



# Examining the Role of Gender and Ethnic Concordance in Medical Student Specialty Selection

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## Abstract

**Introduction** Representation of female and minority physicians varies across specialties and may influence career selection by medical students. To investigate the effect of demographic concordance between medical students and clinical role models on specialty selection, we conducted a survey of graduating medical students to assess the perceived importance and influence of third-year clerkship experiences with demographically concordant preceptors on their choice of specialty for post-graduate training.

**Methods** An 11-question survey was shared nationally through AAMC Organizational Student Representatives to medical students in the Class of 2023. Information gathered included demographics; specialty of choice; extent of exposure to preceptors of the same gender, race, or ethnicity during clinical clerkships; and perceived importance and influence of those interactions (Likert 1–5, Low—High) on specialty selection.

**Results** A total of 84 students responded. Female students ascribed more importance to gender concordance with preceptors on the third-year clerkship most associated with their specialty of choice than males [3.4 (SD 1.2) vs. 1.3 (SD 0.8) respectively,  $p < 0.0001$ ] and greater influence to gender concordance on final specialty selection [2.37 (SD 1.1) vs. 1.31 (SD 0.8) respectively,  $p < 0.0001$ ]. Non-Caucasians ascribed more importance to race/ethnicity concordance than Caucasians [2.8 (SD 1.4) vs. 1.2 (SD 0.5) respectively,  $p < 0.0001$ ] and greater influence to race/ethnicity concordance on final specialty selection [2.0 (SD 1.3) vs. 1.1 (SD 0.4) respectively,  $p < 0.0001$ ]. Caucasian females ascribed the greatest importance to gender concordance ( $p < 0.001$ ), non-Caucasian females ascribed the greatest influence of gender concordance ( $p < 0.001$ ), and non-Caucasian females ascribed both the greatest importance ( $p < 0.001$ ) and influence ( $p < 0.001$ ) to race/ethnicity concordance.

**Conclusions** We found that gender and race/ethnicity concordance between students and clinical preceptors during third year clerkships is perceived as especially important and influential in specialty selection by minority and female medical students. These findings highlight the importance of diversity in gender and race/ethnicity representation by preceptors on clinical clerkships.

**Keywords** Diversity · Residency · Specialty · Race · Ethnicity · Gender

## Introduction

Representation of female and minority physicians varies across specialties and may influence career selection by medical students [1, 2]. The importance of role models may be magnified for females and underrepresented minorities (URM) who face unique challenges such as overcoming gender biases/discrimination, and the need to explain the context and nuances of their lived experiences [3, 4].

Female students are more likely to pursue primary care specialties than males [5]. Gender discrimination, lack of training support, and mentorship have been cited as

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contributing factors to the continued underrepresentation of female physicians in specialties such as surgical fields [3]. Studies have also shown that female students are more likely than males to enter programs with higher proportions of female residents [1] and that URM students are more likely to apply to specialties with a higher proportion of racially concordant practicing physicians [6]. When compared to their peers, URM students place significant importance on having a mentor of the same race or ethnicity when pursuing training in competitive fields like urology [4]. Conversely, they may be deterred from other fields such as interventional radiology, when they perceive a lack of ethnic diversity in training [7].

The nature of interpersonal relations during the clerkship experience has been identified as an important contributor to residency selection for 70% of students, especially those involving positive interactions with attendings and residents [5]. Exposure to role model physicians during clinical clerkships has also been identified as an important modifier of postgraduate specialty selection by medical students who ultimately select primary care, surgical, and ROAD (radiology, ophthalmology, anesthesiology, and dermatology) specialties [8, 9].

While other studies address the impact of clerkship experiences and role models met during clerkships on specialty selection, there is a lack of data regarding the impact of concordant demographics during clerkship experiences on specialty selection. To further investigate the effect of demographic concordance between medical students and clerkship role models on specialty selection, we conducted a survey of graduating medical students to assess the perceived importance and influence of third-year clerkship experiences with demographically concordant physicians in the selection of specialty for post-graduate training.

## Materials and Methods

In July and September of 2022, an 11-question Qualtrics® survey was circulated nationally to 4th year medical students (Class of 2023) via a national group messaging system and email of the Organizational Student Representatives (OSR) of the Association of American Medical Colleges (AAMC). While OSR representatives at all Canadian, Caribbean, and U.S. osteopathic and allopathic medical schools were asked to forward the recruitment email and survey link to their respective classes, the precise count of participating schools and students receiving the survey is unknown. Participation in the survey was voluntary and responses were collected anonymously. In addition to demographic factors, the survey gathered information regarding specialty of choice; extent of exposure to preceptors of the same gender, race, or ethnicity during clinical clerkships; and the perceived importance and

influence of those interactions (Likert 1–5, Low—High) on specialty selection. This data was stratified by gender, race, ethnicity, and specialty choice. Descriptive analysis was used to assess sample characteristics. Bivariate analysis was performed using chi-squared for discrete variables (gender, race, ethnicity, specialty), independent t-tests for continuous variables (Likert scores), and ANOVA single-factor analysis for between-group analysis (Microsoft Excel). Institutional Review Board approval for this study was obtained through Florida International University (IRB #22–0344).

## Results

A total of 84 students responded to the survey. As shown in Table 1, the average age of respondents was 26 years old (SD 1.9 years) and 64% of respondents identified as female (vs. 35% male and 1% non-binary). Most respondents identified as Caucasian (58%), followed by Latino/Hispanic (15.5%), Asian (12%) and African-American (10%).

Of the 54 female respondents (64%), 31 (57%) identified as Caucasian, 9 (17%) Asian, 7 (13%) Latino/Hispanic, 5 (9%) African-American, and 1 (2%) Middle Eastern. Of the 29 male respondents (35%), 17 (59%) identified as Caucasian, 6 (21%) Latino/Hispanic, 4 (14%) African American, 1 (3%) Middle Eastern, and 1 (3%) Asian. One student identified as non-binary (Caucasian). For further analysis, students who identified as both Caucasian and another race/ethnicity were included in the non-Caucasian group (n = 5).

As shown in Table 2, specialties most highly represented included Pediatrics (16%), Internal Medicine (14%), Obstetrics and Gynecology (13%), Psychiatry (10%), and Emergency Medicine (7%). Caucasian females' most common specialties of choice were pediatrics (n = 9/31, 29%), obstetrics-gynecology (n = 6/31, 19%), and psychiatry

**Table 1** Participant Characteristics (N = 84)

Characteristic	Participants (%) <sup>a</sup>
<b>Mean Age (years) (SD)</b>	26.3 (1.9)
<b>Gender</b>	
Female	54 (64.3)
Male	29 (34.5)
Non-binary	1 (1.2)
<b>Ethnicity</b>	
Caucasian	49 (58.3)
Latino/Hispanic	13 (15.5)
Asian	11 (13.1)
African-American	9 (37.1)
Middle Eastern	2 (2.4)
Two or More	1 (1.2)

<sup>a</sup>Values in parenthesis are percentages, unless indicated

**Table 2** Participants by Residency Choice

Specialty	Total (N = 84)			Caucasian (N = 49)			Non-Caucasian (N = 35)		
	Overall (N = 84) Participants (%) <sup>a</sup>	Male (N = 29)	Female (N = 54)	Non-Binary (N = 1)	Male (N = 17)	Female (N = 31)	Non-Binary (N = 1)	Male (N = 12)	Female (N = 23)
Pediatrics	14 (16.7)	4 (13.8)	10 (18.5)	0	3 (17.6)	9 (29.0)	0	1 (8.3)	1 (4.3)
Internal Medicine	12 (14.3)	3 (10.3)	9 (16.7)	0	0	1 (3.2)	0	3 (25.0)	8 (34.8)
Obstetrics & Gynecology	11 (13.1)	3 (10.3)	8 (14.8)	0	1 (5.9)	6 (19.4)	0	2 (16.7)	2 (8.7)
Psychiatry	8 (9.5)	2 (6.9)	6 (11.1)	0	0	4 (12.9)	0	2 (16.7)	2 (8.7)
Anesthesia	6 (7.1)	3 (10.3)	2 (3.7)	1 (100)	1 (5.9)	1 (3.2)	1 (100)	2 (16.7)	1 (4.3)
Emergency Medicine	6 (7.1)	4 (13.8)	2 (3.7)	0	4 (23.5)	1 (3.2)	0	0	1 (4.3)
Family Medicine	6 (7.1)	2 (6.9)	4 (7.4)	0	2	2 (6.5)	0	0	2 (8.7)
Urology	4 (4.8)	2 (6.9)	2 (3.7)	0	1 (5.9)	1 (3.2)	0	1 (8.3)	1 (4.3)
Radiology - Diagnostic	4 (4.8)	4 (13.8)	0	0	3 (17.6)	0 (6.5)	0	1 (8.3)	0
Dermatology	3 (3.6)	0	3 (5.5)	0	0	0	0	0	3 (13.0)
Otolaryngology	2 (2.4)	0	2 (3.7)	0	0	1 (3.2)	0	0	1 (4.3)
Pathology	2 (2.4)	0	2 (3.7)	0	0	1 (3.2)	0	0	1 (4.3)
Surgery	2 (2.4)	1 (3.4)	1 (1.9)	0	1 (5.9)	1 (3.2)	0	0	0
Interventional Radiology	1 (1.2)	0	1 (1.9)	0	0	1 (3.2)	0	0	0
Physical Medicine and Rehabilitation	1 (1.2)	0	1 (1.9)	0	0	1 (3.2)	0	0	0
Neurological Surgery	1 (1.2)	0	1 (1.9)	0	0	1 (3.2)	0	0	0
Orthopedic Surgery	1 (1.2)	1 (3.4)	0	0	1 (5.9)	0	0	0	0
<b>Total (%)<sup>b</sup></b>	<b>84</b>	<b>29 (34.5)</b>	<b>54 (64.3)</b>	<b>1 (1.1)</b>	<b>17 (20.2)</b>	<b>31 (36.9)</b>	<b>1 (1.1)</b>	<b>12 (14.3)</b>	<b>23 (27.4)</b>

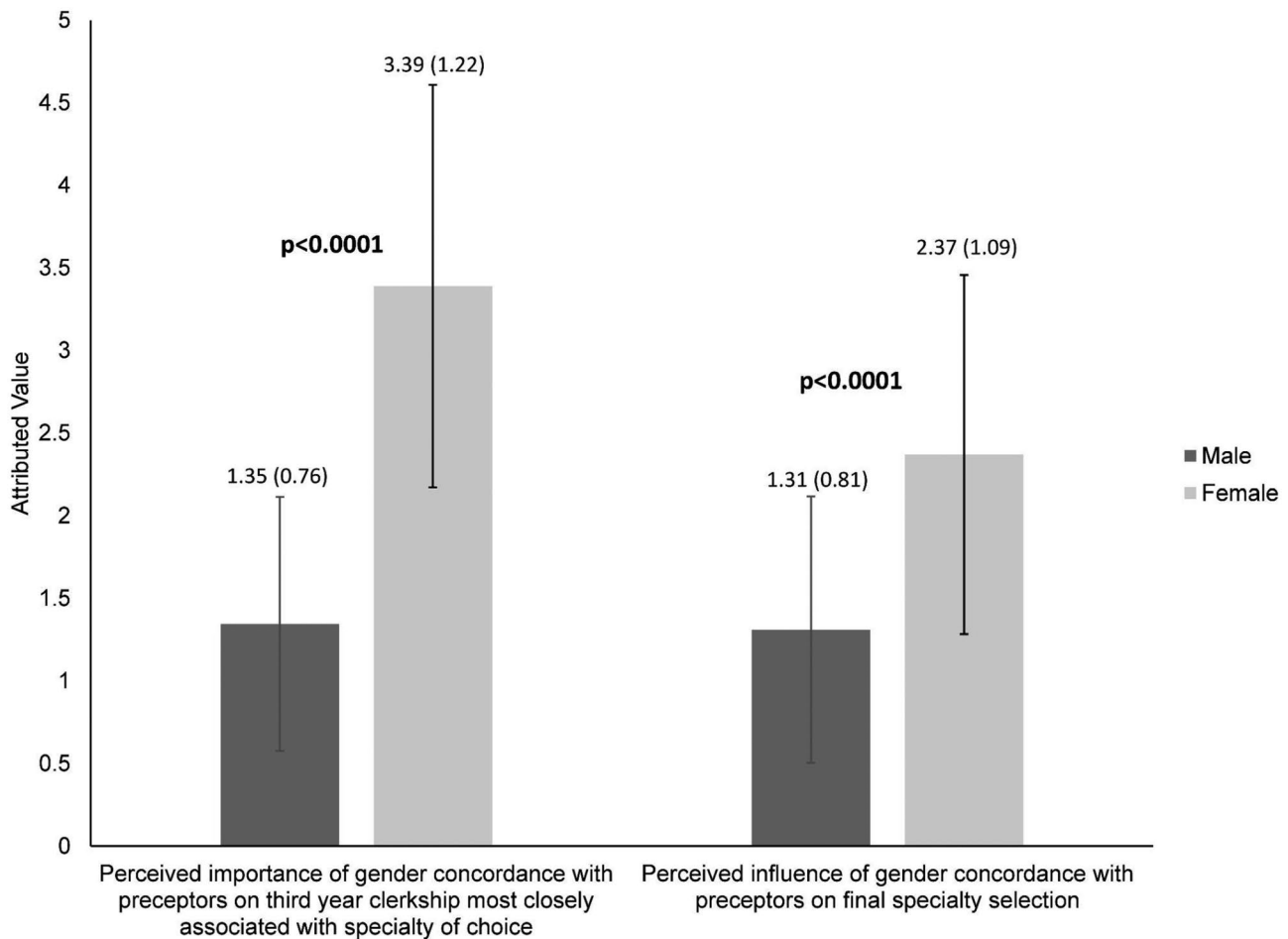
<sup>a</sup>Percentages in parentheses are percentages of the corresponding column total

<sup>b</sup>Percentages in parentheses correspond to the percentage of total participants, N = 84

(n = 4/31, 13%). Non-Caucasian females most common specialties of choice were internal medicine (n = 8/23, 39%), dermatology (n = 3/23, 13%), psychiatry (n = 2/23, 9%) and obstetrics-gynecology (n = 2/23, 9%). Caucasian males' most common specialties of choice were emergency medicine (n = 4/17, 24%), pediatrics (n = 3/17, 18%), and diagnostic radiology (n = 3/17, 18%). Non-Caucasian males' most common specialties of choice were internal medicine (n = 3/1, 25%), obstetrics-gynecology (n = 2/12,

17%), psychiatry (n = 2/12, 17%), and anesthesiology (n = 2/12, 17%).

As shown in Fig. 1, female students ascribed more importance to gender concordance with preceptors on the third-year clerkship most associated with their specialty of choice than their male counterparts [3.4 (SD 1.2) vs. 1.3 (SD 0.8) respectively, p < 0.0001]. Female students also attributed greater influence to gender concordance on their final specialty selection than males [2.37 (SD 1.1) vs. 1.31 (SD 0.8) respectively, p < 0.0001].



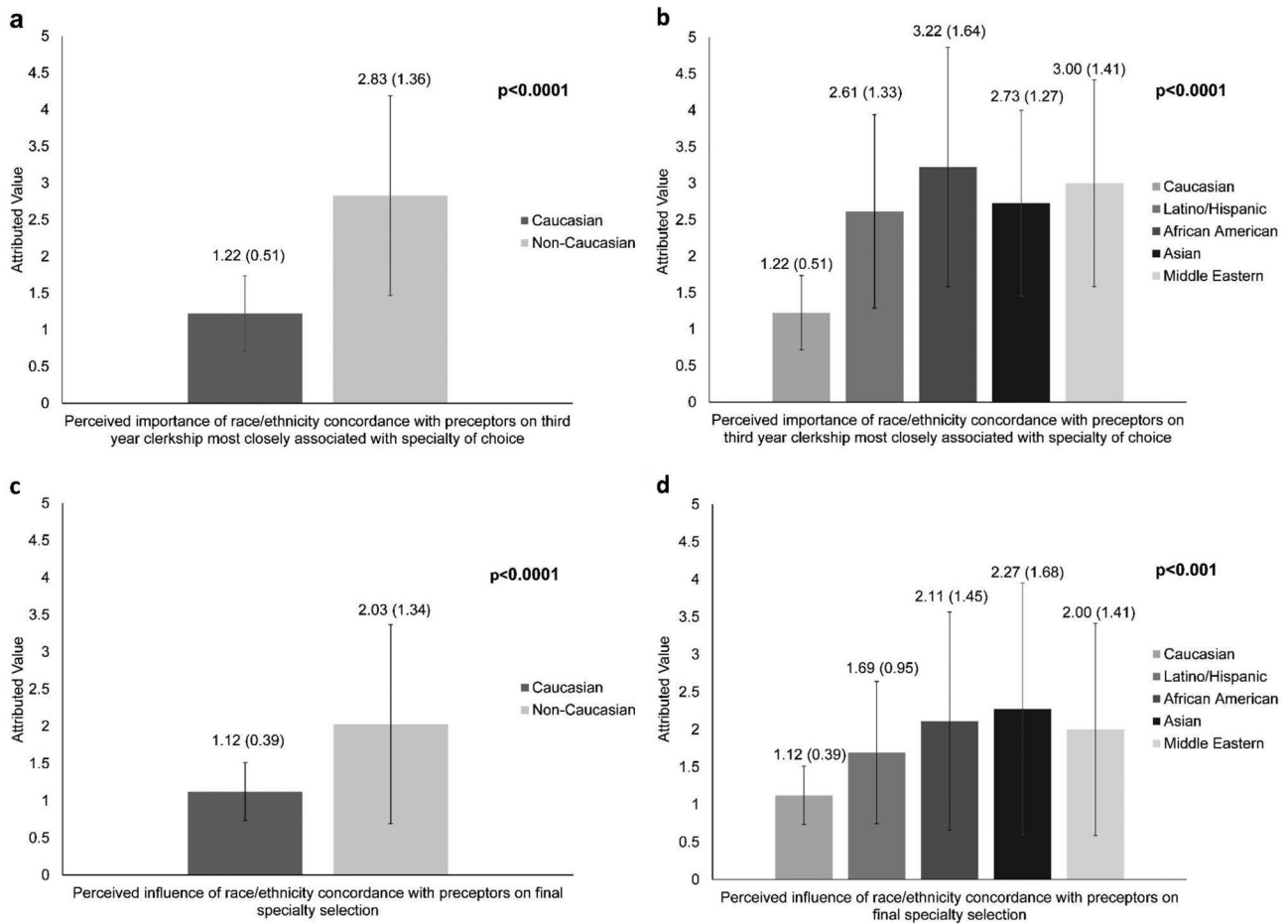
**Fig. 1** Perceived importance attributed to gender concordance with preceptors on the third year clerkship most associated with specialty of choice and perceived influence of gender concordance on final specialty selection

As shown in Fig. 2, students identifying as non-Caucasian ascribed more importance to race/ethnicity concordance with preceptors on the third-year clerkship most associated with their specialty of choice than their Caucasian counterparts [2.8 (SD 1.4) vs. 1.2 (SD 0.5) respectively,  $p < 0.0001$ , Fig. 2A] with African American students ascribing the greatest importance [3.2 (SD 1.6)], followed by Asian students [2.7 (SD 1.3)], and Latino/Hispanic students [2.6 (SD 1.3),  $p < 0.0001$ , Fig. 2B]. Students identifying as non-Caucasian also attributed greater influence to this race/ethnicity concordance on their final specialty selection than Caucasians [2.0 (SD 1.3) vs. 1.1 (SD 0.4) respectively,  $p < 0.0001$ , Fig. 2C] with Asian students ascribing the greatest influence [2.3 (SD 1.7)], followed by African-American students [2.1 (SD 1.5)], and Middle Eastern students [2.0 (SD 1.4),  $p < 0.001$ , Fig. 2D].

Students identifying as Caucasian females ascribed the greatest importance to gender concordance with preceptors on the third-year clerkship most associated with their specialty of choice [3.5 (SD 1.2)], followed by non-Caucasian

females [3.3, (SD 1.2)], Caucasian males [1.4 (SD 0.7)], and non-Caucasian males [1.3 (SD 0.9),  $p < 0.0001$ ]. No significant difference was found between Caucasian females and non-Caucasian females [3.5 (SD 1.2) vs. 3.3 (SD 1.2),  $p = 0.25$ ] or between Caucasian males and non-Caucasian males [1.4 (SD 0.7) vs. 1.3 (SD 0.9),  $p = 0.3$ , Fig. 3A]. Non-Caucasian females ascribed the greatest influence of gender concordance on final specialty selection [2.4 (SD 1.2)] followed by Caucasian females [2.4 (SD 1.0)], non-Caucasian males [1.4 (SD 1.0)], and Caucasian males [1.2 (SD 0.6),  $p < 0.001$ ]. No significant difference was found between Caucasian females and non-Caucasian females [2.4 (SD 1.0) vs. 2.4 (SD 1.2),  $p = 0.45$ ] or between Caucasian males and non-Caucasian males [1.2 (SD 0.6) vs. 1.4 (SD 1.0),  $p = 0.29$ , Fig. 3B].

Students identifying as non-Caucasian females ascribed the greatest importance to race/ethnicity concordance with preceptors on the third-year clerkship most associated with their specialty of choice [3.2 (SD 1.2)], followed by non-Caucasian males [(2.1 (SD 1.3)], Caucasian females [(1.2,



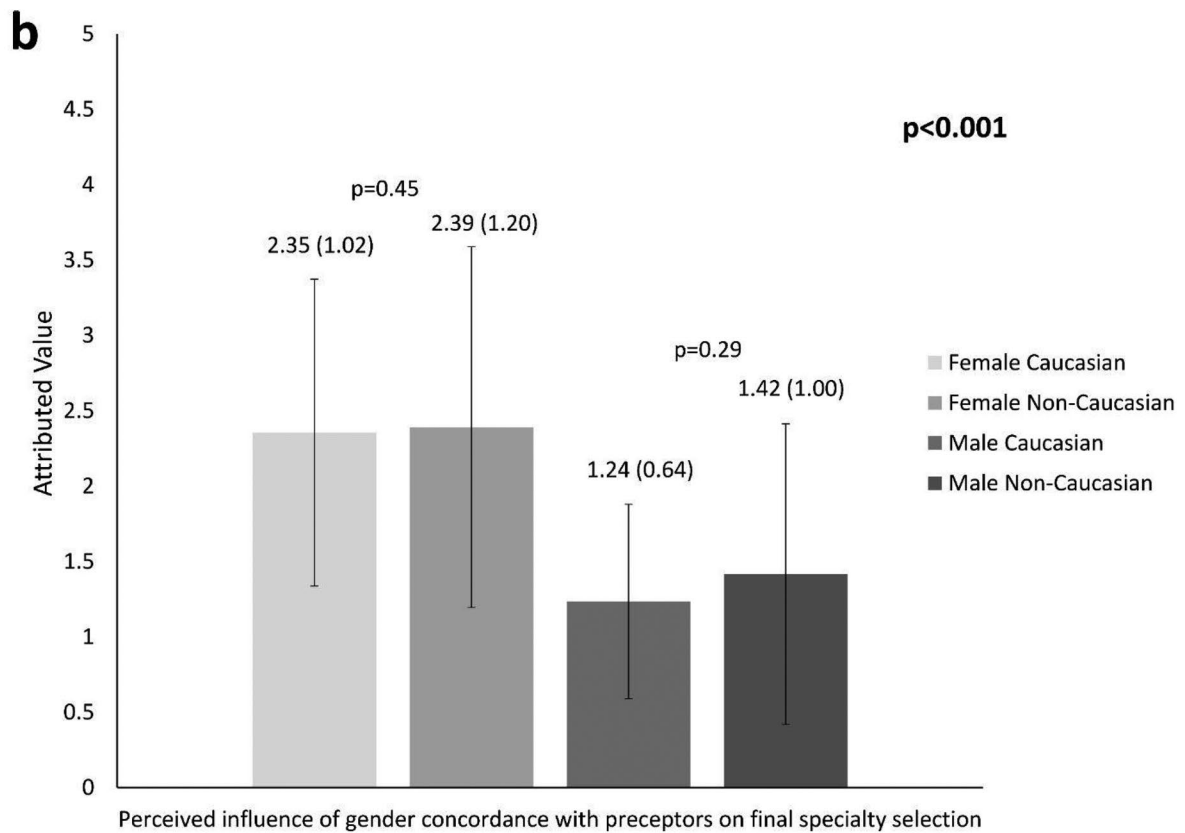
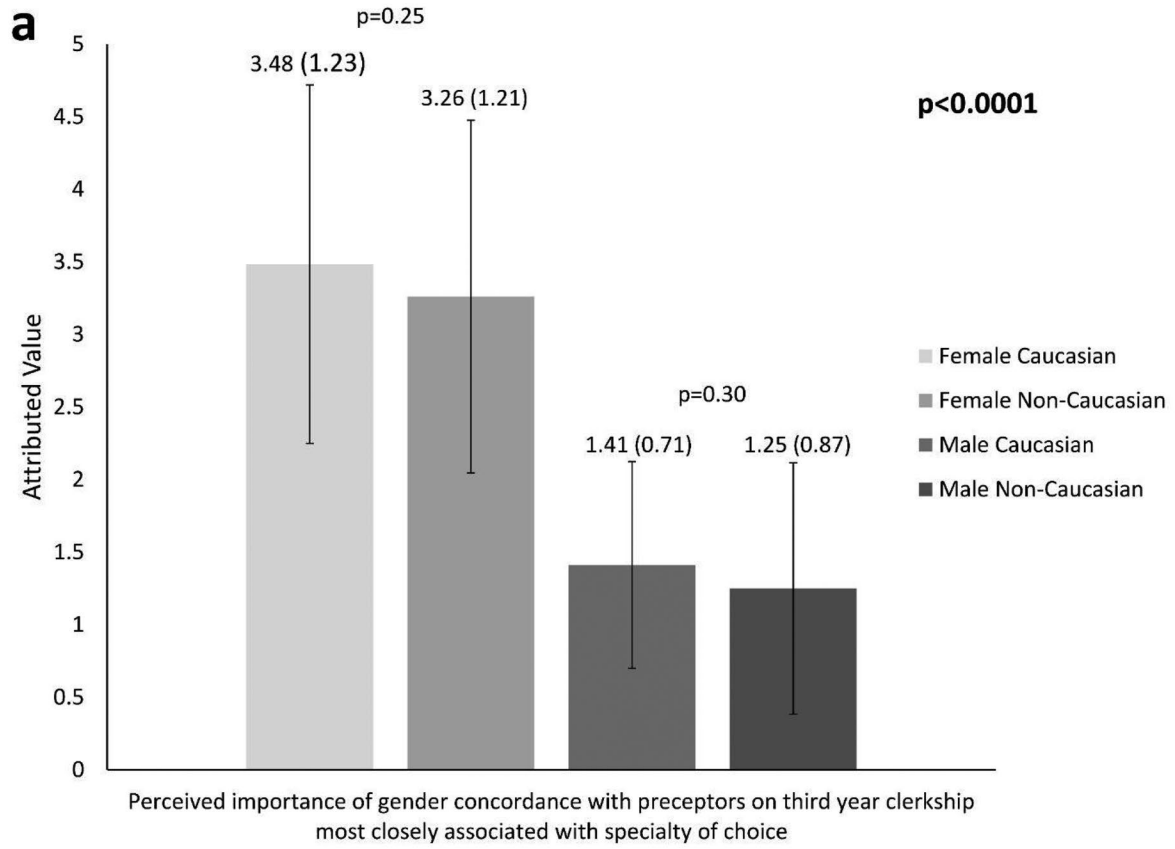
**Fig. 2** Perceived importance attributed to race/ethnicity concordance with preceptors on the third year clerkship most associated with specialty of choice (overall a and stratified b) and perceived influence of race/ethnicity concordance on specialty choice (overall c and stratified d)

(SD 0.6)], and Caucasian males [(1.2 (SD 0.4),  $p < 0.0001$ , Fig. 4A)]. A significant difference was found between Caucasian females and non-Caucasian females [1.2 (SD 0.6) vs. 3.2 (SD 1.2),  $p < 0.0001$ ] and between Caucasian males and non-Caucasian males [1.2 (SD 0.4) vs. 2.1 (SD 1.3),  $p = 0.025$ , Fig. 4A]. Non-Caucasian females also ascribed the greatest influence of race/ethnicity concordance on final specialty selection [2.3 (SD 1.3)] followed by non-Caucasian males [1.5 (SD 1.2)], Caucasian females [1.2 (SD 0.6)], and Caucasian males [1.1 (SD 0.2),  $p < 0.0001$ , Fig. 4B]. A significant difference was found between Caucasian females and non-Caucasian females [1.2 (SD 0.6) vs. 2.3 (SD 1.3),  $p = 0.0004$ ] but not between Caucasian males and non-Caucasian males [1.1 (SD 0.2) vs. 1.5 (SD 1.2),  $p = 0.12$ , Fig. 4B].

## Discussion

Our findings support prior reports on the importance of gender and race/ethnicity diversity of clinical mentorship [10–12]. Although previous studies have highlighted the significance of clerkship experiences and the influence of role models encountered during clerkships on specialty selection [5, 8], none that we have encountered explores the impact of demographic concordance between students and clerkship preceptors on specialty choice. Our study found that gender and race/ethnicity concordance between students and clinical preceptors is perceived as especially important and influential in specialty selection by minority and female medical students. With increasing numbers of female and URM students, these findings highlight the importance of diversity in gender and race/ethnicity representation by preceptors on clinical clerkships.

Non-Caucasian students attributed greater importance to race/ethnicity concordance than their Caucasian peers and female students attributed greater importance to gender



**Fig. 3** Perceived importance attributed to gender concordance with preceptors on the third year clerkship most associated with specialty of choice (a) and perceived influence of gender concordance on specialty choice (b)

concordance than their male peers. Notably, non-Caucasian females ascribed the greatest influence of both gender-concordance and race/ethnicity concordance on third-year clerkships in relation to specialty selection, suggesting that mentorship is especially valuable to this historically underrepresented group.

Because the medical field was historically dominated by Caucasian males, females and URM students may value gender and race/ethnicity concordance as a source of representation and guidance. These trends were found to be most pronounced for non-Caucasian females, where concordance of gender and/or race/ethnicity may help to address dual barriers. Because interactions between medical students and clinical preceptors may evolve into mentoring relationships or other long-lasting professional connections, the absence of female and/or URIM role models encountered on clinical clerkships may also significantly compromise future opportunities for professional development, thereby exacerbating the progressively larger underrepresentation of these groups seen at higher levels of academic advancement [13].

Our findings may reflect the unique challenges and experiences faced by female and URM medical students who are most likely to encounter implicit bias and/or frank discrimination in the medical education environment [14]. Connecting with preceptors who share a similar demographic profile may offer these students a valuable source of support and mentorship.

Diversity in the healthcare workforce has been shown to improve medical outcomes and enhance physician–patient relationships [15, 16]. Our findings that gender and race/ethnicity concordance is perceived as especially important and influential in specialty selection by minority and female medical students further supports the need to recruit and retain a diverse faculty. Strategies to recruit a diverse physician workforce might include (but are not limited to) inclusive job advertisements, providing implicit bias training, employing equitable candidate search strategies, conducting impartial evaluations of applications, and establishing diverse hiring committees [17, 18]. Equally important to introducing diversity into the physician workforce is the implementation of strategies for retaining URM physicians. These strategies might include microaggression training, robust well-being resources, the allocation of dedicated funding for diversity councils, and the implementation of effective feedback mechanisms to address challenges faced by URM physicians in their daily work environment [18].

This study is limited by its small sample size and potential responder bias and therefore may not accurately represent

the population intended to be surveyed. However, it does provide important insights which may be used to foster a more inclusive clinical learning environment. In addition, while respondents reported high levels of perceived influence of demographic concordance with preceptors on final specialty selection, this study did not address if students actually chose specialties where they experienced concordance with preceptors at a higher rate than students who did not experience concordance. This study also does not address all underrepresented groups in medicine (i.e. American Indians and LGBTQ-identifying individuals), though similar results might be expected. Future studies should aim to address these additional URM populations, to verify perceived influence, and to quantify the impact of demographic concordance during medical school on career advancement.

## Conclusion

We found that gender and race/ethnicity concordance is perceived as especially important and influential in specialty selection by minority and female medical students. In order to best support these students, further diversify medical specialties, and reduce underrepresentation in advancement, it is important that academic institutions recruit and retain a diverse faculty.

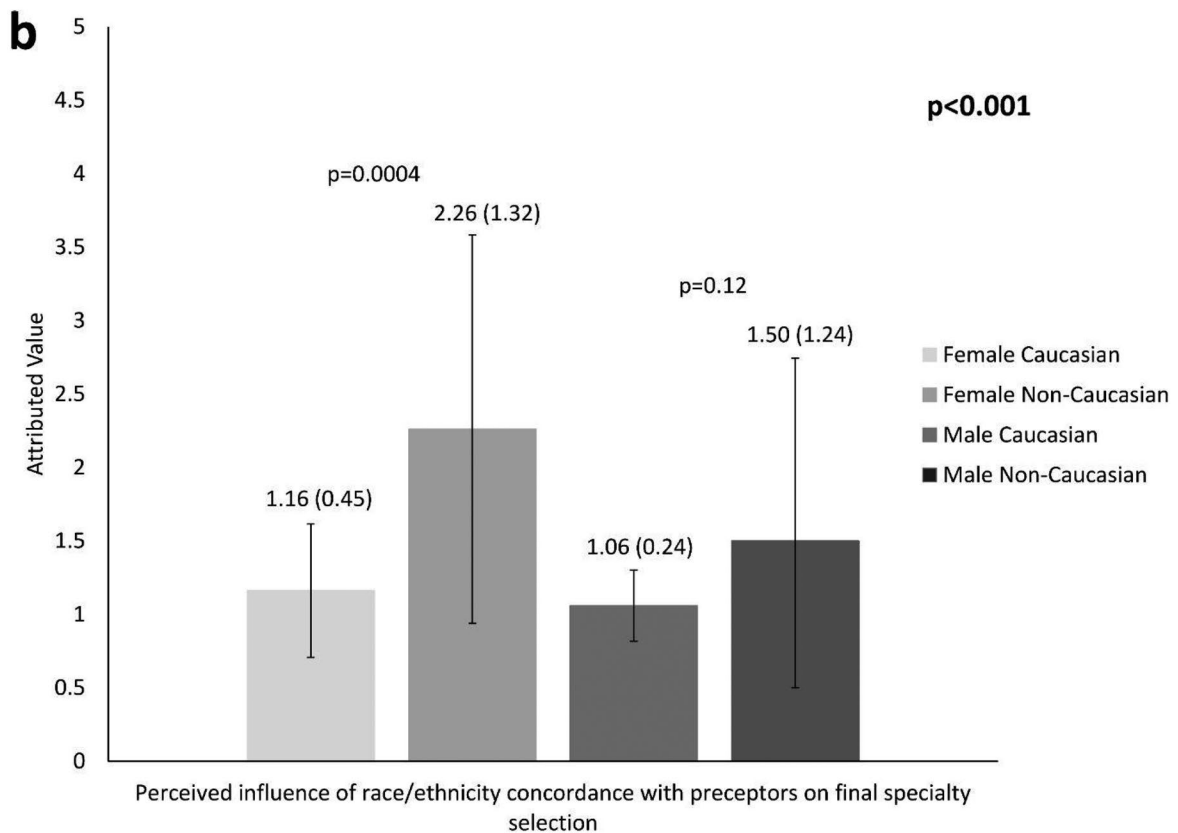
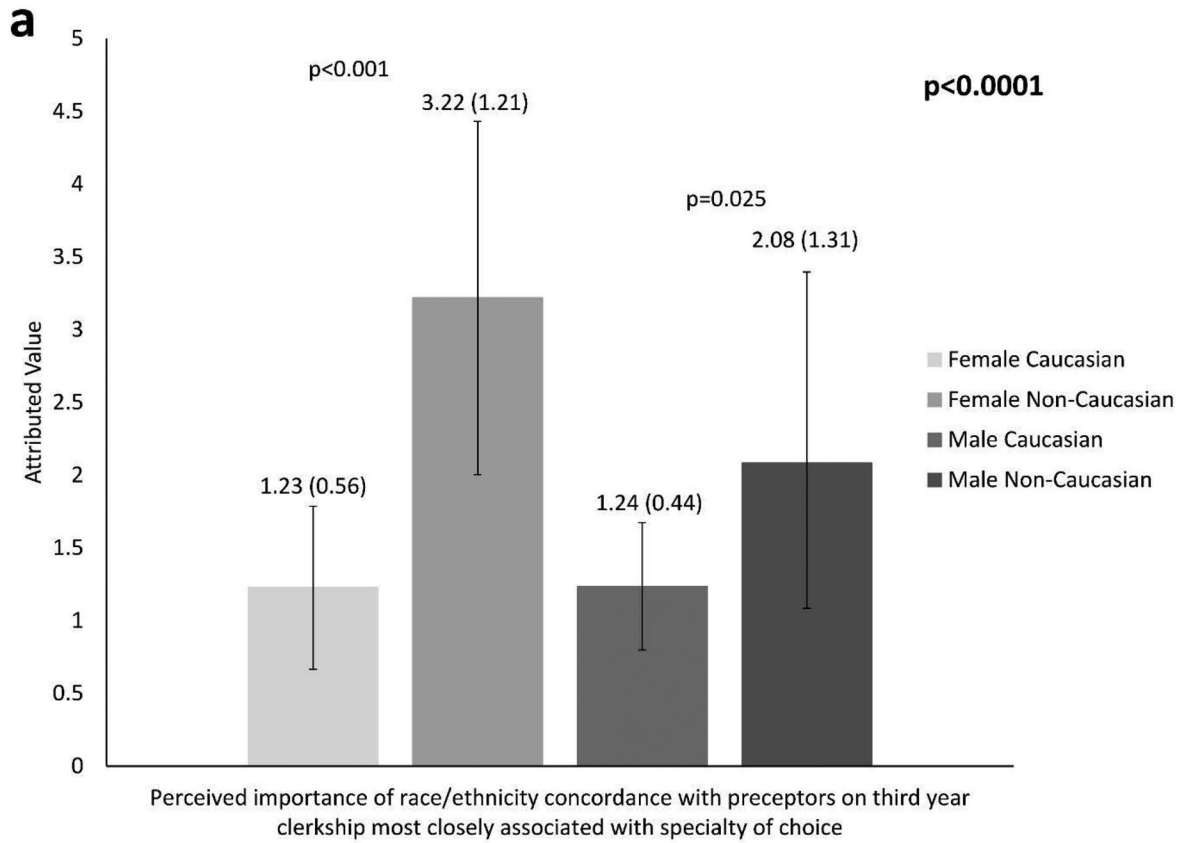
**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s40670-024-02044-6>.

## Declarations

All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

## References

1. Jagsi R, Griffith KA, DeCastro RA, Ubel P. Sex, role models, and specialty choices among graduates of US medical schools in 2006–2008. *J Am Coll Surg*. 2014;218(3):345–52. <https://doi.org/10.1016/j.jamcollsurg.2013.11.012>.
2. Schmidt LE, Cooper CA, Guo WA. Factors influencing US medical students' decision to pursue surgery. *J Surg Res*. 2016;203(1):64–74. <https://doi.org/10.1016/j.jss.2016.03.054>.
3. Stephens EH, Heisler CA, Temkin SM, Miller P. The Current Status of Women in Surgery: How to Affect the Future. *JAMA Surg*. 2020;155(9):876–85. <https://doi.org/10.1001/jamasurg.2020.0312>.
4. Penaloza NG, ZailaArdines E, Does K, Washington S, Tandel SL, MD, Braddock CH, Downs TM, Saigal C, Ghanney Simons EC. Someone Like Me: An Examination of the Importance of Race-Concordant Mentorship in Urology. *Urology*. 2023;171:41–8. <https://doi.org/10.1016/j.urology.2022.08.059>.





◀**Fig. 4** Perceived importance attributed to race/ethnicity concordance with preceptors on the third year clerkship most associated with specialty of choice (a) and perceived influence of race/ethnicity concordance on specialty choice (b)

5. Kaminski A, Falls G, Parikh P. Clerkship Experiences During Medical School: Influence on Specialty Decision. *Med Sci Educ.* 2021;31:1109–14. <https://doi.org/10.1007/s40670-021-01281-3>.
6. NguemeniTiako MJ, Johnson S, Muhammad M, Osman NY, Solomon SR. Association Between Racial and Ethnic Diversity in Medical Specialties and Residency Application Rates. *JAMA Netw Open.* 2022;5(11):e2240817. <https://doi.org/10.1001/jamanetworkopen.2022.40817>.
7. Cheng JL, Park LS, Dibble EH, Baird GL, George PF, Ahn SH. Diversity in interventional radiology: Survey of medical student interest with focus on women and members of underrepresented in medicine racial and ethnic groups. *Clin Imaging.* 2023;103:109964. <https://doi.org/10.1016/j.clinimag.2023.06.026>.
8. Yoon JD, Ham SA, Reddy ST, Curlin FA. Role Models' Influence on Specialty Choice for Residency Training: A National Longitudinal Study. *J Grad Med Educ.* 2018;10(2):149–54. <https://doi.org/10.4300/JGME-D-17-00063.1>.
9. Lee AL, Erlich DR, Wendling AL, Morley CP, Prunuske J, Polverento ME, Kovar-Gough I, Phillips JP. The Relationship Between Medical School Clerkships and Primary Care Specialty Choice: A Narrative Review. *Fam Med.* 2022;54(7):564–71. <https://doi.org/10.22454/FamMed.2022.857719>.
10. Winfrey SR, Parameswaran P, Gerull KM, LaPorte D, Cipriano CA. Effective Mentorship of Women and Underrepresented Minorities in Orthopaedic Surgery: A Mixed-Methods Investigation. *JB JS Open Access.* 2022;7(4):e22.00053. <https://doi.org/10.2106/JBJS.OA.22.00053>.
11. Yehia BR, Cronholm PF, Wilson N, Palmer SC, Sisson SD, Guiliames CE, Poll-Hunter NI, Sánchez JP. Mentorship and pursuit of academic medicine careers: a mixed methods study of residents from diverse backgrounds. *BMC Med Educ.* 2014;14:26. <https://doi.org/10.1186/1472-6920-14-26>.
12. Myers PL, Amalfi AN, Ramanadham SR. Mentorship in Plastic Surgery: A Critical Appraisal of Where We Stand and What We Can Do Better. *Plast Reconstr Surg.* 2021;148(3):667–77. <https://doi.org/10.1097/PRS.0000000000008295>.
13. AAMC. 2018-2019 The State of Women in Academic Medicine: Exploring Pathways to Equity. Accessed Dec 6, 2023. <https://www.aamc.org/data-reports/data/2018-2019-state-women-academic-medicine-exploring-pathways-equity>.
14. Hill KA, Samuels EA, Gross CP, Desai MM, SitkinZelin N, Latimore D, Huot SJ, Cramer LD, Wong AH, Boatright D. Assessment of the Prevalence of Medical Student Mistreatment by Sex, Race/Ethnicity, and Sexual Orientation. *JAMA Intern Med.* 2020;180(5):653–65. <https://doi.org/10.1001/jamainternmed.2020.0030>.
15. Sabin JA, Nosek BA, Greenwald AG, Rivara FP. Physicians' Implicit and Explicit Attitudes About Race by MD Race, Ethnicity, and Gender. *J Health Care Poor Underserved.* 2009;20(3):896–913. <https://doi.org/10.1353/hpu.0.0185>.
16. Shen MJ, Peterson EB, Costas-Muñiz R, et al. The Effects of Race and Racial Concordance on Patient-Physician Communication: A Systematic Review of the Literature. *J Racial and Ethnic Health Disparities.* 2018;5:117–40. <https://doi.org/10.1007/s40615-017-0350-4>.
17. Sharma S, Hillier T, Parsons M, et al. Promoting Equity, Diversity, and Inclusion in Medicine: A Comprehensive Toolkit for Change in Radiology. *Can Assoc Radiol J.* 2023;0(0). <https://doi.org/10.1177/08465371231214232>.
18. Usoro A, Hirpa M, Daniel M, Harris V, Ware A, Kernodle A, Elliott T, Piggott DA, Bienstock JL. Promoting Diversity, Equity, and Inclusion: Building Community for Underrepresented in Medicine Graduate Medical Education Trainees. *J Grad Med Educ.* 2021;13(1):33–6. <https://doi.org/10.4300/JGME-D-20-00925.1>.

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