Underrepresented groups and perceived educational barriers for residency and fellowship success

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Background

- Insufficient representation of underrepresented groups in medicine (UIM) and sexual and gender minorities (SGM) in various medical specialties may perpetuate health disparities for minority patient populations [1]
- African Americans and Hispanics account for 13% and 16% of the US population, respectively, but only compose 3% and 4% of dermatologists [2]
- The American Academy of Dermatology made a call to action, with proposals to address the lack of diversity within the specialty in 2017 [5]
- While admissions and matriculation data for medical schools and graduate medical education support increasing racial/ethnic and sexual/gender diversity, specific career advancement barriers affecting UIM and SGM are poorly characterized in literature

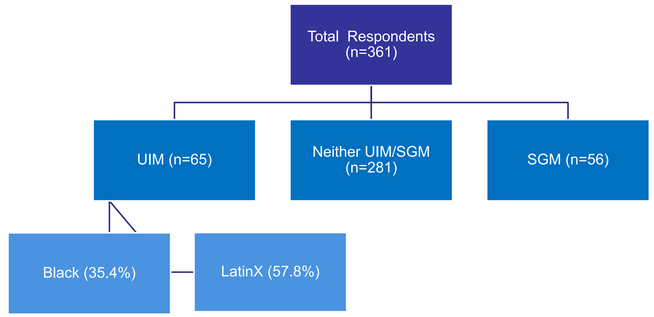
Objective

- To compare perceived barriers for US-based medical students and resident physicians who self-identify as UIM or SGM to students and residents who do not self-identify with these groups
- To identify perceived barriers for dermatology applicants compared to applicants pursuing other medical specialties

Methods

- 54-question cross-sectional survey study of US-based medical students and resident physicians surveyed from February 2021 to July 2021
- Likert scale score, with 1 being "Strongly disagree" and 5 being "Strongly Agree" was used to assess barriers perceived by survey participants
- UIM is defined as individuals identifying with one of the following racial/ethnic groups: African American, Black, LatinX, Native American, Alaska. Native or Hawaiian Americans; SGM as individuals who identify as lesbian, gay, bisexual, transgender, queer, asexual, and pansexual [6,7]
- Participants were stratified by UIM, SGM, and non-UIM/non-SGM status. Subgroup analyses by specialty of interest were performed. Chi-squared tests and student t-tests (2-sided) used to measure differences in prevalence rates and means between groups, respectively.

Results



- **Internal Medicine** top specialty of interest for non-UIM/non-SGM (15%) and SGM groups (17.9%)
- Dermatology (21.5%) top specialty of interest for UIM group

Top 5 Barriers Shared by all 3 Groups

Top 5 Barriers for UIM and SGM but not non-UIM/non-SGM group

Lack of connections/ networking opportunities
(UIM 3.65±1.58, p=0.005; SGM 3.75±1.44, p=0.002, UIM/non-SGM group 3.05±1.50; p=0.750)

1. **Step 1 Score**
non-UIM/non-SGM: 3.73±1.83, UIM: 3.70±1.81, SGM: 3.84±1.90
2. **Lack of opportunity to obtain Alpha Omega Alpha membership**
non-UIM/non-SGM: 3.66±1.98, UIM: 3.81±2.07, SGM: 3.93±2.01
3. **Lack of home program in specialty/fellowship of interest.**
non-UIM/non-SGM: 3.46±1.80, UIM: 3.97±1.90, SGM: 3.75±1.83

Significantly greater barrier for UIM group compared to non-UIM/non-SGM group

Lack of diversity in specialty/ fellowship of interest
(UIM 3.58±1.63 vs non-UIM/non-SGM 2.43±1.53, p<0.001)

Barriers – Participants with interest in Dermatology

Potential Barriers (Likert Scale Score, Mean ± SD)	Non-UIM and Non-SGM (n=41)	UIM (n=14)	P value	SGM (n=6)	P value
Personal/Familial Obligations	2.39±1.22	2.36±1.39	0.933	3.00±1.22	0.255
Financial Status	2.20±1.14	2.36±1.34	0.663	3.67±1.03	**0.005**
Available Opportunities at Medical School/Residency Program	3.49±1.50	3.21±1.76	0.576	3.83±1.47	0.601
USMLE Step 1 Score	3.20±1.81	3.86±1.61	0.230	4.00±1.55*	0.306
Lack of Opportunity to Obtain Alpha Omega Alpha Membership	3.80±1.83*	4.00±1.96*	0.737	3.67±1.63	0.862
Lack of Opportunity to Obtain Multiple Honors, Awards, Scholarships, or Distinctions	3.29±1.72	2.93±1.33	0.475	3.17±1.67	0.864
Third-Year Clerkship Grades	3.29±1.62	3.50±1.74	0.686	3.50±1.78	0.771
Obtaining Specialty Specific Letters of Recommendation	3.32±1.65	3.14±1.66	0.735	4.17±1.33*	0.236
Obtaining Multiple Peer-Reviewed Research Publications	3.54±1.38*	3.21±1.72	0.482	4.17±0.75*	0.283
Obtaining Multiple Posters/Presentations	3.29±1.40	3.14±1.79	0.749	4.00±0.63*	0.233
Lack of Opportunity to Participate in Multiple Volunteer Experiences	2.27±1.14	2.21±1.19	0.880	3.33±1.21	**0.040**
Probability of Matching	4.12±1.12*	3.71±1.38	0.274	4.67±0.52*	0.251
Internalized and/or Social Perceptions of the Field	3.07±1.49	3.36±1.45	0.538	3.67±1.03	0.353
Specialty's Perception of UIM Students	3.02±1.88	3.36±1.39	0.546	3.00±1.55	0.976
Specialty's Perception of SGM Students	2.88±1.89	3.93±2.02*	0.083	3.00±1.79	0.882
Racial/Ethnic Background	2.61±1.36	3.14±1.23	0.200	2.17±0.41	0.435
Sexual Orientation and/or Gender Identity	2.12±1.23	3.21±1.97	**0.018**	2.50±0.84	0.472
Lack of Home Program in Specialty/Fellowship of Interest	4.37±1.71*	4.71±1.73*	0.515	4.83±1.47*	0.530
Obtaining Mentorship	3.37±1.39	4.00±1.47*	0.152	3.67±1.51	0.627
Lack of Diversity in Specialty/Fellowship of Interest	2.66±1.30	3.93±1.14*	**0.002**	2.83±0.75	0.750
Lack of Connections/Networking Opportunities	3.85±1.31*	4.14±1.29*	0.479	3.83±1.47	0.972

UIM, Underrepresented in Medicine, *SGM*, Sexual and Gender Minority
Statistically significant values are bolded
Likert scale: 1 = "Strongly Disagree", 2 = "Disagree", 3 = "Neutral", 4 = "Agree", 5 = "Strongly Agree", 6 = "N/A"
*Top five barriers

Conclusion

- Lack of diversity (racial/ethnic and sexual/gender) in medicine remains a fundamental barrier
- Increased representation and support of minority groups could encourage recruitment of individuals who identify as part of these groups and further improve patient outcomes
- Significant barriers identified for UIM and SGM groups include lack of a home program, AOA membership, USMLE Step 1 score, connections/networking opportunities, and lack of diversity in residency/fellowship
- Our study also uniquely identified participant-proposed solutions such as a “Tinder (dating) application” for mentorship and local partnerships for greater transparency/support for students/residents who lack affiliated hospitals and home programs
- After implementation of some of these solutions, further studies are needed to quantitatively assess their success in reducing perceived access barriers for medical students and fellowship applicants. Furthermore, more studies are also needed to identify barriers for UIM and SGM groups.

References

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