

The State of Diversity in Academic Plastic Surgery Faculty across North America

Sahil Chawla, HBSc*
 Amey Chawla, HD†
 Mehwish Hussain, PhD‡
 Ahmer A. Karimuddin, MD,
 MAEd, FRCSC§
 Faisal Khosa, MD, MBA,
 FFRRCSI, FRCPC¶

Background: Gender and racial disparity is prevalent in all surgical subspecialties with women and racial groups historically underrepresented in academic plastic surgery. This study evaluated gender and racial profiles of academic plastic surgery faculty in North America and correlated both with research productivity and its effect on academic ranks of faculty in plastic surgery.

Methods: In this cross-sectional study, we compiled a list of accredited medical schools that offer plastic surgery training for residency. Data were collected on demographics, academic rank, and research output using the Doximity, LinkedIn, and Scopus databases. Data analyses were performed with a Mann-Whitney U test and a Kruskal-Wallis test.

Results: Women who were black, indigenous, and/or other color occupied only 6.25% of plastic surgery faculty leadership positions in North America. There are more women and underrepresented minorities in leadership positions in Canada, when compared with the USA, relative to each country's demographic. In both countries, women and underrepresented minority plastic surgeons had fewer publications, citations, and years of active research. Interestingly, having women in leadership positions was associated with a higher number of women faculty members.

Conclusions: Gender and racial disparity exist in academic plastic surgery in North America. Several changes are required in order for women and underrepresented minorities in medicine to have an equal chance at career advancement. Better representation and diverse leadership have the potential to bring about equity, diversity, and inclusion in academic plastic surgery. (*Plast Reconstr Surg Glob Open* 2021;9:e3928; doi: 10.1097/GOX.0000000000003928; Published online 16 November 2021.)

INTRODUCTION

Despite a growing representation of unique and multicultural societies in North America, racial and gender disparity has been well documented in various specialties of academic medicine.¹⁻⁷ Despite the increasing percentage of women medical graduates and faculty over the past decade,⁸⁻¹¹ the number of women entering plastic surgery constitutes on average 38% across the USA and Canada.¹²

Additionally, although there is a similar amount of prospective interest in academic faculty ranks, the proportion of women who successfully advance to academic leadership roles is significantly lower.¹³⁻¹⁵

Minority patient populations face higher morbidity from injuries like brachial plexus injuries or burn injuries.^{16,17} Diverse populations require personalized approaches to meet their healthcare needs. Hence, to cater to the healthcare needs of these groups, a race- and gender-diverse plastic surgery workforce is critical.¹⁸⁻²⁰ Furthermore, a diverse team of physicians may provide better clinical care and health care system savings and may also be more collaborative in both research and education pursuits.²¹ Underrepresented minority (URM) physicians also facilitate recruitment of URM patients into clinical trials.²¹ Diversity improves morale and diverse teams also have less burnout.²² Before implementing new changes in promoting equity, diversity and inclusion in academic

From the *Faculty of Medicine, University of British Columbia, Vancouver, British Columbia; †The University of the Fraser Valley, Abbotsford, British Columbia; ‡College of Public Health, Imam Abdulrahman bin Faisal University, Dammam, Kingdom of Saudi Arabia; §Department of Surgery, University of British Columbia, Vancouver, British Columbia; and ¶Department of Radiology, Vancouver General Hospital, Vancouver, British Columbia.

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plastic surgery, it is important to have a clear understanding of our current state. Other disciplines have documented significant discrepancies in academic positions, even when accounting for potentially confounding factors such as year of graduation, experience, academic productivity (publications and citations), and awards. Previous investigations have also isolated gender and racial disparities in either Canada or the USA^{23–25}; however, little work has been done to compare the racial and gender disparity in Canadian and US academic plastic surgery faculties. As neighboring global leaders, it is easy to assume that both countries are similar, yet this is far from the truth. It is important to compare the state of gender and racial disparity in both countries, so that future work can be done on learning and adopting diversity-promoting practices from each other.

In our approach to study diversity in academic medicine, we recognize that both gender and race can be social constructs used to categorize distinct populations. Gender can be fluid and changes may occur in a person's gender expression, identity, or both. Similarly, race and ethnicity can be quite complex, as race is linked to physical characteristics, whereas ethnicity is linked to cultural expression and identification. Subsequently, although an individual's gender and ethnicity are not obvious characteristics, their perceived race and gender dictate their lived experiences. Like much progress in medicine, self-reported data on gender and race would be preferred and result in the most accurate representation of academic plastic surgery faculty. However, such a data collection process would require an ethics approval at all participating institutions, which would require collaboration and substantial resources to recruit and retain researchers, and engage faculty members for a significant survey response rate. For this study, a cis-gendered approach for gender and photogenic/surname identification approach for race was considered appropriate metrics for data collection.

The objective of this study was to investigate and compare the gender and racial profiles of faculty in academic plastic surgery across Canada and the USA. Additionally, we evaluated the effect of gender and race on academic productivity as gauged by h-index, number of publications, number of citations, and years of active research.

METHODS

Data Sources

The Canadian Resident Matching Service and the 2019 Accreditation Council for Graduate Medical Education accredited programs list was searched to compile a list of medical schools that offer plastic surgery training for residency in Canada and the USA, respectively. From the list of Canadian programs (n = 13), faculty websites were identified for all but two of the programs, and further analysis was conducted (n = 11). From the combined list of US independent and integrated programs (n = 135), all duplications (n = 30) were removed. Faculty websites for the US programs were identified for all but six of the programs, and further analysis was conducted on the remaining programs

Takeaways

Question: Has there been progress in the gender and racial profiles of faculty in academic plastic surgery across Canada and the USA, and how do the two countries compare?

Findings: Women who were black, indigenous, and/or other color occupied only 6.25% of plastic surgery faculty leadership positions in North America. There are more women and underrepresented minorities in leadership positions in Canada, when compared with the USA, relative to each country's demographic.

Meaning: In an era of antiracism campaigns and #BlackLivesMatter, we still require several changes in order for women and underrepresented minorities in medicine to have an equal chance at career advancement.

(n = 99). Faculty listings were extracted from publicly available program websites and the following information was recorded: faculty name, academic rank, and faculty size. Any missing or outdated information was cross-referenced with online sources such as faculty newsletters, LinkedIn, Dximity, and Google. The data collection period spanned July 2020 to September 2020. Exclusion criterion for faculty websites was either a lack of accessible faculty listing or refusal of participation in the study.

This methodology has been validated in several recent publications.^{1,2,26–28} Data on gender were collected using a cis-gendered approach, and data on racial backgrounds were collected using photogenic/surname approach. Both gender and race were determined at the discretion of the data collectors. Data were collected by two authors independently (SC and SC), and any discrepancies were brought to the senior author (FK). No discrepancies were noted. Two data collectors (SC and AC) developed a coding key to record ethnicity as White, Asian, American Indian, Black, or Hispanic. Data were collected by two authors independently (SC and AC). The senior author (FK) reviewed the data, and no discrepancies were noted. This classification may not apply to Canada, as Canadian Hispanic is not a common racial group. However, for uniformity, the US Census Bureau standards on race and ethnicity were used for regional racial classifications, with individuals of Latino or Hispanic descent classified singularly under the Hispanic heading^{25,29,30} Documentation of city size was made using population estimates from Statistics Canada Census 2016 and US Census 2017.

Study Population

The study population were academic faculty members with (1) an MD degree or equivalent, (2) academic ranking, (3) plastic surgery training, and (4) were accredited plastic surgeons. Board certification of faculty members was confirmed through a search of the Canadian Society of Plastic Surgeons and the American Board of Plastic Surgery databases. The hierarchy of academic rank in ascending order was as follows: assistant professor,

associate professor, professor. Leadership positions identified were chair, department head, chief, and program director of postgraduate training. The exclusion criteria were research faculty, retired and emeritus professors, or faculty members without an MD degree or equivalent.

We used Elsevier's Scopus database to gather information on faculty member's total publications, citations, h-index, and years of research. Scopus was chosen as the database of choice due to its reliability and consistency when compared with Google Scholar or Web of Science.^{31,32} The h-index captures output based on the total number of publications and the total number of citations to those works, providing a focused snapshot of an individual's research performance. The M-index, variant of the h-index, displays h-index per year since first publication (calculated as h-index divided by one's active years of research).

Statistical Treatments

Country, gender, race, and departmental leadership were set as independent factors. City size, number of publications, years since last and first publications, years of active research, years of first and last publication, citations, and h- and M-index were kept as outcome variables. Race was initially classified into five types: White, Asian, American Indian, Black, and Hispanic, which is later dichotomized into White and non-White races. The years of active research was calculated as the difference between the date of first and last publications. Data observations were excluded if a researcher had zero publications.

Descriptive statistics in terms of mean \pm SD and median (interquartile range) are reported. Due to the nonnormal behavior of outcome variables across the categories of factors, Mann-Whitney U test was used to compare differences in publication matrices among gender, dichotomized race, and country. However, to compare the outcome variables among race and departmental leadership, Kruskal-Wallis test with post hoc analysis was executed. The threshold to set a significant difference in outcomes of different categories was a *P* value less than 0.05.

RESULTS

Participants

Of the 1332 faculty members, only 21.8% (*n* = 291) were women. The non-White faculty members consisted of 26.1% (*n* = 348) of all faculty, with a significant majority being of Asian descent (*n* = 255, 19.1%) followed by Hispanic (*n* = 47, 3.5%), Black (*n* = 25, 1.9%), and American Indian (*n* = 21, 1.6%). A majority of faculty members held a position of assistant professor (*n* = 487, 36.6%) followed by the position of professor (*n* = 363, 27.3%) (Fig. 1 A–D).

Gender and Race Disparity in Faculty and City Sizes

Academic programs with a higher number of female plastic surgeons had a higher number of total faculty when compared with the programs with a majority of male plastic surgeons (*P* = 0.0164). Similarly, academic programs with a higher number of White plastic surgeons also had a larger faculty size, when compared with the academic programs with a higher number of non-White plastic surgeons

(*P* = 0.0005). Although not significant, the city size was not associated with the racial and gender composition of faculty in academic programs (*P* > 0.05) (Fig. 2A–D).

Comparison of Publication Matrices

The faculty members from the United States had a significantly higher number of publications than the faculty from Canada (*P* < 0.0001) (Table 1). It was observed that Canadian faculty had a significantly shorter period of being actively involved in research when compared with US faculty (*P* < 0.0001) (Table 1). Comparing the publication matrices of faculty with different departmental roles and leadership, it was observed that the highest number of publications belonged to the director/chair of the department followed by professor and associate professor ranks (Table 2). The lowest number of publications was counted for assistant professor. There was a statistically significant difference in the number of publications by different faculty positions (*P* < 0.0001). The top leadership possessed a longer span of being actively involved in research. The director/chair and professor had a longer year of active research followed by vice chair and associate professor. Assistant professors had the significantly shortest time span of being active in research (*P* < 0.0001).

Comparison of Citation Matrices

Publications from the United States received twice the number of citations when compared with Canadian publications (*P* < 0.0001). The h-index of the US faculty members was almost five-score higher than that of the Canadian faculty (*P* < 0.0001). The median M-index of the US faculty was 0.54, which is significantly greater than Canadian faculty with the median M-index of 0.33 (*P* < 0.0001).

Publications from female faculty members were cited almost half as often as publications from male faculty (*P* < 0.0001). The median h-index of female faculty was 5, which is significantly lower than male faculty with a h-index score of 9 (*P* < 0.0001). There was a significant difference (*P* = 0.029) in the M-index of female and male faculty members, 0.41 and 0.50, respectively. The citations and h-index of White and non-White faculty members were comparable (*P* > 0.05).

The assistant professor rank had the lowest citation score. The citation of associate professor, professor, and vice chair was not significantly different, whereas program director had the highest median number of citations (*P* < 0.0001). A similar pattern was observed for the h-index of different faculty members with assistant professor having the lowest h-index and program directors having the highest (*P* < 0.0001). The M-index on the other hand had a slightly different pattern, which was observed highest for the vice chair when looking at the value of means (*P* < 0.0001).

DISCUSSION

Our study has highlighted significant gender and racial disparities in academic faculty of plastic surgery in Canada

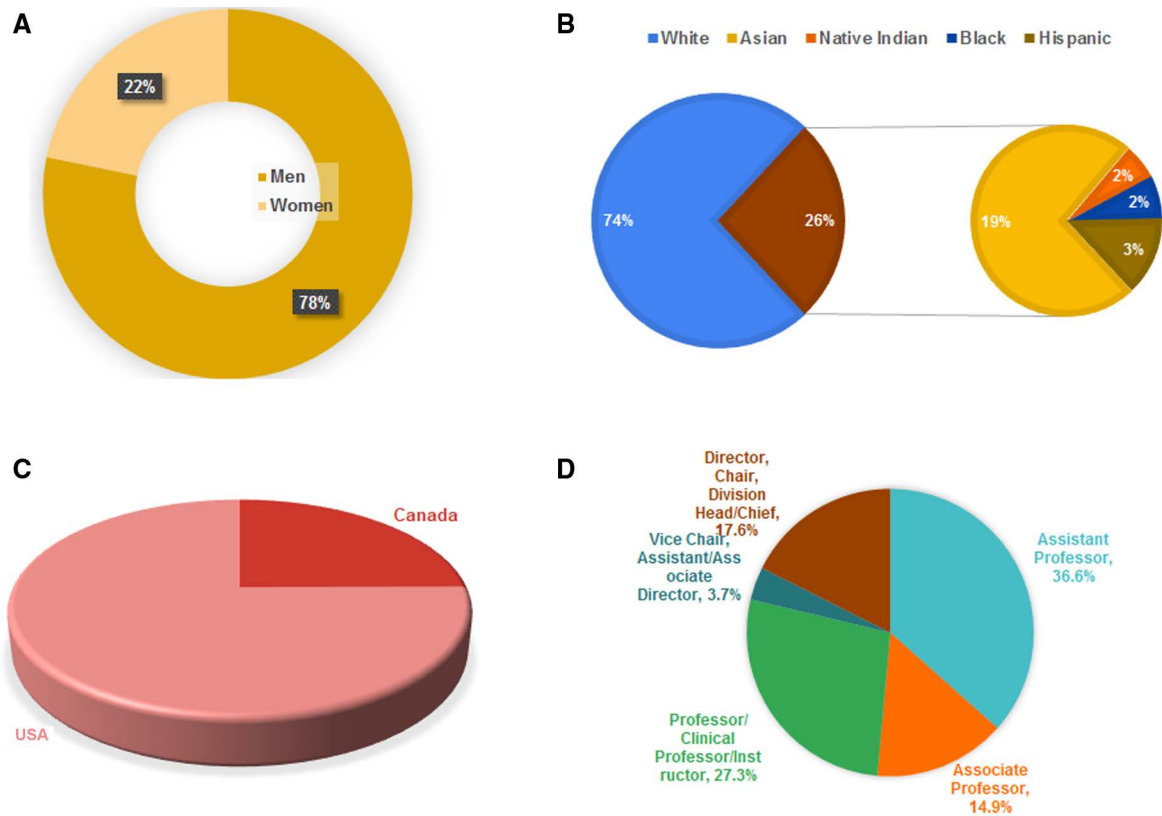


Fig. 1. The demographic profiles of research faculty included (A) gender, (B) race, (C) country of academia, and (D) departmental positions.

and the USA. Although the field has become more diverse and the total number of positions has increased, White, male plastic surgeons had a higher proportion of all positions especially at the higher tiers of academics.

Gender Disparities and Academic Productivity

Our study found that women in academic plastic surgery made up 20% of faculty in the USA and 27% in Canada. More specifically, when focusing on faculty positions in Canada and the USA, respectively, a similar trend is observed, as women account for 28% and 13% for full professors, 60% and 16% for vice chair or assistant/director, and 29% and 16% of department chair. For the USA, these numbers were slightly higher compared with 8 years ago, when 6% of full professors and 6% of department chairs were women.³³ A valid comparison is not available for Canada, as no previous studies assessing the gender disparity among academic plastic surgery faculty are available.

Racial Disparities and Academic Productivity

Our study found that non-White faculty members in academic plastic surgery made up 16% faculty in the USA and 29% in Canada. In both Canada and the USA, non-White faculty members had a significant lower average h-index, compared with White faculty members in the same positions ($P = 0.011$). However, non-White faculty members from the USA had significantly higher h-index when compared with non-White faculty members in Canada ($P = 0.03$). This

suggests that race may play a role in a faculty member's career trajectory. However, future studies looking at other confounding factors should be done to explore this further.

In Canada, although a significant difference in h-index is visible across genders in those of White descent, this disparity is diminished among ethnic groups of people. In specific, academic productivity for Asian and American Indian individuals for both genders was very similar. The only significant difference in academic productivity was seen in Canadian Hispanic and Black individuals. On the other hand, an academic productivity disparity among US academic plastic surgery faculty existed in both White and non-White individuals. The smallest gender disparity for academic productivity among races in the USA was seen among Black individuals.

This significant gender and racial difference in demographics among faculty positions, and trend in higher research productivity being associated with higher academic positions and certain races in Canada and the US, may partially stem from a similar reason, institutional gender and racial inequality.

A Leaky Pipeline?

Despite the increasing number of matriculating women and racially diverse medical students, groups underrepresented in medicine continue to remain a minority in surgical disciplines. This raises the question: is the pipeline leaky by design or by default?

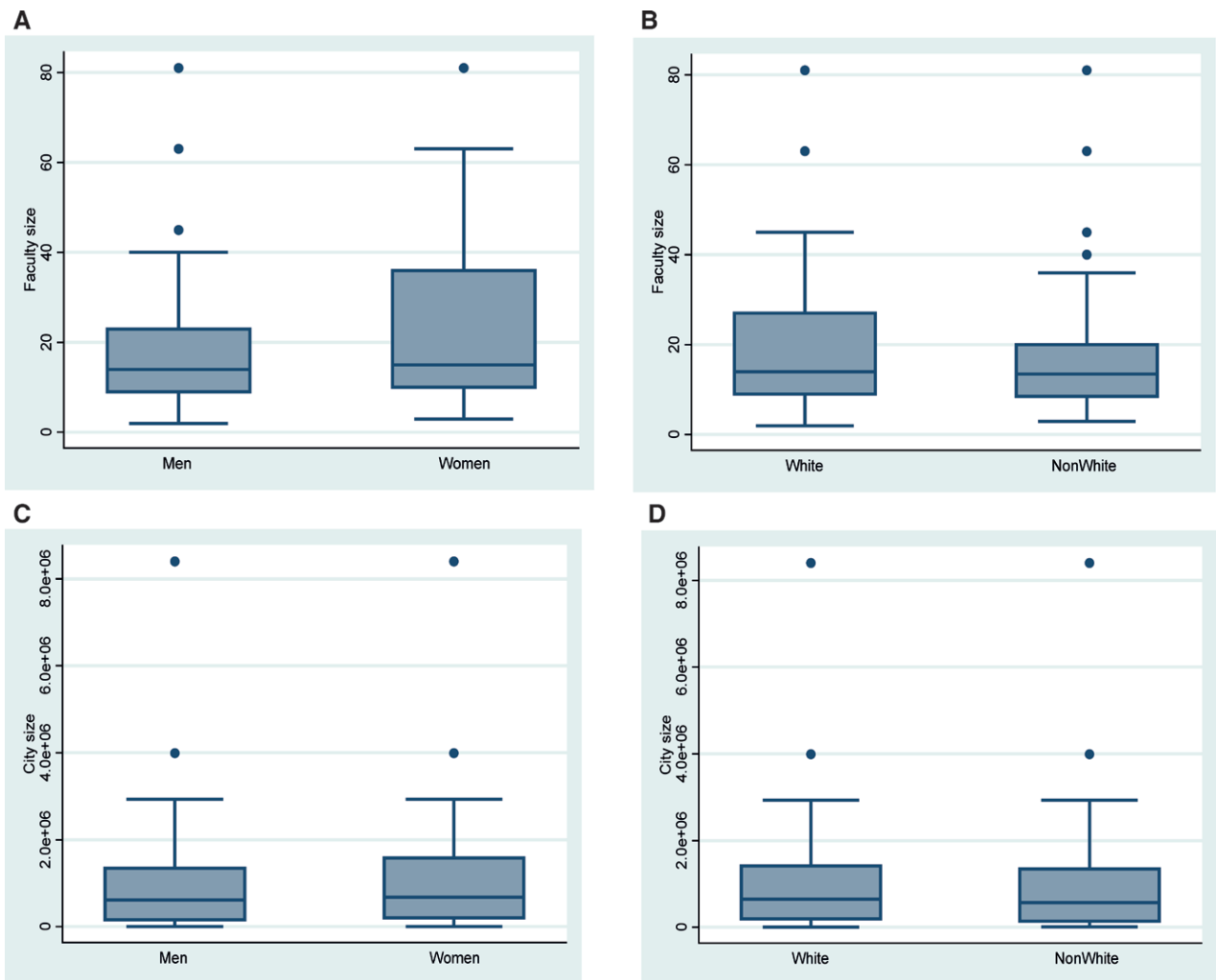


Fig. 2. Comparison of faculty sizes by gender (A) and race (B), and city sizes by gender (C) and race (D).

The College of Physicians (UK) 2009 report showed that women chose specialties that have direct patient interaction and predictable workload and time commitment.³⁴ This may occur as women shoulder more responsibilities related to their family/personal lives than their male colleagues.³⁵ Additionally, when trying to plan families, women report that they often feel pressured to choose between motherhood and plastic surgery.³⁶ With most surgical residencies lasting until residents are age 32 or 33 (at the youngest), maternity leave is either not long enough or not encouraged.³⁷ Similarly, for many years, challenges in bridging the racial disparity in medicine and plastic surgery have remained constant.³⁸ URMs often face impediments to educational progress and training confounded by poor education, lack of mentorship, systemic racism, and stereotyping. URMs are also affected by hiring, promotions, and compensation bias.³

Appointment and promotion in academic medicine may be quite formulaic as applicants need to have a number of publications, citations, awards, and speaking engagements, on their CVs. Some institutions believe that such activities enhance the university's reputation and

are viable measures of an academic's caliber. Although such a framework does not highlight many of the daily activities one performs, it is important to see how this approach may undermine underrepresented minorities in medicine. However, gender and racial inequality can take place when committees consider women for opportunities because institutional and societal culture can impact such considerations.³⁹ For example, women and URMs are often asked to serve important organizational roles, which are not associated with financial or other forms of recognition. This may then impact their ability to conduct research or apply for promotions within the faculty ranks. Along with this, the current trend of failing to plan for succession in leadership positions can impair the academic and professional progression of women in academia.⁴⁰ By ignoring these issues, institutions continue to propagate inequities, and in turn only hinder their own abilities to recruit, retain, and keep engaged, talented faculty. This goes on to impact the level of care provided to patients and the quality of education provided to students. Given that prior evidence implies that performance of groups on multiple tasks is positively correlated with the proportion

Table 1. Comparison of Publication Matrices of Faculty Members across Departmental Leadership, Race, Gender, and Country

Publications			Year of Active Research			Year Since First Publication			Year Since Last Publication			Last Publication Year			First Publication Year		
Mean ± SD	Median (IQR)	P	Mean ± SD	Median (IQR)	P	Mean ± SD	Median (IQR)	P	Mean ± SD	Median (IQR)	P	Mean ± SD	Median (IQR)	P	Mean ± SD	Median (IQR)	P
23.9 ± 42.0	8 (22)	<0.0001	12.3 ± 11.1	10 (17)	<0.0001	18.0 ± 11.5	15 (16)	0.01	5.7 ± 8.8	2 (6)	<0.0001	2014.3 ± 8.8	2018 (6)	<0.0001	2002.0 ± 11.5	2005 (16)	0.008
44.5 ± 68.8	22 (46)	<0.0001	16.5 ± 11.6	14 (16)	<0.0001	19.7 ± 11.5	17 (16)		3.2 ± 6.2	1 (3)		2016.8 ± 6.2	2019 (3)		2000.2 ± 11.5	2003 (16)	
43.9 ± 66.8	21 (48)	<0.0001	16.7 ± 11.9	14 (17)	<0.0001	20.6 ± 11.8	18 (16)	<0.0001	3.9 ± 7.4	1 (4)	0.09	2016.1 ± 7.4	2019 (4)	0.09	1999.4 ± 11.8	2002 (17)	<0.0001
23.1 ± 48.6	10 (21)		11.0 ± 9.2	9 (11.5)		14.5 ± 8.9	12 (11)		3.3 ± 5.4	1 (4)		2016.5 ± 5.4	2019 (4)		2005.5 ± 8.9	2008 (11)	
38.8 ± 64.2	16 (40)	0.074	16.1 ± 12.2	13 (18)	0.009	20.3 ± 12.0	18 (17)	<0.0001	4.2 ± 7.4	1 (5)	<0.0001	2015.8 ± 7.4	2019 (5)	<0.0001	1999.6 ± 12.0	2002 (18)	<0.0001
41.1 ± 62.7	22 (42.5)		13.6 ± 9.8	12 (12)		16.4 ± 9.5	15 (11)		2.8 ± 5.6	1 (3)		2017.2 ± 5.6	2019 (3)		2003.6 ± 9.5	2005 (11)	
38.8 ± 64.2	16 (40)	0.358	16.1 ± 12.2	13 (18)	0.116	20.3 ± 12.0	18 (17)	<0.0001	4.2 ± 7.4	1 (5)	0.006	2015.8 ± 7.4	2019 (5)	0.006	1999.6 ± 12.0	2002 (18)	<0.0001
44.5 ± 69.4	24 (45)		13.5 ± 9.9	12 (12)		16.3 ± 9.6	15 (11)		2.8 ± 5.9	1 (3)		2017.2 ± 5.9	2019 (3)		2003.7 ± 9.6	2005 (11)	
27.6 ± 29.2	19 (25)		12.9 ± 8.3	12 (12)		15.9 ± 7.8	14 (8)		3.0 ± 4.8	0 (3)		2017.0 ± 4.8	2020 (3)		2004.1 ± 7.8	2006 (8)	
30.6 ± 35.1	14 (36)		13.4 ± 10.5	12 (8)		15.6 ± 9.9	12 (6)		2.2 ± 4.5	1 (2)		2017.8 ± 4.5	2019 (2)		2004.4 ± 9.9	2008 (6)	
34.3 ± 42.6	20 (37)		14.5 ± 9.8	14 (12)		17.2 ± 9.4	16 (11)		2.7 ± 4.9	1 (2)		2017.3 ± 4.9	2019 (2)		2002.8 ± 9.4	2004 (11)	
18.1 ± 25.1	10 (18)	<0.0001	10.6 ± 8.7	10 (9)	<0.0001	14.6 ± 9.2	12 (9)	<0.0001	4.0 ± 6.5	1 (5)	<0.0001	2016.0 ± 6.5	2019 (5)	<0.0001	2005.4 ± 9.2	2008 (9)	<0.0001
38.5 ± 43.4	26 (44)		17.1 ± 9.1	16 (12)		20.7 ± 9.9	19 (12)		3.6 ± 7.9	1 (2)		2016.4 ± 7.9	2019 (2)		1999.3 ± 9.9	2001 (12)	
45.8 ± 61.4	21 (56)		18.1 ± 14.4	17 (25)		23.1 ± 13.6	22 (21)		5.0 ± 8.5	1 (6)		2015.0 ± 8.5	2019 (6)		1996.8 ± 13.6	1998 (21)	
81.1 ± 137.7	34 (117)		19.5 ± 11.3	16 (19)		20.8 ± 11.3	17 (17)		1.3 ± 2.6	0 (1)		2018.7 ± 2.6	2020 (1)		1999.2 ± 11.3	2003 (17)	
65.5 ± 92.1	37 (60)		19.3 ± 10.9	19 (15)			21 (14)		2.4 ± 4.8	1 (2)		2017.6 ± 4.8	2019 (2)		1998.4 ± 10.4	1999 (14)	

of women and racially diverse members in the group,^{41–43} it is very important to investigate how we can spark a change.

What Needs To Change

For women and URMs to be able to thrive in surgical specialties and advance in leadership roles, an institutional cultural shift is essential. A shift that embodies policies and practices that support (1) early plastic surgery mentorship, sponsorships, and scholarships to medical students, (2) socially supported leaves of absence for care-giving, (3) a mandate to improve diversity in trainees, and (4) most importantly, a constant reminder to educate oneself.³²

Often times, there is an unmentioned responsibility placed on minority colleagues to educate others and affect change, but this does not need to be the case. The onus to educate oneself and affect change lies on all of us. It is each faculty member’s responsibility to use their platform to dissipate these disparities, regardless of their position on the academic ladder. When we refuse to point out injustices and inequality, it is perceived as permission.

Learning from Our Neighbors

When looking at gender and racial demographics among academic plastic surgery faculty, it is evident that these disparities exist across both Canada and the USA. Despite this, there was a greater proportion of Canadian women in leadership positions in academic plastic surgery faculty in comparison with the USA, relative to their country demographics. Both countries have organizations working to empower, educate, and mentor female surgeons to further seek out leadership roles in plastic surgery—Canada’s Women Plastic Surgeons of Canada and the US’s Women Plastic Surgery and Women in Academic Surgery groups.^{44–46} The difference between the countries in gender and racial academic plastic surgery demographics may be due to the degree of work being done by these organizations. Or perhaps, the fact that Canada only has 13 accredited plastic surgery faculty programs compared with the 135 American accredited programs creates an unfair comparison. By identifying barriers and prior diversity initiatives in Canada and the USA, efforts can be made to address factors that discourage women and URMs from applying and excelling in plastic surgery programs.

Limitations

Our study had a number of limitations. All data collected are public information and hence, we run the risk of it not being up to date. Because the years of active research was calculated as the difference between the date of first and last publications, there may be instances when an individual has prolonged breaks between their first and last publication. For the purposes of this study, we treated full-time versus part-time faculty members/appointments, as equivalent. Apart from assistant professor, associate professor, professor, and leadership positions (identified as chair, department head, chief, and program director), we did not differentiate further into academic tracks. Additionally, the determination of race and gender was

Table 2. Comparison of Citation Matrices of Faculty Members across Departmental Leadership, Race, Gender, and Country

		Citations			h-index			M-index		
		Mean ± SD	Median (IQR)	P	Mean ± SD	Median (IQR)	P	Mean ± SD	Median (IQR)	P
Country	Canada	568.6 ± 1549.1	114.5 (412)	<0.0001	7.9 ± 9.5	4 (8)	<0.0001	0.4 ± 0.4	0.33 (0.46)	<0.0001
	USA	1048.1 ± 2419.4	318.5 (940)		12.9 ± 26.5	9 (12)		0.7 ± 1.2	0.54 (0.57)	
Gender	Men	1039.8 ± 2315.6	312 (986)	<0.0001	12.8 ± 26.0	9 (13)	<0.0001	0.6 ± 1.2	0.5 (0.56)	0.029
	Women	528.6 ± 1914.1	108.5 (340)		7.6 ± 9.1	5 (8)		0.5 ± 0.4	0.41 (0.5)	
Race (Non-White)	White	973.1 ± 2434.4	222 (753)	0.383	12.0 ± 26.8	7 (12)	0.468	0.6 ± 1.2	0.46 (0.52)	<0.0001
	Non-White	803.8 ± 1583.5	303 (866)		10.7 ± 9.6	9 (12)		0.7 ± 0.5	0.59 (0.62)	
Race	White	973.1 ± 2434.4	222 (753)	0.595	12.0 ± 26.8	7 (12)	0.724	0.6 ± 1.2	0.46 (0.52)	0.001
	Asian	881.6 ± 1761.3	316.5 (907)		11.2 ± 10.2	9 (12)		0.7 ± 0.5	0.62 (0.64)	
	Native Indian	454.1 ± 560.4	221 (504)		9.1 ± 7.0	7 (8)		0.6 ± 0.4	0.45 (0.44)	
	Black	512.2 ± 665.2	277 (554)		9.0 ± 7.3	5 (11)		0.7 ± 0.5	0.46 (0.69)	
	Hispanic	694.4 ± 1132.8	173 (574)		9.4 ± 8.3	6 (11)		0.5 ± 0.3	0.5 (0.47)	
Departmental leadership	Assistant Professor	336.5 ± 1004.5	104 (275)	<0.0001	7.5 ± 25.4	5 (7)	<0.0001	0.6 ± 1.6	0.38 (0.48)	<0.0001
	Associate Professor	778.6 ± 1270.6	359 (812)		11.4 ± 8.5	10 (11)		0.6 ± 0.4	0.52 (0.55)	
	Professor/Clinical	1216.2 ± 2225.6	380 (1225.5)		14.4 ± 30.7	9.5 (16)		0.6 ± 0.8	0.46 (0.55)	
	Professor/Instructor									
	Vice Chair, Assistant/ Associate Director	2457.4 ± 6411.0	531 (1563)		17.4 ± 17.8	12 (17)		0.8 ± 0.6	0.56 (0.7)	
	Director, Chair, Division Head/Chief	1518.1 ± 2706.8	632 (1445)		15.4 ± 12.5	13 (13)		0.7 ± 0.4	0.65 (0.55)	

at the discretion of the data collectors. Future efforts discussing disparities may choose to employ other tools for race and gender categorization.⁴⁷ Platforms like www.genderize.io may provide a certain degree of accuracy where photograph-identification is limited. Because the US Census Bureau standards on race and ethnicity were used for racial classifications, indigenous populations were not given their own race classification. Additionally, the citation database that was used for analysis (Scopus) does not account for citations before 1995, likely resulting in the artificially depressed h-indices of more senior authors.⁴⁸ However, because increasing h-indices were associated with senior academic positions, and the median number of years of active research was comparable between genders, this potential source of error was mitigated.

CONCLUSIONS

In conclusion, this study provides further evidence that gender and racial disparity persists in academic plastic surgery across North America. Interestingly, there are more women and URMs in leadership positions within academic plastic surgery in Canada, when compared with the USA, relative to each country’s demographic. There is a paucity of women and URMs in academic plastic surgery not only in overall numbers but also in higher academic positions and research productivity. These findings warrant further investigation, and future studies could compare Canadian and American women and URMs by examining other potential variables such as the presence of mentors and role models, financial support, marital status, the number of children, and the age of female plastic surgeons at various academic stages.

Just as we apply the scientific method to our plastic surgery procedures, we must be systematic and committed to equity, diversity, and inclusion in academic plastic surgery. As Mahatma Gandhi once said, “our ability to reach unity in diversity will be the beauty and test of our civilization.”⁴⁹ The time is now to take action.

Faisal Khosa, MD
 Vancouver General Hospital
 899 W 12th Ave
 Vancouver, BC V5Z 1M9
 Canada
 E-mail: fkhosa@gmail.com

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