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ORIGINAL CONTRIBUTION

Understanding clerkship experiences in emergency medicine and their potential influence on specialty selection: A qualitative study

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Abstract

Objectives: The specialty of emergency medicine (EM) is experiencing a significant decrease in student interest. In addition, women are historically underrepresented within the specialty at all levels of training and practice. We sought to understand how clinical experiences and perceptions of EM influence specialty selection by medical students, particularly women.

Methods: Using a constructivist grounded theory approach, we analyzed semistructured interviews with senior medical students who considered EM as a specialty. We used purposive sampling to recruit from diverse learning environments and represent a variety of experiences. Participants reflected on their specialty selection process and experiences in EM including their perceived acceptance in the work environment.

Results: Twenty-five medical students from 11 geographically diverse schools participated. A total of 68% (17/25) identified as women. The majority (21/25, 84%) planned on applying to EM residency. We identified four major themes: (1) distressing interpersonal interactions with patients and the ED care team negatively affect students; (2) EM culture includes behaviors that are perceived as exclusionary; (3) beliefs about the attributes of an ideal EM physician and the specialty itself have a gendered nature; and (4) ease of access to mentors, representation, and early exposure to EM environment increased interest in specialty.

Conclusions: Our participants express that EM causes challenges for students to accept the norms of behavior in the field, which is an essential element in joining a group and professional identity formation. In addition, we raise concern that gendered perceptions and language may send exclusionary environmental cues that may negatively impact recruitment of a diverse physician workforce.

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INTRODUCTION

The specialty of emergency medicine (EM) is currently experiencing a dramatic drop in interest from senior medical students.[1–3] There are multiple proposed reasons for this decline including the work environment; impact of the COVID-19 pandemic; and fallout from a widely publicized, negative report on the future of employment within the specialty.[4–7] In addition, while women and men currently enter medical school in equal proportions, EM remains predominantly men with the proportion of women matching to the specialty remaining static at around 35% for the past two decades.[8]

Research suggests that medical students select EM based on factors including lifestyle, mentorship, training length, and expected salary.[9] For some EM applicants working with underserved populations is also a major draw.[10,11] Burkhardt et al.[11] also recognized that identification as a woman independently correlated with a lower overall interest in the specialty. Women entering medical school with an interest in EM appear equally likely as men to maintain a trajectory toward the specialty; however, those without an early interest are unlikely to pivot toward the specialty.[12,13]

The decision to select a particular specialty within medicine is mediated through a process of professional identity formation during which individuals define their priorities through interactions between personal characteristics and their lived and professional experiences.[14–16] This passage requires that learners adopt the "characteristics, values, and norms" of a profession or a specialty, which culminates "in an individual thinking, acting, and feeling" like a member of that group.[14] This specifically involves accepting (or rejecting) the values of the group by negotiating conflicts between one's preexisting identity and those of the community typically through social experiences within the professional milieu.[14,15]

While work highlights quantitative trends in surveys of medical student cohorts, the decision-making process and experiences underlying this phenomenon of the selection of EM are not well described. We sought to understand student experiences with EM and influences on their selection of the specialty. We hypothesized that experiences in the clinical environment of EM may explain some of the decrease in interest as well as the gender differential among students entering the specialty.

METHODS

Study setting and population

We conducted semistructured interviews to identify key concepts involved in EM specialty selection and how experiences may be influenced by gender. We used a constructivist approach to grounded theory.[17,18] We intentionally selected the constructivist paradigm to respect the importance of student experiences and their interpretations of those experiences.[18] This project, including incentives to participants, was reviewed and approved as exempt by the institutional review board. Verbal consent for participation and recording was obtained from the participants.

We used purposive sampling to recruit senior students at U.S. medical schools. Eligibility criteria included having completed an EM rotation during medical school, planning to enter the next residency match, and at least having considered the specialty of EM regardless of final specialty selection. We sent study information to EM clerkship directors at geographically diverse institutions and requested distribution among their students. We also utilized available specialty listservs. We sought to recruit participants broadly from across the United States and from different training environments to broaden perspectives.[19] We recruited students to participate in a research study "on how senior medical students select their medical specialty" and explicitly made clear there was no implied or actual connection with residency applications. We attempted to include any individuals who explored EM either through knowledge of the clerkship director or prior participation in EM student interest groups as well as students who ultimately decided on a non-EM specialty. We made multiple attempts via email to interview any student who expressed interest. We provided a $25 gift card to participating students, which did not disclose the funder.

Study protocol

Participants completed a brief demographic survey prior to their interview. Experienced members of the research team (AH, LRH) trained three medical students as peer interviewers (ASF, AD, SGE) with attention to best practices.[20] They were also trained to manage responses indicating a potential safety issue for the interviewee; however, no responses led to this concern. The students also handled screening for eligibility and scheduling. The vast majority of participants were unknown to the interviewers although some were students at the same institution. We intentionally utilized medical students to minimize power differentials including avoiding any appearance of influence on residency application decisions. The student interviewers all explored EM as a specialty choice; however, only two selected the specialty. Two of the interviewers are women and one gender nonbinary. Identifying information about the participants was kept separate from transcripts in a password-protected file accessed only by the senior researcher (LRH) and the student interviewers. A single faculty researcher (LRH) handled distribution of incentives without knowledge of how transcripts linked to individuals. We intentionally paused during residency interview season to minimize any conflict of interest. Interviews occurred over two separate 2-month windows and included students from the graduating classes of 2021 and 2022. We anticipated our sampling approach would require a maximum of 25 interviews while remaining flexible on the exact number to achieve thematic saturation.[21,22]

Characteristics of study participants

We interviewed 25 U.S. senior medical students with 68% (17/25) identifying as women (Table 1). Of the 31 students expressing initial interest, we successfully enrolled 25. The remaining six students did not respond to three follow-up emails. A total of 84% (21/25) of participants expressed commitment to EM as their residency specialty. Eleven geographically varied medical schools were represented with a maximum of five students from any single institution (median 2, range 1–5). Participants described a wide range of experiences with EM including medical school rotations inclusive of required, elective, and away experiences; early elective clinical experiences outside of traditional rotations; prehospital training and employment; scribe scribes; and personal experiences in the ED (Table 1).

Interview guide

We iteratively developed a semistructured interview script within the author group focusing on issues of specialty experience informed by our literature review. A qualitative methods expert external to the project reviewed the script for clarity, content, and bias. Finally, students and EM interns, not participating in the study, pilot-tested the initial script and we made minor revisions based on their feedback. Between the two phases of recruitment, we reviewed our initial transcripts and adjusted wording and ordering of questions. The final interview guide is available in Appendix S1.

TABLE 1 Participant characteristics and demographics.

Characteristic	Prevalence ($n = 25$)
Woman	17 (68)
Specialty choice	
EM	21 (84)
Dual application	1 (4)
Other	3 (12)
Medical schools by region	
Northeast	4 (16)
Midwest	10 (50)
Southeast	7 (28)
West	4 (16)
EM exposure (totals add to more than 100% as individuals can have more than one experience type)	
Prior experience	
Scribe	5 (20)
EMS	5 (20)
ED volunteer	6 (24)
Personal[a]	5 (20)
Shadowing	7 (28)
Early club–based exposure	2 (8)
Early clinical exposure[b]	4 (16)
Elective rotation	11 (44)
Required rotation	17 (68)
Away rotation	3 (12)

Note: Data are reported as *n* (%).

[a]Personal experience defined as exposure to the ED as a patient or family member.

[b]Early clinical exposure defined as clinical experience in the ED prior to core clinical rotations.

Measurements

We audio-recorded the one-on-one interviews over Zoom (Version 5.8) and transcribed them using a commercial vendor after which we destroyed the source files. The interviewers reviewed transcripts for accuracy, removed potential identifiers, and provided field notes about additional observations on the conduct and content of the interviews.

Data analysis

A core group of five authors (LRH, AF, SB, NK, RD) coded the transcripts. The senior author (LRH), who is experienced in qualitative methods from both coursework and published research, conducted the training for the remainder of the team for whom this was novel information. Subsequently, all coding team members jointly reviewed two transcripts to create the initial codebook in MAXQDA (Version 2020 20.4.1, VERBI Software GmbH). We selected these transcripts from the first interviews conducted, choosing one EM-bound and one non–EM-bound student to provide a broad context for the initial codes. Remaining transcripts were then assigned to a rotating combination of two coders who worked independently and in a blinded fashion. No interviewer coded transcripts for which they were the interviewer. A third member of the coding team acted as a reconciler for any disagreements. The team was allowed to confirm assumptions about gender identity and specialty choice during the coding process. Coding proceeded using constant comparative analysis.[23] New codes from each transcript were added to the master codebook maintained by the senior investigator (LRH). The investigators met regularly to review new code definitions and to develop emerging themes. Documentation detailing these reflections as well as discussions during coding was maintained by the senior investigator (LRH). Coding continued until saturation was reached.[21] No additional new major codes, key themes, or concepts were identified after Transcript 21 of 25. To ensure completeness, all transcripts were reviewed by a coding team member who had not been a part of the initial review.

To maximize credibility, we conducted member checks by sending an advanced draft of the manuscript to participants to ensure agreement with our themes.[24] Response was limited (two participants); however, those responding indicated agreement with the manuscript and its conclusions. We utilized SRQR criteria (Appendix S2).[25] The third-party funder had no input as to the study design, findings, or conclusions.

Reflexivity

The authors, with a specific focus on the coding team, reflected on our own experiences to acknowledge and create consciousness on how these may influence interpretations of the data.[26,27] The majority of authors identify as women with one identifying as a man and one as gender nonbinary. They represent the spectrum of experience in the specialty from a student without clinical experiences in EM to senior emergency physicians. Three authors have advanced training in research methods. They have a variety of family situations, routes to selection of EM as a specialty, lifestyle preferences, and career goals. However, they do have a shared commitment to support women and diversity in the field.

RESULTS

These 25 interviews had a median length of 25 min (range 12–58 min). They generated 241 pages of transcripts (mean length 9.6 pages, median 9 pages, range 5–21 pages) with 1747 coded segments. We identified 119 unique codes inclusive of 20 parent codes and 97 subcodes (child codes).

Themes

Our analysis revealed four main themes.

1. Distressing interpersonal interactions with patients and the ED care team negatively affect students.
2. EM culture includes behaviors that are perceived as exclusionary.
3. Beliefs about attributes of an ideal EM physician and perception of the specialty have a gendered character.
4. Ease of access to mentors, representation, and exposure to the EM environment affected interest in specialty.

Theme 1: Distressing interpersonal interactions with patients and the ED care team negatively affect students

Students experienced a range of positive and negative interactions during their EM rotations. While negative experiences were noted throughout all clinical rotations, these were highlighted as particularly bothersome in the EM rotation. At times, our participants were careful to clarify that distressing patient encounters occur in the clinical learning environment throughout their training. A number of students remarked on provider interactions or interactions between patients and providers specifically within EM, which ran counter to their ideals and caused them concern.

Among providers

Distressing observations included dismissive behaviors based on another colleague's personal characteristics and more explicit expressions of bias. Overt sexual banter also created distress and concern about the learning environment and additionally negatively impacted at least one participant's sense of fit within the specialty.

> And at one point one of the nurses was asking two male doctors… to assess her breast implants … assess like do you think these make me look hot? And won't this look better if my boobs were two inches higher? And that was just very uncomfortable and bummed me out, because I was like, I don't want these to be my people.
>
> [ID#26, woman, EM]

Participants further described extensive experiences where providers spoke disrespectfully about patients. These comments were viewed as unprofessional and demonstrated a lack of attention to the patient's condition. This type of banter directly contributed to strongly negative participant reactions and discomfort. Only one participant described speaking out in the moment and experienced a negative response.

> I also had one experience of a couple of providers … making some pretty, not great comments about [a] nonbinary patient who identified as "they," "them." Saying things like, "Oh, so if it's they/them, it's two people, you have to get eight milligrams of Zofran instead of four." And I was just, that's pretty inappropriate.
>
> [ID#16, woman, EM]

Sometimes these negative experiences could serve as a catalyst to remind the student of their personal values.

> … And so that was something that I think was a pretty negative experience in the emergency department. [It] made me consider or at least actively consciously remind myself to not become jaded and to give everybody the benefit of the doubt as best as I can.
>
> [ID#29, woman, EM]

Among ED patient population

Interpersonal interactions with patients and families were also sources of distress. In addition to role misidentification, students

witnessed more overt expressions of bias based on gender or other personal characteristics, aggression, and other forms of belittling.

> You probably don't know as much because you're a woman. … yeah. Just like a little bit of lack of respect there …
>
> [ID#31, woman, EM]

> … they took a swing at me. But I dodged it.
>
> [ID#25, woman, EM]

Dissenting elements also emerged within this theme.

> And from my experience, I don't see the ED as a hostile work environment like I did surgery.
>
> [ID#18, man, EM]

In addition, some carefully identified the problem as an individual and not the specialty.

> And I remember being really offended by that because I was interested in emergency medicine at the time, … I very much just in my head was like, "Oh, this individual, I feel bad for him, he is out of touch and doesn't understand." I didn't really think about it reflecting on the field.
>
> [ID#12, woman, EM]

Theme 2: EM culture includes behaviors that are perceived as exclusionary

Many participants described positive experiences; however, students also identified situations where they perceived the culture of EM as exclusionary (Table 2). Several students remarked on feeling excluded due to personal characteristics, particularly if their identity(-ies) differed from their preceptors. For example, participants observed preceptors express concern about women students' engaging with male anatomy–related chief concerns. At other times, these exclusionary messages were more subtle and related to expressions of camaraderie while in the clinical learning environment including a sense of inability to engage with a male-dominated cultural ethos.

> … men, and this could be attendings and residents, … the way that they refer to each other, … seem to have this really, "bro-y collegiality," that's not always accessible to other people.
>
> [ID#3, woman, EM]

Women remarked on how they repeatedly experienced misidentification as "nurses" during a shift and at times with the same patients.

> You can come in and you introduce yourself as their medical student … they'll be on the phone, you'll come back and they'll be like, "Sorry, the nurse just came in, I have to go." I'm like, "You know I'm not the nurse. I

TABLE 2 Supplementary quotes further illustrating Theme 2.

Theme 2: EM culture includes behaviors that are perceived as exclusionary	
Messages of exclusion in the learning environment.	"Maybe women don't feel like they're as included because, I don't know, maybe EM can come off as like a boy's club in some way[s] …" [ID#7, man, general surgery/EM]
	"I kind of have always had my suspicions personally when I'm working with certain attendings that are very dissimilar to me that sometimes … they have an inherent bias against me as a young woman, but I don't have any, obviously, evidence to support that …" [ID#30, woman, EM]
	"I noticed in my rotation, and this was something I, I had already been aware about earlier, is that EM has historically been a very, um, uh, Caucasian and male-dominated field." [ID#9, woman, EM]
	"… I always think of the stereotype of EM physicians as rock climbing, Jeep driving, adventure seeking, adrenaline kind of people. Just saying those words out loud, those sound like very masculine traits. I wonder how much that plays … maybe women don't feel as accepted in that culture." [ID#21, woman, EM]
	"… they're always like, 'Are you sure you're okay taking it?' I did three weeks on urological surgery … a penis is a penis, I'm not scared of them, I can treat it if it's got a paraphimosis, I can do that just as easily as a vaginal bleed. I don't care either way, but people seem to think that I'll be more uncomfortable with them than I am." [ID#25, woman, EM]
	"I think just the general commentary and the jokes are different. … they're not offensive, in any way, but they are just, it's just different. And I don't know. I went to a women's college, so I'm used to having all females around me. And that was a different learning environment. I don't know. It's kind of hard to pinpoint." [ID#4, woman, EM]
Women students experience repeated role misidentification	"… it's usually just a comment, it's never a badgering … you down, women shouldn't be doctors kind of thing, it's always just a, 'Oh, hey, since you're my nurse, can you go get me this, or do this?" [ID#29, woman, EM]
	"… especially if I'm with a woman resident and we go in the room together, the patient will more often address me directly or, or not more often, but sometimes they'll address me directly and be more deferential to me." [ID#14, man, EM]

already introduced myself as not the nurse." And that doesn't happen to our male colleagues.

[ID#25, woman, EM]

Some, including this same participant, identified that while this misidentification caused them distress, it did not specifically alter their career decision.

it seems more prominent [in the ED], but I think it's a pretty universal issue in medicine. So no, it doesn't turn me off from emergency [medicine] in particular.

[ID#25, woman, EM]

Women participants frequently described feeling isolated, uncomfortable, or disempowered on EM rotations as well as not feeling completely included on the care team. These experiences were interpreted by students as overt bias and suboptimal clinical experiences including feeling intimidated when trying to advocate for a patient:

I felt particularly uncomfortable there, as a young woman working with a bunch of older men. I don't know that were I a male med student, I would've had the gumption to push back on [the older male attending] more just because of the hierarchy thing. But I feel like being female added to the discomfort and unwillingness to push back on this [attending].

[ID#26, woman, EM]

Theme 3: Beliefs about attributes of an ideal EM physician and perception of the specialty have a gendered character

Attributes of an ideal EM physician

Participants perceived that stereotypically masculine traits are valued in EM (Table 3). These included the correlation between size, height, and volume of a person's voice in commanding attention of others and managing chaotic resuscitation situations. Assertiveness, extroversion, and self-advocating attributes positively influenced the EM learning experience, as students felt more visible to preceptors and more favorably received.

... emergency medicine seems to favor those who are comfortable being extroverted and taking initiative and declaring a plan, and those are things that by design perhaps, or more likely ... by context of our world, are more celebrated and built up in men than in women.

[ID#1, woman, family medicine]

A heavy emphasis on procedural-based care in EM was observed as well as beliefs around men having better procedural and manual skills was also mentioned by several participants.

I think oftentimes masculine-presenting people tend to be told they should do things with their hands or they should work with their hands and that's just all

TABLE 3 Supplementary quotes further illustrating Theme 3.

Theme 3: Beliefs about attributes of an ideal EM physician and perception of the specialty have a gendered character.	
Stereotypically masculine traits are valued in EM	"I do think that the specialty has a reputation for attracting thrill seekers, adrenaline junkies, sports buffs, which in American society, I would say tend more toward men." [ID#26, woman, EM]
	"I also think that men are seen as, either personally or by society, seen a bit more as the adrenaline junkies, the ones that are going to thrive in the traumas, high stress situations, and so that kind of perpetuates the stereotype." [ID#25, woman, EM]
	"You know, I think socially we ... condition women to be less vocal and self-advocating for themselves in a professional environment, at least in the way that is beneficial in the ED, which is in the chaotic, heated, in the moment type thing. ... and so I'd imagine that's probably playing a pretty significant role in disincentivizing from people from either wanting to go into it or conversely being evaluated well in it." [ID#14, man, EM]
	"... in my preclinical years of medical school where we had an EM doctor give us ... a lecture/demonstration/group activity on casting, ... And he was an older man ... and he said something off the cuff about how EM tends to be male-predominated because guys just like the adrenaline and stuff." [ID#12, woman, EM]
	"... emergency medicine seems to favor those who are comfortable being extroverted and taking initiative and declaring a plan, and those are things that by design perhaps, or more likely I would say by context of our world, are more celebrated and built up in men than in women." [ID#1, woman, EM]
Belief that EM requires a lot of work with your hands, which is further perceived as a masculine trait	"I think the fact that we advertise our ED as the place you go to do procedures, when in fact there's a lot more skills necessary than doing procedures ... I think that probably does bias people perspective of the emergency department." [ID#14, man, EM]

> fields, not just medicine. So, maybe that's part of it. It is more of a hands-on job.
>
> [ID#16, woman, EM]

Students consistently shared how preceptors emphasized being prepared to "come in and save the day," participate in "heroic" things like resuscitations, "leading teams," adventure seeking, and ability to handle "high-stress" or traumatic situations. Students noted that the predominant socialization of EM tended to emphasize masculine traits related to "adrenaline"-inducing activities more so than other aspects of care.

> … emergency docs … come in and save the day and they can do anything and they're resuscitating, and … those kind of traits … being a team leader are more typically masculine traits as opposed to like the kind pediatrician and family doctor who are going to sit down and talk about your feelings.
>
> [ID#11, woman, EM]

Perception of the specialty

The diversity of patient presentations and diagnostic processes were commonalities that drew students to the specialty. Across gender identities there was overlap in motivations, including a high level of appreciation for the "depth," "breadth," "acuity," and "procedures." Students generally regarded EM as a specialty that was valuable for the service to patients and community. However, aspects related to providing "comfort," "making a difference," and connecting with patients were heavily skewed toward women interviewees.

> … trying to be compassionate and [provide] a good experience on the worst day of their life …
>
> [ID#1, woman, EM]

> … but at the end of the day, they still need some respect and some compassion in the emergency department and [to] be treated like everybody else.
>
> [ID#29, woman, EM]

During coding, we noted the ability to identify the gender of the participant with a high degree of reliability based on words chosen to describe the specialty and their vision of the ideal emergency physician. Upon review of our codes, there is not a single code that is specific for gender; however, we could recognize patterns which appeared to strongly correlate with the gender of the interviewee (Table 4).

TABLE 4 Women predominant codes and representation within transcripts to illustrate perceived trends by gender in their occurrence.

	% of transcripts	
Code	**Women ($n=17$)**	**Men ($n=8$)**
Exclusion		
Impact on learner	23.5% (4)	12.5% (1)
DEI efforts matter	17.6% (3)	12.5% (1)
Experience of bias		
Patient focused	52.9% (9)	50.0% (4)
Patient to provider	35.3% (6)	12.5% (1)
Practice factors negative		
Patient behaviors	29.4% (5)	12.5% (1)
Controlled chaos	23.5% (4)	12.5% (1)
Practice factors positive		
Patient relationship	64.7% (11)	37.5% (3)
Interface with social issues	47.1% (8)	25.0% (2)
Making a difference	47.1% (8)	25.0% (2)
Values of EM		
Team	52.9% (9)	12.5% (1)
Providing comfort	41.2% (7)	12.5% (1)

Abbreviation: DEI, diversity, equity, and inclusion.

Theme 4: Ease of access to mentors, representation, and exposure to the EM environment affected interest in the specialty

Participants remarked on the importance of mentorship and role models, especially by faculty with concordant backgrounds.

> … I did have some opportunity to see some really strong women in emergency medicine. And I think if I hadn't seen that and I just had the experience of my residents, for example, who are mostly men, I don't know if I would have wanted to do it.
>
> [ID#3, woman, EM]

Students were concerned that their exposure to EM was "delayed" until after core clinical experiences. Subsequently, they felt "under pressure" to find mentorship.

> So I struggled to even find an advisor or somebody who would talk with me or help me out until my M3 year …
>
> [ID#30, woman, EM]

Some women participants questioned whether they would be welcomed or successful when there was a lack of visibility of women in

the EM learning environment. Underrepresentation of female EM physicians made it challenging for some women participants to see themselves in the role, and some students highlighted it as a criterion when evaluating residency programs.

> I'm very aware of how few females … I work with at my current rotation. I have done four shifts now, and I've not worked with a single female resident or attending yet. So, it's definitely a different dynamic.
>
> [ID#4, woman, EM]

The nature of EM shift work with new team members daily often left participants unable to establish meaningful, longitudinal relationships with EM faculty for the purposes of career advice and successful application preparation.

> I think it can be a little bit harder to find those mentoring relationships since you're … not working with the same person that entire week like you would on an inpatient service.
>
> [ID#25, woman, EM]

Respondents consistently reported that late exposure to the specialty was challenging for their awareness and interest in EM.

> I think that my school doesn't let us do EM until fourth-year made things a little tricky. It was hard to start the application process before even having the rotation. And that was pretty stressful. [ID#16, woman, EM]

> Unfortunately, we don't get real significant exposure until our fourth year, which is a bummer.
>
> [ID#21, woman, EM]

DISCUSSION

We present data from a qualitative study of senior U.S. medical students that suggests that students, particularly women, may struggle to select EM due to conflicts incurred in the process of professional identity formation. Perspectives from the legal profession are directly applicable to medical training:

> Professional schools are not only where expert knowledge and judgment are communicated from advanced practitioner to beginner; they are also the place where the profession puts its defining values and exemplars on display, where future practitioners can begin to both assume and critically examine their future identities.[28]

Based on our participants' experiences, we can hypothesize that societal gender roles, an environment that rewards traditionally masculine traits, and behaviors that cause students internal conflict can interfere with students accepting an identity as an emergency physician. Exclusion and bias experiences arose even among this group, which is predominantly selecting the specialty, raising concerns that individuals who opted out of the specialty, and are underrepresented in our enrollment, may be even more affected.

Our participants struggled at times with the attitudes and behaviors observed in EM. The decision to join a specialty community is a key element of professional identity formation whereby individuals learn to "think, act, and feel like a physician." It requires acceptance of "the norms of behavior established by the community."[14–16] We see our participants negotiating struggles for acceptance by the EM community and acceptance of perceived EM behavioral norms they encounter in the clinical space. For those who wish to join, "the community must be, and be seen as being, welcoming to all."[14] Inclusivity is often perceived by our participants as a lacking essential element. Our findings support and expand work in other specialties showing that experiences of exclusion and mistreatment influence specialty selection.[29–32]

Students were, at times, quite disturbed by mistreatment of patients and families by EM providers including both clinicians and nurses. These observed and seemingly accepted interactions witnessed by learners may deter individuals from entering the field when behaviors conflict with their personal values. In addition, patients and families serve as a source of stress for study participants. The disproportionate burden on women of these negative interactions has been noted in a recent publication.[33] Our participants also demonstrated that they perceive their interactions with patients, families, and nonphysician team members as important influences. Stavely et al.[34] highlight a similar phenomenon for EM residents particularly around the differential expectations from nursing based on gender that contributed to a source of "role strain" for women trainees. Lack of women's representation in EM coupled with experiences of noninclusive culture may contribute to women medical students feeling a sense of "otherness" and thus they are less likely to join the specialty. Unprofessional interactions are well documented throughout all medical fields and our study participants have had experiences in many clinical environments.[29,35] However, it is notable that the interactions experienced in EM left a lasting impression on our participants and sometimes challenged their engagement with the specialty as evidenced by the statement that "I don't want these to be my people."

The summation of learner experiences and observations may create a perception of EM, which influences the learner's sense of belonging particularly if they have not already committed to the specialty. The concept of ambient belonging has been previously demonstrated to create a feeling of exclusion on the basis of sometimes subtle environmental cues.[36] The "bro-y collegiality" pervasive in the EM workplace does not appear accessible to some learners. Another related phenomenon, stereotype threat, has been described in

many environments and may similarly corroborate our findings.[37–39] Individuals who are underrepresented in the workplace or who have an identity associated with a negative stereotype may fear that their own performance could confirm such stereotype about their entire group. Women in EM can face overt sexist and exclusionary remarks, as reported by our participants, as well as performance pressures related to being minoritized. These cues can lead to a sense of being devalued which can in turn impair performance. Thus, unbalanced gender representation on its own can serve as a catalyst for an environment that can deter women from a given field.[39]

The very language used to describe emergency physicians may offer clues into learners' perception of specialty and their sense of belonging. Respondents, regardless of gender identity, predominantly utilize masculine terminology when talking about the specialty. A 2005 study demonstrated a direct correlation between the hiring of women and the use of gendered terms in job descriptions.[40] This terminology is succinctly summarized in a recent work on gender differences in EM evaluations.[41] This skewed overtone in itself may signal that women, unless they adopt more masculine characteristics, are not welcomed and do not fit into the field. We see parallels to work done in the male-dominant fields of engineering where the environment itself is demonstrated to deter women and induce struggles with internal conception of competence.[42–44]

Attracting more students and specifically more women into EM will require sustained, thoughtful efforts to resolve barriers to the specialty. Early exposure to the specialty is cited by students as critical to sparking their interest. EM is often situated only in the final year of medical school curricula and exposure in preclinical years may be limited.[45] This issue of timing is particularly relevant for the recruitment of women into the specialty as there is a relative failure to recruit new women to the specialty during medical school.[12,13] Providing positive early opportunities to engage with EM, starting when students are in premedicine programs and continuing into the first years of medical school, may be essential to attracting students and particularly women to the specialty.

Connection with EM mentors is a common concern expressed by our participants. EM-bound women emphasized the importance of representation of women in prospective residency programs, and research has shown that women prefer residency programs where perceived female mentorship and networks are strong.[46] In addition, these specialty mentors may serve an essential role to promote reflection on experiential learning and allow thoughtful integration and exploration of experiences, particularly those that challenge core beliefs.[14,47,48] The need for guided reflection on experiences is also a critical role of mentors in professional identity formation, which helps to reconcile and integrate the psychological conflict between ideals and experiences.[16,49]

LIMITATIONS

This study explored the intersection of clerkship experiences and identity and how this may influence specialty selection. We paid particular attention to gender identity; however, students hold multiple intersecting identities that also shape their experiences, and these additional perspectives such as race and ethnicity fall outside our scope. We also recognize that humans exist beyond binary gender definitions, and additional work may explore experiences of those who do not identify with binary gender definitions. Recruitment for this study was intentionally broad to explore student experiences and generate hypotheses; however, specific factors may vary among learning environments. In addition, while we attempted to represent the population of students considering but not selecting EM, this group is challenging to identify and recruit. The influence of the COVID-19 pandemic during the 2 years of recruitment for this study may also alter clinical experiences. Social acceptability and fear of consequences may limit respondents' willingness to disclose

TABLE 5 Potential interventions to address challenges highlighted by students in their selection of EM as their specialty.

Challenges highlighted by students	Potential interventions
Distressing interpersonal interactions with patients and the ED care team patient negatively affect students	Create opportunities for coaching and reflection to address challenging events in the clinical realm.[47,48] Develop robust systems to promote accountability for unprofessional behaviors. Including reporting mechanisms for mistreatment and unprofessional behaviors as well as faculty development.[50]
EM culture includes behaviors that are perceived as exclusionary	Engage in creating an inclusive and supportive work environment utilizing recommendations for women in the field.[51–53]
Beliefs about attributes of an ideal EM physician and perception of the specialty have a gendered character	Deliberately broaden the visual imagery used to promote our specialty by representing diverse providers and skills needed. Develop mechanisms to recognize outstanding performance in EM, which relies on diverse characteristics.
Ease of access to mentors, representation, and exposure to the EM environment affected interest in specialty	Develop intentional, longitudinal mentorship programs that may also consider specifics of an individual's identity within the context of EM.[51,54] Initiate connections with learners to promote the specialty at a minimum early in medical school but ideally even earlier.[13,54,55]

information or to give desirable answers although we attempted to mitigate this risk through use of peer interviewers and provision of information about the blinding of transcripts.

CONCLUSIONS

We identify experiential factors which may inform some of the declining student interest and persistent gender differential in the specialty of emergency medicine. Our findings raise concerns that the specialty needs to be attentive to the environment for all students. We highlight (Table 5) potentially intervenable factors including building a supportive and accountable culture; recognizing and addressing the gendered perception of the field; and establishing early, longitudinal mentoring and engagement with the specialty. Future work will need to assess the impact of these proposed interventions as well as to understand the experiences of students with diverse and intersectional identities.

AUTHOR CONTRIBUTIONS

Rosemarie Diaz, Sarah Balgord, Nicole Klekowski, and Laura R. Hopson conceived the study concept and design. Sarah Balgord, Nicole Klekowski, and Laura R. Hopson acquired the funding. Alexandra S. Farthing, Sylvia Guadalupe Escolero, and Korynne DeCloux acquired the data. All authors contributed to the analysis and interpretation of the data. All authors contributed to drafting the manuscript and critical revision of the manuscript for important intellectual content.

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CONFLICT OF INTEREST STATEMENT

Dr. Klekowski currently serves as a Director-at-Large for the SCUF Board of Directors; this work is not related. Dr. Klekowski has a former consulting relationship for 4Catalyzer Corporation; this work is not related. Dr. Hopson is a member-at-large of the CORD board of directors; this work is independent of that role and does not reflect organizational opinions or input. Dr. Hopson has also received contract research funding from Toyota Motor Engineering & Manufacturing North America, which is unrelated to this work and ended in August 2022. The other authors declare no conflicts of interest.

ETHICAL APPROVAL

This study was reviewed and given exempt status by the University of Michigan Institutional Review Board, reference #HUM00150488.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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