

Factors That Influence Student Choice in Family Medicine: A National Focus Group

Mustafa Alavi, MD; Tiffany Ho, MD, MPH; Chandler Stisher; Emma Richardson; Christina Kelly, MD; KrisEmily McCrory, MD; Katie Zurek, MD; Mandy Ward Boltz, MD, MPH; John Snellings, MD

BACKGROUND AND OBJECTIVES: The Family Medicine for America's Health Workforce and Education Team aims to increase the number of medical students choosing family medicine to address the projected primary care physician shortage. This aim can be achieved by developing a well-trained primary care workforce. Our student- and resident-led FMAHealth work group aimed to identify factors that influenced fourth-year medical students' choice to become family physicians. The secondary objective compared such factors between the 10 medical schools with the highest percentage of students matching into family medicine and non-top 10 medical schools.

METHODS: Fourth-year medical students nationwide participated in 90-minute virtual focus groups. Reviewers coded deidentified transcriptions and identified key themes and subthemes that were found to influence student choice.

RESULTS: Fifty-five medical students participated in focus groups over a 2-year period. Three key themes were found to influence students: perspective, choice, and exposure. Subthemes included: (1) the importance of high-quality preceptors practicing full-scope family medicine, (2) the value of a rural experience, and (3) institutional support to pursue family medicine. Physician compensation and loan repayment concerns were not major factors influencing student choice.

CONCLUSIONS: Many factors influence student choice of family medicine including preceptors, clinical exposures, and institutional support. These factors varied by institution and many were found to be different between top 10 and non-top 10 schools. Addressing these factors will help increase students' choice of family medicine and reduce the primary care shortage.

(Fam Med. 2019;51(2):143-8.)

doi: 10.22454/FamMed.2019.927833

The United States will face a significant shortage of primary care physicians due to ongoing population growth, aging of the US population, and retirement of practicing physicians. A recent study estimated that the US will experience a shortage of over 33,000 primary care physicians by 2035.¹ While advocacy

efforts have focused on increasing the number of primary care residency positions, attention must also be given to whether these positions are being filled. According to the National Resident Matching Program, 119 of the 3,629 family medicine residency positions offered in 2018 went

unfilled and only 44.9% went to US medical school graduates.²

The Family Medicine for America's Health (FMAHealth) Workforce and Education Team is dedicated to increasing the number of medical students choosing family medicine to address the projected primary care shortage. While prior quantitative studies have suggested that exposure to family medicine through required family medicine clerkships, rural experiences, and pipeline programs lead to increased knowledge and improved attitudes toward family medicine, impact on ultimate specialty choice is mixed.³⁻⁷ A conceptual framework for primary care specialty choice was also developed for students based on their matriculation predispositions toward primary care and the many categories of influence that may affect them, including but not limited to lifestyle, financial considerations, student interests and perceptions, and curriculum experience.⁸

From Oregon Health & Science University (Dr Alavi); Swedish Family Medicine Residency at Cherry Hill, Seattle, WA (Dr Ho); University of Alabama Medical School (Mr Stisher); Rush University Medical Center, Chicago, IL (Ms Richardson); Memorial Health Family Medicine Residency, Savannah, GA (Dr Kelly); Ellis Family Medicine Residency, Schenectady, NY (Dr McCrory); Mayo Clinic Family Medicine Residency, Rochester, MN (Dr Zurek); University of Arizona College of Medicine, Phoenix, AZ (Dr Boltz); and Eastern Virginia Medical School, Norfolk, VA (Dr Snellings).

To further understand the factors influencing specialty choice, the FMAHealth work group conducted semistructured focus groups with allopathic medical students across the United States. Focus groups were designed primarily to elucidate the factors affecting student choice of family medicine with a secondary aim to compare perspectives of students from the 10 US medical schools with the highest percentage of students applying to family medicine residencies (Table 1) with those from other US allopathic medical schools (non-top 10 schools).

Methods

Recruitments

Institutional review board approval was obtained through Ellis Medicine.* Between November 2016 and March 2018, fourth-year US allopathic medical students matching into any specialty were invited to participate in one of several nationwide focus groups. The work group recruited students through multiple contact sources including the Family Medicine Interest Group (FMIG) Network, class Facebook groups, FMIG faculty advisors, and sign-ups

provided at family medicine conferences. A \$10 gift certificate to Amazon was offered to all participants.

Focus Group Structure

Prior to the focus groups, participants consented to participation including audio recordings and deidentified transcriptions. Students participated in semistructured 90-minute virtual sessions moderated by a work group leader. Discussion included 10-12 open-ended questions (Table 2) to identify what factors that influenced students' specialty choice. Focus group size ranged from two to six participants.

Data Analysis

Qualitative content analysis with an inductive coding approach was used to analyze the first cohort of focus groups. Deidentified transcripts were reviewed by two to three coders who independently noted themes and subthemes among the group responses. The work group discussed discrepancies between coders and reviewed the themes until a consensus was reached. The finalized themes and subthemes were then applied

to the analysis of subsequent focus groups.

Focus group sessions were conducted from November 2016 through March 2018 with 55 medical students from 19 institutions participating. Students fell into one of four groups listed in Table 3.

Results

The three key themes identified as factors influencing student choice of family medicine were perspective, choice, and exposure. Perspective included the students' view of family medicine as well as views from mentors, faculty, specialists, family members, and peers. Choice encompassed the students' initial interest in family medicine followed by barriers or encouragement encountered throughout their medical training. Exposure related to students' experiences on their family medicine rotations, the institution's family medicine culture, and opportunities to explore family medicine. Themes are illustrated through key quotes in Tables 4 and 5. Subthemes and summarization of student comments are highlighted in the middle column.

Table 1: 2012-2014 3-Year Average Percentage of Graduates Who Were Family Medicine Residents⁹

Top 10 School Medical Schools	Non-Top 10 Medical Schools Represented
1. University of North Dakota (20.8%)	1. Albany Medical School (6.68%)
2. University of Kansas (19.7%)	2. East Tennessee State University (10.58%)
3. University of Minnesota (18.8%)	3. Eastern Virginia Medical School (6.09%)
4. East Carolina University (18.5%)	4. Georgetown University (5.24%)
5. University of Washington (17.6%)	5. John Hopkins University (1.12%)
6. Oregon Health and Sciences University (16.9%)	6. Michigan State University (11.09%)
7. Florida State University (16.2%)	7. University of Arizona (10.78%)
8. University of Missouri at Columbia (16.0%)	8. University of Illinois (9.85%)
9. University of Wisconsin (15.9%)	9. University of Iowa (10.85%)
10. University of California - Irvine (15.8%)	10. University of Michigan (8.47%)
11. University of New Mexico (15.8%)	
National average: 8.65%	

Data were obtained from 2014 AAFP ranked order match list.

All top 10 schools were not represented in our focus groups.

The top 10 schools from most recent data from 2016-2017 did not include University of California-Irvine, University of Washington, Florida State University, University of Missouri at Columbia, University of Wisconsin, or University of North Dakota.

Three schools (University of Wisconsin, University of Missouri at Columbia, and University of California, Irvine) were not in the top 20 in the 2016-2017 data.

Table 2: Semistructured Focus Group Questions

Questions for students applying to family medicine:

1. Why did you choose family medicine?
2. When did you choose family medicine? (Did you start medical school with an interest in family medicine? If not, what was your initial area of interest and what caused you to change?)

Questions for students applying to other specialties:

3. Did you start medical school with an interest in family medicine? If so, what caused you to change your mind?

Questions for all participants:

4. What is the greatest challenge for students interested in family medicine while they are in medical school?
5. Do you know students who were interested in family medicine but then chose a different specialty?
 - a. Do you know specifically why they made this switch?
 - b. If you do not know specifically the decision, what do you perceive as the reasons?
6. How do students at your school perceive family medicine?
 - a. How do students at your school perceive issues like:
 - i. Family physician salaries and ability to pay off loans? Family physician competence and rigor of training?
 - ii. Relationship between family physicians and advanced practitioners (NPs and PAs)?
7. Does your medical school have a family medicine rotation?
 - a. If yes, tell us about the rotation:
 - i. What are interactions with residents like during this rotation?
 - ii. How did this rotation influence your decision on specialty choice? (Were there specific elements such as your preceptor, spectrum of care, urban/rural setting, etc., that influenced your decision?)
 - iii. What do students in general say about the FM clerkship?
 - b. If no, how do you think this impacts career exposure and choice at your school?
8. What resources/opportunities does your school make available to students interested in family medicine?
 - a. Do you think these resources increase student choice of family medicine?
9. What do your peers, mentors, and preceptors think of family medicine as a specialty choice?
 - a. How did that affect your decision to choose your specialty?
10. Does your school have a required rural medicine rotation? If so, did this influence your choice for or against family medicine?
11. What types of community engagement opportunities does your medical school have during the first two years? Are family medicine physicians involved with these projects?
12. Is there anything that we have not talked about in our discussion tonight that you would like to bring up before we end the focus group?

Table 3: Summary of Focus Group Participants

Group	Total Number of Students	Total Number of Focus Groups	Schools Represented	Specialties Represented (for Non-FM)**
Students at top 10 institutions applying to FM	23	6	FSU, UND, UWash, OHSU, UNM, UCI, UKansas	FM
Students at top 10 institutions applying to other fields	11	4	UND, FSU, UW, OHSU, UWisc, UCI	IM, Ob/Gyn, Gen Surg, Plastics, Peds
Students at non-top 10 institutions applying to FM	14	4	Georgetown, ETSU, MSU, UIowa, UMichigan, UoA, UIC, Albany	FM
Students at non-top 10 institutions applying to other fields	7	2	JHU, EVMS, MSU, UIC	Rad, IM, EM, Peds, Psych, Gen Surg
Total	55	16	19	8

Abbreviations: FSU, Florida State University; UND, University of North Dakota; OHSU, Oregon Health and Science University; UNM, University of New Mexico; UCI, University of California, Irvine; UKansas, University of Kansas; UWash, University of Washington; UWisc, University of Wisconsin; ETSU, Eastern Tennessee State University; MSU, Michigan State University; UIowa, University of Iowa; UMich, University of Michigan; UoA, University of Arizona; UIC, University of Illinois at Chicago; JHU, Johns Hopkins University; EVMS, Eastern Virginia Medical School; IM, internal medicine; Ob/Gyn, obstetrics-gynecology; Gen. Surg, general surgery; Plastics, plastic surgery; Peds, pediatrics; Rad, radiology; EM, emergency medicine.

** Focus groups were primarily timed either after Electronic Residency Application Service (ERAS) submission or post-rank list submission from November 2016 to March 2018.

Table 4: Selected Quotations and Themes From Students Matching Into FM Compared to Students Matching Into Other Specialties

Key theme	Students Matching Into FM	Subtheme	Students Matching Into Other Specialties
Perspective	<i>"The scope is what attracted me to family medicine personally... a lot of people that switched to FM late was entirely because of scope... Knowing that you could do women's health, elderly, and procedures, and all in one day was definitely a huge role in why I chose it."</i>	Scope of practice: Students choosing FM cited scope as key reason for choice. Students choosing other specialties specified a preference for a limited scope or perceived limited scope in nonrural settings.	<i>"I might be more interested in family medicine if I could—if was doing full-spectrum family medicine, but I'm not interested in living in a rural area." "I was kind of disheartened to see that we really weren't taking care of kids, and we weren't really doing a lot of women's health." "Not only have I not had a family medicine elective I feel like I don't have a great idea of what outpatient adult medicine looks like."</i>
	<i>"My peers were like impressed that I was willing to go into family medicine. I think there's a general respect at my school for people who are willing to kind of take on the challenge of doing what is notoriously most challenging jobs in our health care system both intellectually and socially, so I feel like that was...that was never a barrier for me."</i>	Classmates' perceptions: Students appreciated peers entering FM for addressing an important need despite an underlying stigma that FM is less competitive.	<i>"When you're going into family... it's not like the cool thing to do." "I admire...the classmates who kind of pave the way to actually make [going into family medicine] happen 'cause it's difficult not having some part or program or required family medicine rotation, and they're trying to make that happen."</i>
Choice	<i>"I haven't heard a ton of conversations about making money as being a particularly important concern for a lot of people."</i>	Compensation and competition: These were rarely cited as a major concern.	<i>"I've never really had anyone say, 'Oh, I don't [want to] go into family medicine because I'm not going to be able to pay off my student debts.' But people sort of say 'I don't [want to] go into family medicine because I'm not going to be able to buy as big of a boat as I want.'"</i>
Exposure	<i>"So try and work in continuity... my preceptors were great about trying to make sure that I saw the same patients if they were coming back to clinic." "Preceptors aren't necessarily great about expressing why they're doing what they're doing. Preceptors can seem really tense, and stressed and short on time."</i>	Clerkships and preceptors: Students' experiences were highly variable and dependent on preceptor quality, availability, and scope of practice.	<i>"I just sort of have...nightmares of sitting in the corner of the room watching a guy do diabetic foot checks." "We would always run late on all the patients because they would come in with 46 issues to talk about in our 11-minute appointments, so...the opportunity for the student...wasn't really there or else we'd never leave."</i>

Table 5: Selected Quotations and Themes of Students at Top 10 Institutions Compared to Other Institutions

Key Theme	Students at Top 10 Institutions	Subtheme	Students at Other Institutions
Perspective	<p><i>“things that really draw me ultimately to family medicine...is the longitudinal patient relationship, the idea that you can take care of a community, a society as a whole, and through preventative, chronic disease management really alter outcomes for people, long term.”</i></p> <p><i>“family medicine is very highly tailorable or customizable and think for many people that is a draw.”</i></p>	<p>Scope of practice: Students from top 10 schools were more likely to understand the full scope of practice in family medicine. Students from non-top 10 institutions often cited the social justice and advocacy components of family medicine practice.</p>	<p><i>“I actually did not know family medicine doctors did inpatient work until I did my family medicine [rotation], and I remember being completely shocked about it...wishing I had known that earlier. It would have made my decision a lot easier.”</i></p> <p><i>“I felt like family medicine best fit...my career goals to be a patient advocate and to be engaged in policy work and community organizing.”</i></p>
Choice	<p><i>“I think that constantly being told [family medicine] isn't elite enough even at a school that really values FM is challenging.”</i></p>	<p>Barriers to choosing FM: While stigma was cited across institutions, lack of exposure was frequently reported at non-top 10 institutions.</p>	<p><i>“I think...people do their surgery rotation and are like, “Oh, my, gosh. I can't believe I love surgery.” And so, I think not having...that exposure I'm sure fewer people do it just because of that alone.”</i></p>
Exposure	<p><i>“Most of the faculty and staff... our deans and everything, are all family docs.”</i></p> <p><i>“Family medicine is pushed pretty hard on people, so there's lots of opportunities. There's lots of things that you can do, and I don't know sometimes that turns people off ... maybe some people feel like it's forced down their throat if they don't enjoy it.”</i></p>	<p>Institutional culture: Students reported stronger culture and support at the top 10 institutions compared to more stigmas against FM from higher level faculty at other institutions.</p>	<p><i>“I've had attending physicians write in my eval...that I'm going to be wasting my future if I continue on in family medicine, and so I got called into academic affairs to explain that to my Dean of Academics who also did not want me to go into family medicine and was very clear about it...there is professional discrimination afoot.”</i></p>
	<p><i>“Our family medicine rotations specifically ... rural family med are incredibly popular...it is the highest ranked rotation that we have.”</i></p> <p><i>“We have a joke in our class it's like family medicine rotation is coming up. Drink the Kool-aid because... they do a really good job of making it really awesome, and making people want to go into it.”</i></p>	<p>Clerkship experiences: Clerkship experiences were highly variable even among students at top 10 institutions, but rotations with dedicated preceptors and broad scope of practice, especially in rural settings, were highly regarded.</p>	<p><i>“The 4 weeks with the one provider... was make or break for how people left the rotation. I definitely left it a little bit frustrated because...the doctor I worked with he was okay, but it was all shadowing.”</i></p> <p><i>“Just all the outpatient, adult medicine that I really did not enjoy ...unless you go extremely rural, you can like find a niche, you will be doing mostly adult outpatient medicine as a family medicine doctor.”</i></p>

Discussion

Three key issues were echoed across focus groups. The most consistently identified factor was the need for high-quality family medicine preceptors who express enthusiasm for the field and practice full-scope family medicine exhibiting the breadth of this specialty. The second highly praised factor was the value of a rural family medicine experience, mainly due to the broad scope of practice. Lastly, students reiterated the importance of top-down

institutional support of primary care, specifically family medicine. This was best highlighted when family medicine faculty were integrated into the preclinical curriculum.

Participants from top 10 institutions, both applying into family medicine as well as other specialties, held family physicians in high regard. These students reported a better understanding of family medicine due to their early exposure throughout the preclinical curriculum as well as on clinical rotations.

They also echoed the importance of influential preceptors and felt that the mission of their schools placed a stronger emphasis on primary care. Students from the top 10 schools specifically highlighted the discrepancies between urban versus rural family physician scope of practice and were less likely to pursue family medicine if they planned to practice in an urban setting.

Students from the non-top 10 schools explicitly highlighted institutional stigmas against

family medicine. These students spoke about the underappreciation of family medicine, the lack of prestige of the specialty, and the encouragement of competitive students to choose other fields. Students also reported less exposure to family medicine and were more likely to perceive the scope as limited to outpatient chronic disease management. Compared to top 10 schools, public health and social justice issues were more often mentioned by these students as motivation to choose family medicine. Physician compensation was not found to be a driving factor amongst students in any group however was mentioned more often by these students.

Regardless of institutions, students choosing other specialties agreed that administrative burden and the perceived broad scope of family medicine pushed them away from family medicine.

Limitations of this study included unequal representation from students not choosing family medicine, lack of representation of all top 10 medical schools, lack of generalizability between schools, exclusion of osteopathic medical students and international medical graduates, small population size, and subjectivity of qualitative research analysis. The investigators also had limited training in qualitative focus group research prior to this study.

In conclusion, students from all groups consistently highlighted the importance of having high-quality

preceptors and rural family medicine experiences as positive factors for choosing family medicine. The positive and negative top-down institutional influences are also important in student choice. These concepts are similar to those highlighted by the conceptual framework developed by Bennett and Phillips.⁸ Important barriers facing students from non-top 10 schools included the lack of exposure to family medicine and the need for family physician mentors to model a broad scope of practice. In addition, students not pursuing family medicine described how the broad scope of practice and underappreciation of family physicians deterred them from pursuing the specialty.

Footnote

* Ellis Medicine is a teaching hospital in Schenectady, New York affiliated with the Ellis Family Medicine Residency Program. Coauthor KrisEmily McCrory is on faculty at this residency (IRB#-IRB00008111; FWA-FWA00017254).

ACKNOWLEDGMENTS: Data from this manuscript were presented at the AAFP National Conference for Students and Residents in 2017, and Society of Teachers of Family Medicine Medical Student Education Conference in 2018.

FINANCIAL SUPPORT: Amazon gift cards were funded through Family Medicine for America's Health.

CORRESPONDING AUTHORS: Address correspondence to Mustafa Alavi, MD, at Mustafa.alavi18@gmail.com, or Tiffany Ho, MD, at Tiffanyfho@gmail.com.

References

1. Petterson SM, Liaw WR, Tran C, Bazemore AW. Estimating the residency expansion required to avoid projected primary care physician shortages by 2035. *Ann Fam Med*. 2015;13(2):107-114.
2. National Resident Matching Program. Results and Data: 2018 Main Residency Match. Washington, DC: National Resident Matching Program; 2018.
3. Kane KY, Quinn KJ, Stevermer JJ, et al. Summer in the country: changes in medical students' perceptions following an innovative rural community experience. *Acad Med*. 2013;88(8):1157-1163.
4. Phillips J, Charnley I. Third- and Fourth-Year Medical Students' Changing Views of Family Medicine. *Fam Med*. 2016;48(1):54-60.
5. Rabadán FE, Hidalgo JL. Changes in the knowledge of and attitudes toward family medicine after completing a primary care course. *Fam Med*. 2010;42(1):35-40.
6. Wilkinson JE, Hoffman M, Pierce E, Wiecha J. FaMeS: an innovative pipeline program to foster student interest in family medicine. *Fam Med*. 2010;42(1):28-34.
7. Rabinowitz HK, Diamond JJ, Markham FW, Wortman JR. Medical school programs to increase the rural physician supply: a systematic review and projected impact of widespread replication. *Acad Med*. 2008;83(3):235-243.
8. Bennett KL, Phillips JP. Finding, recruiting, and sustaining the future primary care physician workforce: a new theoretical model of specialty choice process. *Acad Med*. 2010;85(10)(suppl):S81-S88.
9. Kozakowski SM, Fetter G Jr, Bentley A. Entry of US Medical School Graduates Into Family Medicine Residencies: 2014-2015. *Fam Med*. 2015;47(9):712-716.