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# Race and Gender Imbalance in Academic Obstetrics and Gynecology

**Logan S Corey<sup>1\*</sup> MD, Rosa M Polan<sup>1</sup> MD and Radhika P Gogoi<sup>1</sup> MD PhD**<sup>1</sup>Karmanos Cancer Institute, Wayne State University, Detroit, MI, USA**\*Corresponding author:** Logan S Corey, Karmanos Cancer Institute, Wayne State University, John R Street, Detroit, MI, 48201, USA.**Received Date:** April 27, 2023**Published Date:** May 18, 2023**Abstract****Background:** Obstetrics and Gynecology is the only core medical specialty becoming more homogenous and less diverse.**Objectives:** To characterize the racial, ethnic, and gender balance of Obstetrics and Gynecology trainees and academic faculty. To describe attrition and promotion rates, stratified by race and gender.**Methods:** Obstetrics and Gynecology residency program applicants, matriculated residents, subspecialty fellowship applicants, academic faculty recorded by the American Association of Medical Colleges (AAMC) between 2001 and 2020 were included. Gender, race, ethnicity, applicant number of publications, faculty promotion, and attrition rates were analyzed. Descriptive statistics and bivariable tests were used to examine associations.**Results:** In 2005 35% of Obstetrics and Gynecology residency applicants were male and 65% were female. By 2020, this proportion was significantly more polarized at 20% and 80%, respectively ( $p < 0.001$ ). Male applicants reported an average of 3.41 publications compared with 2.75 reported by female applicants ( $p < 0.001$ ). Similar proportions of male and female faculty were promoted within ten years of initial hire. White faculty were more like than Black faculty to be promoted within ten years of hire, regardless of gender. The proportion of White males decreased from 35% to 23% between 2010 and 2020, while the proportion of White females increased from 35% to 43%.**Conclusion:** White women make up an increasing majority of the workforce in Obstetrics and Gynecology while the diversity of the residency applicant pool has stagnated. Efforts to increase race and gender diversity among the residency applicants and academic faculty of OB/GYN are urgently needed.**Introduction**

Racial and gender equity is an important priority across medical fields. A diverse workforce is thought to deliver healthcare more effectively, particularly for medically underserved populations [1,2]. In 2021, nearly two-thirds of practicing Obstetricians and Gynecologists and 85% of trainees were women [3]. Obstetrics and Gynecology is relatively more racially and ethnically diverse than other medical specialties, with 11% Black and 7% Hispanic practicing physicians [4,5]. Unfortunately, this is not reflected at the top of the academic hierarchy. Women and racial minorities are underrepresented in Chairperson and department leadership positions in Obstetrics and Gynecology [6]. This remains the case despite a contemporary focus on persistent inequality in academic

medicine that has sparked meaningful inquiries regarding professional fairness [1,7].

Though gender and racial disparities at the top of the academic hierarchy have been well described, there is a knowledge gap regarding disparities that affect the bulk of the workforce, among Obstetrics and Gynecology residency program applicants, matriculated residents, subspecialty fellows, and early career faculty. True gender and racial diversity are necessary for the health and progress of our specialty and cannot be achieved without first understanding the scope of the issue.

We aim to characterize the racial, ethnic, and gender balance of contemporary Obstetrics and Gynecology residency applicants

and academic faculty. We further aim to describe attrition and promotion rates for academic faculty, stratified by race and gender. Finally, we analyzed residency applicants' total publications by race and gender as a quantitative descriptor as USMLE scores were unavailable.

## Methods

This cross-sectional study included all Obstetrics and Gynecology residency program applicants, matriculated residents, subspecialty fellowship applicants, and faculty recorded by the American Association of Medical Colleges (AAMC) between 2001 and 2020. Data about faculty came from the AAMC's Annual Faculty Roster. This national database contains demographic and employment records for more than 95% of full-time faculty at accredited US medical schools.

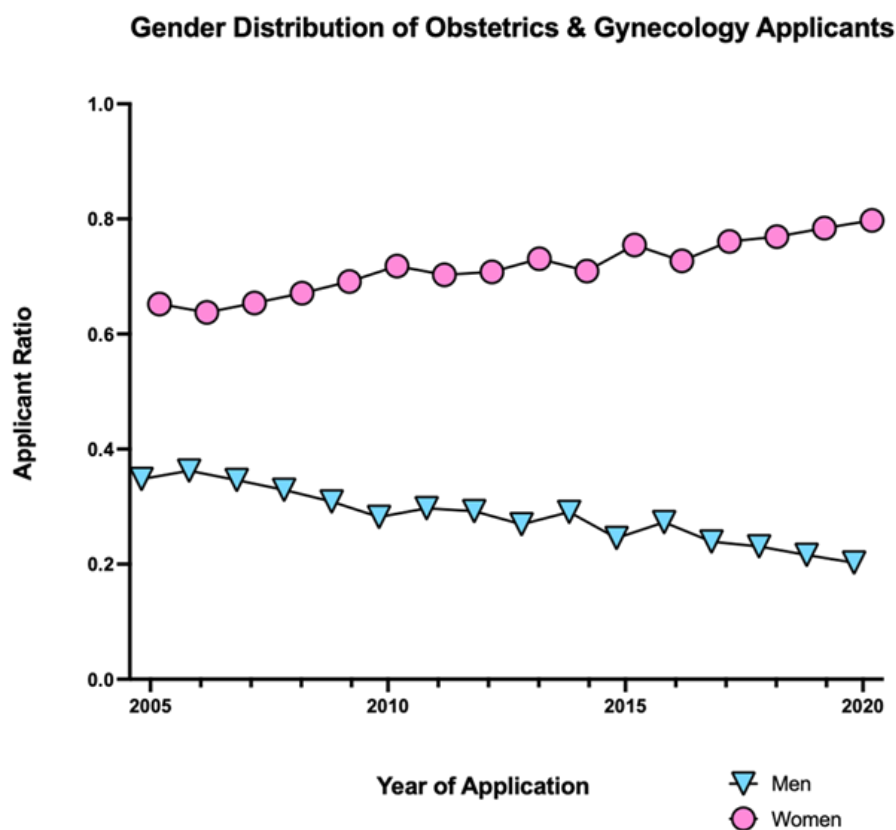
Data about gender, race, and ethnicity were pulled from three national sources: AAMC Student Records System, AAMC Minority Physicians Database, and the American Medical Association Physician Masterfile. Data from these sources were merged to form a cohesive analytic data set. A medical student's self-reported primary racial and ethnic background was classified as White, Black, Hispanic, or Asian (inclusive of persons who identify as Native American, Alaska Native, or Pacific Islander). These categories were treated as mutually exclusive for this analysis. Those who did not report their racial or ethnic background in any category, marked multiple racial categories, or marked "other" were excluded. The

self-reported primary racial and ethnic backgrounds of Obstetrics and Gynecology residents, subspecialty fellows, and academic faculty were categorized according to the same classifications.

Full-time faculty members whose first assistant or associate professor appointment began between January 1, 2000, and December 31, 2010, were tracked for 10 years to determine promotion outcomes. Full-time faculty members appointed to an Obstetrics and Gynecology department between January 1, 2000, and December 31, 2015, were tracked for five years to determine attrition outcomes. Promotion and attrition rates of MD, MD-PhD, and DO faculty at the ranks of Instructor, Assistant Professor, Associate Professor, and Full Professor only were recorded. Information about voluntary and part-time faculty was excluded, as was information about faculty with a Ph.D. alone.

The average number of abstracts, presentations, and publications per Electronic Residency Application Service (ERAS) applicant to Obstetrics and Gynecology residency and subspecialty fellowship programs were calculated and stratified by gender, race, and ethnicity. The institutional review board considered this project to be exempt, because of the deidentified nature of this national dataset. Descriptive statistics and bivariable tests were used to examine associations; the  $\chi^2$  test and two-sample t-test were used as appropriate. A p-value <0.05 was considered statistically significant and Prism 9.0 (GraphPad Software Inc., CA, US) was used for all analyses.

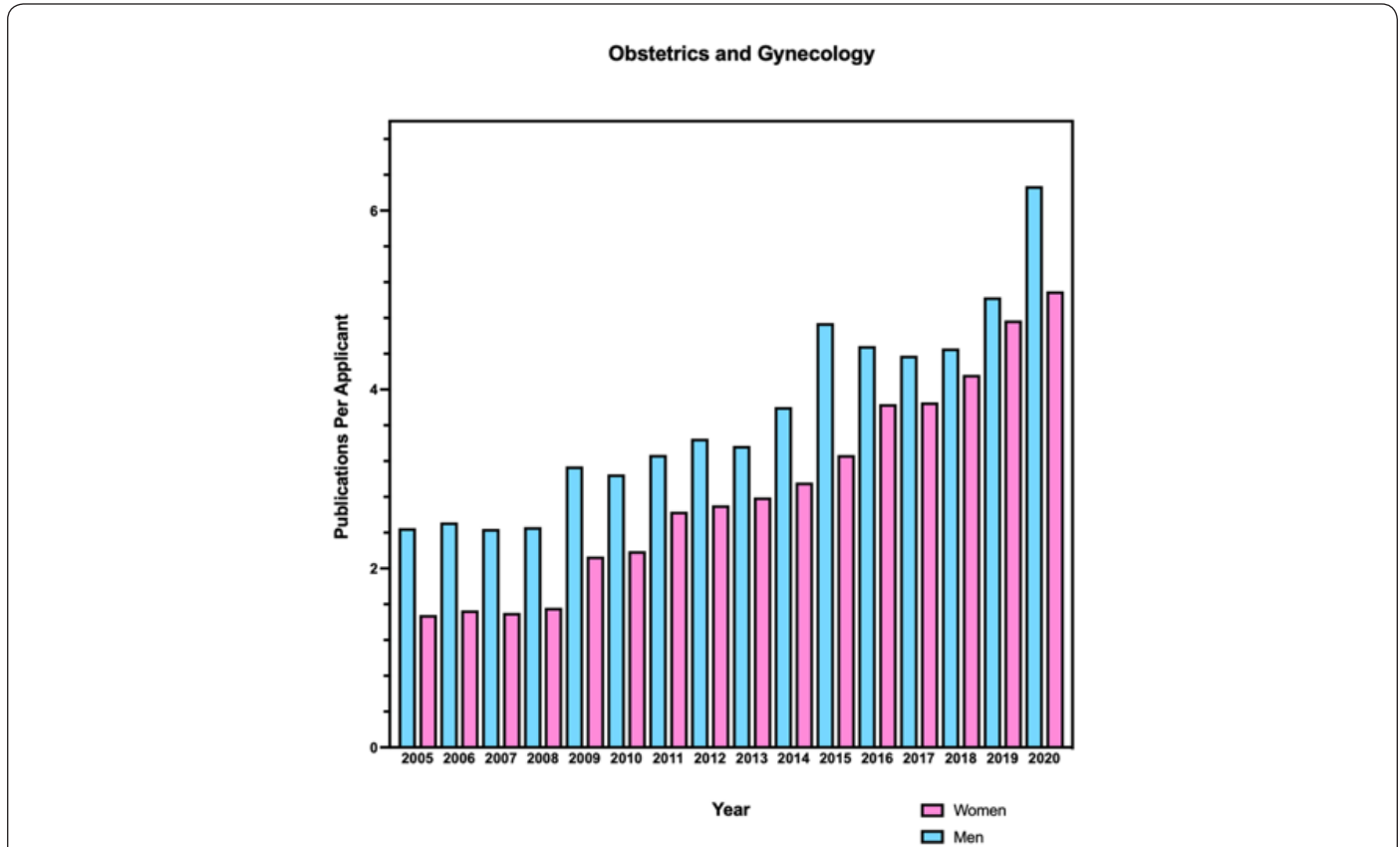
## Results



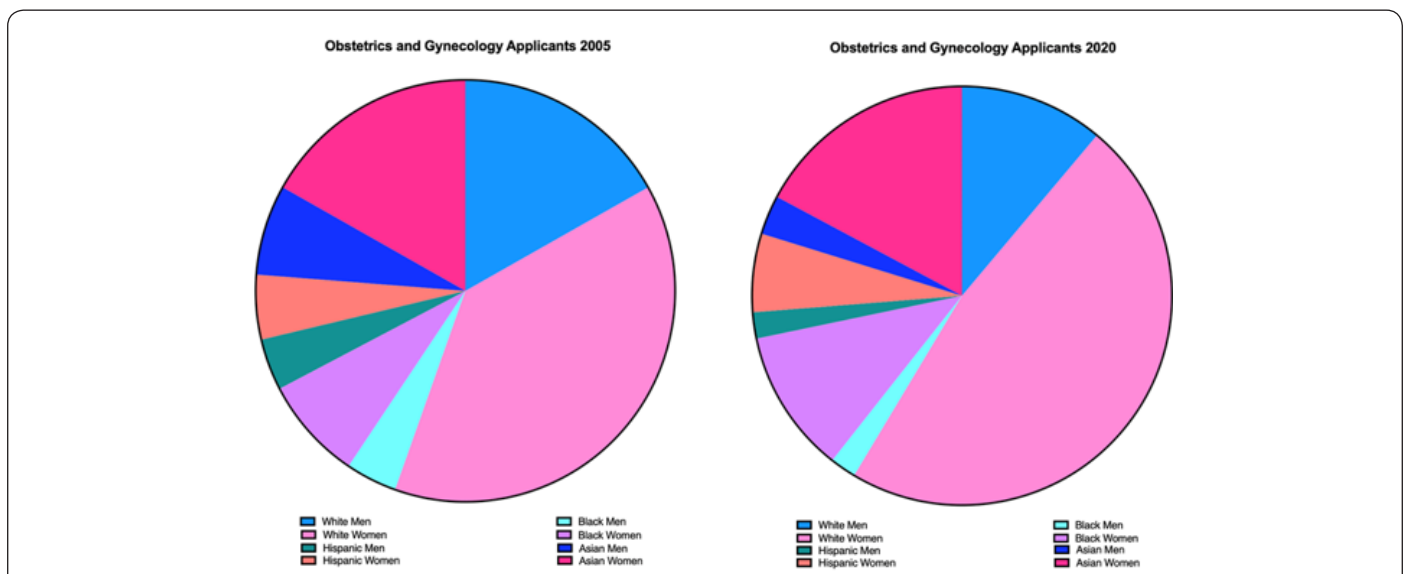
**Figure 1:** The yearly proportion of self-identified Men and Women applicants to Obstetrics and Gynecology residency from 2005 – 2020.

In 2005 35% of Obstetrics and Gynecology residency applicants were male and 65% were female. By 2020, these proportions had become significantly more unbalanced, with 20% male and 80% female applicants (Figure 1,  $p < 0.001$ ). Attrition rates for male and female residents during this period were 1.1% and 0.5%, respectively. The number of abstracts, presentations, and publications per applicant increased for both genders between

2005 and 2020. Male applicants reported an average of 3.41 publications compared with 2.75 reported by female applicants (Figure 2,  $p < 0.001$ ). Applicants who identified as Asian men had significantly more publications than men and women of all other races (range of significance from  $p = 0.049$  to  $p = 0.001$ , data not shown).



**Figure 2:** The average number of Abstracts, Publications, and Presentations per Obstetrics and Gynecology Residency Program Applicant Between 2005 and 2020.



**Figure 3:** The proportion of Obstetrics and Gynecology residency applicants by self-reported gender, race, and ethnicity in 2005 and 2020.

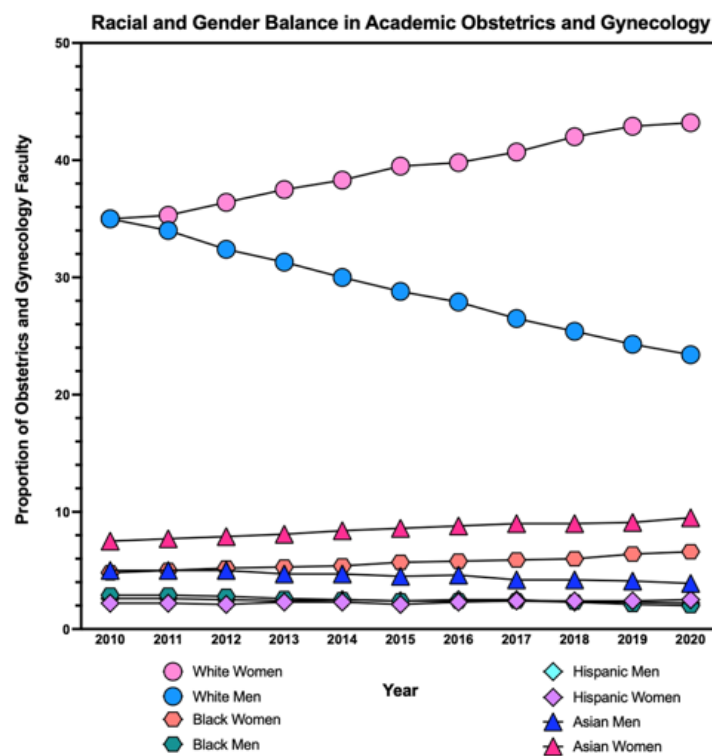
Concerning applicant race, a large absolute change was noted in the proportion of White men applying to Obstetrics and Gynecology residency programs, decreasing from 17% to 11% between 2005 and 2020. By contrast, the proportion of White women applying for these residency positions increased from 39% to 47% of the total applicant pool over this period (Figure 3). The proportion of Asian women did not change between 2005 and 2020 and comprised 17% of the total pool. The proportion of Asian men decreased from 7% to 3%. The proportion of Black women applicants increased from 8% to 11%, and the proportion of Black men applicants decreased from 4% to 2%. The proportion of Hispanic women remained stable at 6%, while the proportion of Hispanic men decreased from 4% to 2%.

Examining Obstetrics and Gynecology accredited subspecialty fellowships between 2014 and 2020, 24% (n=1,091) of all fellows were men and 76% (n=3,548) were women. The racial breakdown among men was as follows: Asian men comprised 10% of fellows (n=109), Hispanic men 7% (n=73), Black men 4% (n=48), and White men 64% (n=692). The racial breakdown among female fellows was different: Asian women comprised 15% of fellows (n=523), Hispanic women 4% (n=143), Black women 7% (n=258), and White women 61% (n=2,164). Over this period, only three men and eleven women left an accredited subspecialty obstetrics and gynecology fellowship.

The number of abstracts, presentations, and publications reported by subspecialty fellowship applicants also varied by

gender. The average number of publications per applicant to Female Pelvic Medicine and Reconstructive Surgery fellowships between 2014 and 2020 was 8.92 for males and 8.19 for females (p=0.21). The average number of publications for male and female applicants to Gynecologic Oncology fellowships between 2018 and 2020 was 11.83 and 12.98, respectively (p=0.16). The average number of publications for male and female applicants to Reproductive Endocrinology and Infertility fellowships between 2018 and 2020 was 24.13 and 14.39, respectively (p=0.11). Lastly, the average number of publications for male and female applicants to Maternal Fetal Medicine fellowships between 2009 and 2017 were 8.77 and 7.72, respectively (p=0.05).

We also examined the gender, ethnic and racial balance of Obstetrics and Gynecology academic faculty, including individuals at the rank of Instructor, Assistant Professor, Associate Professor, and Full Professor (Figure 4). The proportion of Asian women in these faculty appointments increased from 8% to 10% between 2010 and 2020. The proportion of Asian men decreased from 5% to 4% over this period. The proportion of Black women increased from 5% to 7%, while the proportion of Black men decreased from 3% to 2%. The proportion of Hispanic women in academic faculty in Obstetrics and Gynecology increased from 2% to 3% while the proportion of Hispanic men proportionally decreased from 3% to 2%. The largest absolute changes were noted in the proportions of White men and women; the proportion of White men decreased from 35% to 23% between 2010 and 2020, while the proportion of White women increased from 35% to 43%.



**Figure 4:** The yearly proportion of Obstetrics and Gynecology faculty by self-reported gender, race, and ethnicity from 2005 – 2020.

Promotion and attrition rates for Obstetrics and Gynecology academic faculty also differed by race, ethnicity, and gender (Table 1). All full-time faculty appointed between January 1, 2000, and December 31, 2010, were followed for 10 years, a cohort of 1,916 men and 2,564 women. One-third of White and Asian men (34% for both) were promoted within ten years of hire, compared with 23% (n=30) of Black men and 27% (n=27) of Hispanic men. Overall, 32%

of male faculty were promoted within ten years of hire. Promotion rates for women were different by race and ethnicity, with 35% (n=568) of White and 33% (n=124) of Asian women promoted within ten years, compared with 21% (n=48) of Black and 25% (n=28) of Hispanic women. Overall, 31% of women faculty were promoted within ten years of hire.

**Table 1:** Promotion and Attrition Rates of Obstetrics and Gynecology Faculty between 2000 – 2020 by Gender, Race, and Ethnicity.

Promoted Within Ten Years			
Race and Gender	Initial Cohort (N)	Promoted	
Men		N	%
Asian	253	85	33.60%
Black or African American	128	30	23.40%
Hispanic, Latino, or of Spanish Origin	102	27	26.50%
White	1321	453	34.30%
Other	112	26	23.20%
Total	1916	621	32.40%
Women			
Asian	375	124	33.10%
Black or African American	231	48	20.80%
Hispanic, Latino, or of Spanish Origin	109	28	25.70%
White	1603	568	35.40%
Other	123	18	14.60%
Total	2564	786	30.70%
Five Year Attrition Outcomes			
Race and Gender	Initial Cohort (N)	Not Retained After Five Years	
Men		N	%
Asian	373	155	41.60%
Black or African American	148	53	35.80%
Hispanic, Latino, or of Spanish Origin	166	48	28.90%
White	1566	521	33.30%
Other	238	126	52.90%
Total	2491	903	36.30%
Women			
Asian	748	328	43.90%
Black or African American	507	221	43.60%
Hispanic, Latino, or of Spanish Origin	197	75	38.10%
White	3080	1171	38.00%
Other	523	274	52.40%
Total	5055	2069	40.90%

Attrition of Obstetrics and Gynecology academic faculty appointed between January 1<sup>st</sup>, 2000, and December 31<sup>st</sup>, 2015 also differed by race, ethnicity, and gender. Among male faculty, 33% of White men (n=521) were not retained five years after hire, compared with 36% (n=53) of Black men, 29% (n=48) of Hispanic men, and 42% (n=155) of Asian men. Attrition of women faculty

by race and ethnicity was variable, with 44% of Black and Asian women (n=221 and n=328) not retained five years after hire, compared with 38% of White and Hispanic women (n=1,171 and n=75, respectively). Overall, female faculty had an attrition rate of 41% compared with 31% for male faculty.

## Discussion

Our study found that the demographic landscape of academic Obstetrics and Gynecology has shifted over the past two decades. More female medical students are applying to Obstetrics and Gynecology residency programs, enrolling in accredited subspecialty fellowships, and being promoted and retained in academic medicine than ever before. This represents a tremendous change from what was, as recently as 30 years ago, a male-dominated specialty.

Unfortunately, our findings suggest that the most substantial gains have been limited to White women. The proportion of white female Obstetrician and Gynecologist academic faculty increased by 8 percentage points (35 to 43%) while Black, Asian, and Hispanic female faculty increased by just 1-2% over the past two decades. Male academic faculty saw a decline across all races and ethnicities. Additionally, a disparity in promotion rates by race was observed, with White men and women were promoted at higher rates than faculty of other races and ethnicities.

Additionally, we found Black women eligible for full Professorship had just a 28% promotion rate compared to 44% for eligible White and Asian women, 45% for Asian men, 43% for Black men, and 35% for White men. Moreover, Black and Asian women left academic medicine within five years of initial faculty appointment at higher rates than White and Hispanic women (44% versus 38%). These discrepancies persist despite the field of Obstetrics and Gynecology employing a significantly greater proportion of underrepresented minority physicians compared with other academic medical specialties [4].

Although women are now the largest demographic in academic Obstetrics and Gynecology, this "critical mass" has not resulted in equitable workplace conditions, nor has it improved the gender wage gap or decreased gender-based harassment [9]. In fact, within our majority-female specialty, women are still penalized for becoming mothers during training while reimbursement for male-specific procedures remains higher than comparable female-specific procedures, with average salaries for Obstetrician Gynecologists proportionally decreasing as the specialty has become viewed as 'women's work' [10,11]. It's time to consider that simply infusing the specialty with more women at all levels, from medical student applicants to full professors, has not resulted in the expected outcome: equality.

Commentary on the gender imbalance in Obstetrics and Gynecology is not new. In 2003, the former Deputy Editor of the Green Journal, Dr. John T. Queenan, expressed concern that having a specialty dominated by one gender could alter the quality of applicants pursuing obstetrics and gynecology [12,13]. Our study, nearly 20 years later, qualitatively reaffirms this worry and found that the male applicants had objectively higher rates of publications than their female counterparts every year from 2005 – 2020, a common metric used to measure applicant quality. Yet, residency males made up only 20% of applicants in 2020. Asian males in particular significantly outperformed all races and genders in the average number of publications but made up a progressively lower

proportion of applicants year after year.

Published surveys found that when selecting an obstetrician or gynecologist, patients, in general, do not necessarily prefer their Obstetrician and Gynecologist to be male or female. Gender ranks among the top considerations in selecting a physician in fewer than 25% of patients. Overwhelmingly, the patients rank the competency of their physician over gender preference 99.2% of the time [14,15]. This is of note as our study found that the field of OB/GYN is drawing from a shallower and less diverse pool of applicants than ever before as the field is self-selecting out men in preference of women residency applicants.

In 2005, the ACOG Medical Student Recruitment Task Force stated, "in our attempt to attract women to the field in the 1980s and 1990s, we had inadvertently sent the message to male medical students that there no longer was a place for them in obstetrics and gynecology" [16]. Our study confirms this trend is pervasive and ongoing. Despite the long-established concerns of gender homogeneity, the gender gap has continued to broaden over the last 20 years. The disparate clerkship experiences between the male and female medical students have been well described and have been proposed as a reason for failing to encourage men to apply [17]. Unfortunately, any changes encouraged by ACOG and others have failed to materialize as Ob/Gyn is one of the only medical fields becoming more homogenous and less diverse over the last 20 years in regard to gender.

Our study did identify several areas of growth to be celebrated: the proportion of Obstetrics and Gynecology applicants who identified as Black women has increased over the past two decades, the current proportion of female faculty in academia reflects the proportion of all active obstetricians and gynecologists at roughly two thirds, and the overall promotion rate for males and females in academia is comparable.

The major strength of this study is the data collected is from self-identified demographic data, the gold standard for reporting racial, ethnic, and gender variables [18]. Additionally, this dataset includes a large, continuous, and well-maintained database of all medical school applicants who apply through the National Ranking Resident Matching Program and all appointed faculty of medical schools that are members of the AAMC. Lastly, the number of applicants who did not report on gender or race was low (15% or less across all categories), allowing for increased confidence that the proportions of gender and race are accurate.

There are several limitations of this study that should be mentioned. The publication number abstracted by medical school applicants is also self-reported and we do not have data on the number of first authorships, poster presentations, oral presentations, etc. for the applicants; only the aggregate publication number is listed and reported in this study. Academic productivity is difficult to quantify and a first-author, peer-reviewed publication is generally held in higher regard than a middle-author abstract. Also, Step board scores were not available for review as the NRMP and AAMC are currently agreeing upon terms regarding the use of Step scores in research. Lastly, reasons for promotion or

attrition are not included in the data. Microaggressions, bullying, and socioeconomic stressors of underrepresented minorities are common reasons for leaving academic medicine that we could not assess in this study [19].

## Conclusion

Obstetrics and Gynecology as a field has made progressive strides towards achieving greater gender equity but may have had the unintended result of pushing men away from the specialty. Further, despite a recent focus on equity for underrepresented minority physicians in our field, we did not find gains in Black, Hispanic, and Asian women in academia comparable to the increase in the proportion of White women. Efforts should be made to ensure our field has gender, racial, and ethnic equity throughout its ranks to provide excellent healthcare delivery to patients of all backgrounds.

## Acknowledgement

None.

## Conflict of Interest

Authors declare no conflict of interest.

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