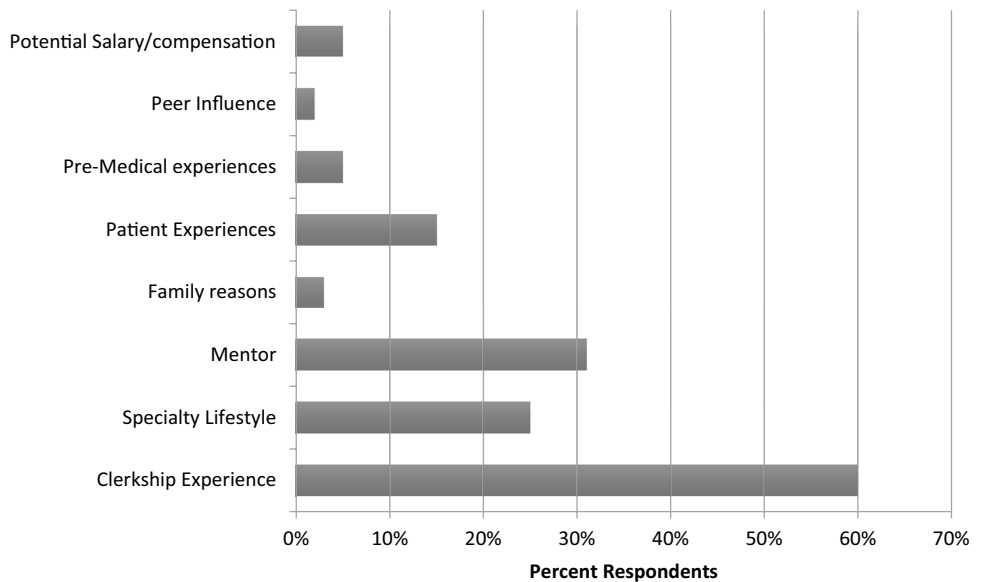
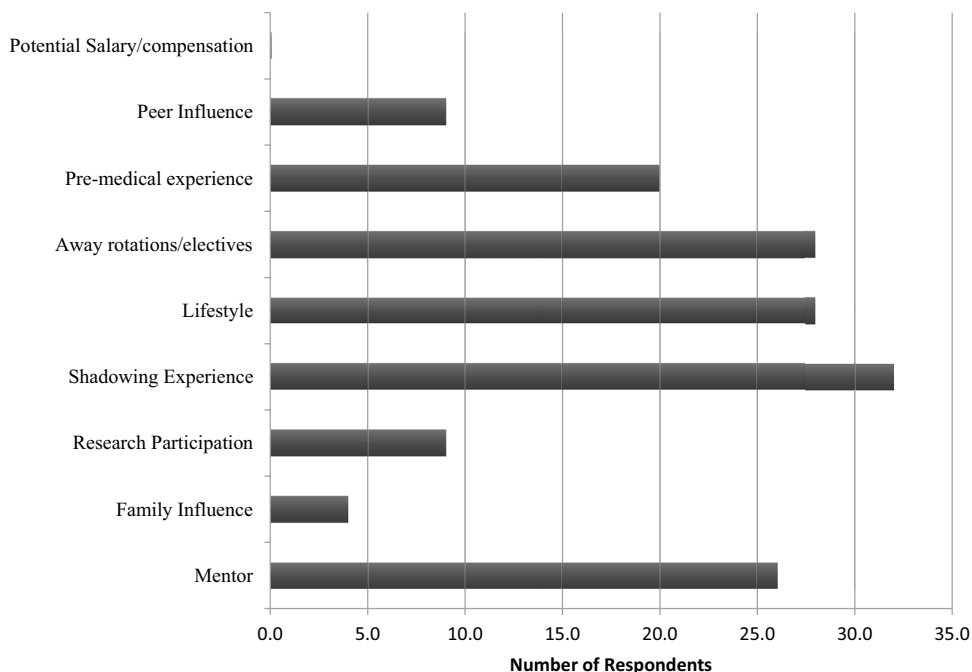


Fig. 3 Factors influencing specialty choice for students selecting a non-core specialty



“I love kids! They make me happier than any other specialty.”

“Patient population, patient outcomes, ability to directly fix pathology (influenced the choice).”

Students also discussed specific *clerkship and medical school experiences* that influenced their decision. These experiences included factors such as faculty support, mentors, research experiences, academic conferences, and resident/attending interactions. Below are some specific comments from the students:

“Kindness of residents and attendings.”

“Poor pediatrics experience with residents so applied for family medicine.”

“I enjoyed my experience. Good mentors too, especially Dr. X, helped me gain further interest”

“Overall disappointment with my surgery experience changed my interest. Particularly experiences with residents and attendings.”

Many students also indicated *lifestyle, salary, and peer-influence* as factors that influenced their decision. For example, influence of family and friends, and competitiveness and rigor of specialty, including reasonable hours, good compensation, and choice of location for practice. Specific comments included:

Table 2 Results of thematic analysis and emerging themes

Area	Theme	Description
Factors that influenced decision to apply to chosen specialty	Intrinsic specialty content	What the specialty entails, scope of care, patient population, personal interest
	Medical school/clerkship experiences	What the medical school has to offer such as clerkship experiences, faculty support, mentors, research experiences, and academic conferences
	Lifestyle/salary	Career opportunities, competitiveness and rigor of specialty including reasonable hours, good compensation, and choice of location for practice
Suggestions for improvement	Earlier exposure	Earlier exposure of various residency specialties or subspecialties in years 1 and 2
	More exposure	More exposure to specialties/subspecialties throughout medical school
	Formal mentoring and career advice in specialty	Mentoring from both academic and non-academic physicians, official mentoring program, matching of student and mentor in a chosen specialty, and more mentoring on available fellowship options in chosen specialty

“Reasonable hours after residency, good compensation.”
 “Good hours and not that competitive.”
 “ Friends spoke highly of radiology”

Students were also asked if there was anything the medical school could have provided to facilitate their specialty decision. Overall, students requested earlier and more exposure to specialties and subspecialties throughout medical school. One student even suggested “mandatory shadowing in 1st and 2nd years.” Students in general, and especially those who applied for more competitive surgery and surgical specialties, requested more access to faculty members and mentors in both academic and non-academic areas with enhanced mentoring. For example, students provided following comments in response to what more medical school could have provided:

“Better guidance in competitive fields. I did a rotation in urology and they indicated that I should have applied whereas my local advisor told me not to.”
 “Official mentor in specialty.”
 “More exposure to options available, research opportunities, exposure to non-academic surgeons.”
 “Better exposure to ENT and better mentorship.”

Discussion

The decision-making process for all medical students about specialty choice often starts before matriculation and evolves. The clinical rotations during either medical school or internships introduce medical students to various specialties and subspecialties so students can decide their specialty choice. Current literature on impact of clerkship experience on specialty choice is limited to specific specialties [8–11], and do not provide students’ perceptions on the process or evaluate change in students’ interests [12]. Further, factors prompting students to choose a specialty outside of the realm of the clinical rotations and curricula are not investigated thoroughly. We believe that learning more about how students change their specialty choice and select one within or outside of core clerkship areas could help improve medical school clinical curriculum planning and student learning, which was the primary goal of the study.

Our study suggests that clerkship experience and mentors were the most significant factors for those students whose specialty choice changed following third year. Our results confirm previous findings that effective mentorship and clinical instruction result in greater student satisfaction and could influence interests in specific specialty [10, 13–16]. The majority of the students in our study

indicated that their interactions with attendings and residents throughout clerkships were influential. However, thematic analysis of our data also suggested that such interactions during clerkship of the primary interest specialty could have negative influences on the students’ perception of the specialty, and it could drive them to change their interests and select a different specialty. Such observations emphasize the importance of faculty development, to empower faculty and residents to enhance their mentoring of students [17]. For students who chose a non-core specialty, shadowing experience, lifestyle, and away rotations/electives were the most influential factors for specialty choice.

Previous studies reported that work content and lifestyle are a vital factors in regards to specialty choice [12]. Our students suggested patient population, intellectual challenge, personal interest, compensation, and work hours as important features of a specialty. Therefore, accurate representation of the intrinsic content of a specialty is important throughout a student’s clerkship experience. Additionally, students recommended that earlier and more exposure to various specialties and subspecialties, and better access to mentors could help with their decision making. These results are consistent with previous studies suggesting that early subspecialty exposure may influence a student’s specialty decision [18–21].

This study was conducted at a single medical school in the USA, and its findings may not generalize to all US schools or international schools where curricular variation and cultural differences are important variables. For example, emergency medicine is not a part of core clinical rotations for our students but is at other US schools and during the clinical phases of international schools. International schools with 2–3-year clinical phases, plus a year of internship, might provide students with broader experiences across more specialties prior to selecting their specialty.

In summary, the path to a student’s specialty selection may be forged by more exposure throughout the early years of medical school. The faculty and resident interactions with students influences a student’s decision as well. However, there are many other factors that likely contribute to a student’s specialty selection that are outside the realm of a clinical experience. Assuring opportunities for proper mentorship and a variety of clinical exposures throughout the medical school is essential to help guide a student’s decision-making process. Further, more shadowing opportunities may help students who ultimately choose a non-core specialty.

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Declarations

Ethics Approval This study was reviewed and approved by the Institutional Review Board at Wright State University.

Conflict of Interest The authors declare no competing interests.

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