Racial Disparity in Gender Affirming Surgery: A Comparative Study on Plastic Surgeon Social Media Use

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Background: In the past 5 years, social media use among plastic surgeons has grown to become a common modality used to promote one's practice. However, surgeons lack the necessary ethical training to understand how their published content impacts patient opinions and behavior. Social media trends among plastic surgeons may contribute to the reduced rate of Black (non-White) patients accessing gender affirming surgery.

Methods: In total, 250 gender affirming surgeons and 51,698 individual posts from social media platform, Instagram, were manually extracted and analyzed. Posts were assessed for inclusion and categorized by the subject's skin color (White versus non-White) using the Fitzpatrick scale.

Results: Of the 3101 included posts, 375 (12.1%) portrayed non-White subjects. Of the 56 included surgeons, White surgeons were found to be 2.3 times less likely to include non-White subjects in their posts, compared with non-White surgeons. Regionally, surgeons practicing in the Northeast had the most racially diverse social media accounts, with over 20% of all posts including a non-White subject. Analyzing data over the past 5 years demonstrated no relative increase in the amount of non-White subjects being displayed on social media, while social media use by gender affirming surgeons had increased by over 200%.

Conclusion s: The low number of non-White individuals portrayed by surgeons on social media perpetuates the racial disparity seen in patients accessing gender affirming surgery. Surgeons must be conscious of the demographic they portray on social media, as a lack of representation may influence patients' self-identify and decision to utilize gender affirming surgical treatment. *(Plast Reconstr Surg Glob Open 2023; 11:e5009; doi: 10.1097/GOX.0000000000005009; Published online 15 May 2023.)*

INTRODUCTION

Transgender and gender diverse (TGGD) individuals face significant barriers to healthcare, frequently citing a lack of access to culturally competent providers.[1–6] With high levels of medical mistrust among sexual and gender minority patients, TGGD individuals are increasingly using social media to voice their concerns and questions regarding gender affirming surgery.[7,8] As social media has grown to dominate over traditional media (TV, periodicals, radio), plastic surgeons are beginning to use online social media platforms as a main method of engagement with patients.[9–11] Appropriate diversity among plastic surgeons' social media content is vital to promote interaction with all patients and critical for the TGGD population, as they already face increased barriers to care.

Expanding beyond gender diverse patients, racial and ethnic minorities in the United States struggle with reduced access to surgical care,[12] contributing to lower healthcare outcomes compared with their majority counterparts.[13] Culturally competent care has been cited to increase satisfaction among minority patients,[14,15] posing a challenge to the field of plastic surgery where minority physicians are severely underrepresented.[16,17] Not only are Black plastic surgeons underrepresented relative to

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the US population, but there has been no documented increase in the portion of integrated plastic surgery residents who identified as Black or Hispanic,[18] indicating this trend is not improving.

The field of plastic surgery has been noted to struggle with adequate racial representation on social media. A study assessing patients' skin tone on Instagram accounts of plastic surgery journals and professional organizations demonstrated only 11.9% of patient images displayed non-White skin tones, which was a significant underrepresentation when compared with US Census data on racial demographics ($P < 0.001$).[19] Recent reports indicate Black patients to be less likely to access plastic surgery, specifically regarding breast reconstruction and gender affirming procedures.[20–24] Hassan et al reported that a lack of representation of Black patients in social media posts by plastic surgeons may be contributing to the national decline seen in Black individuals utilizing breast reconstruction surgery.[25] The impact of social media inclusion on TGGD patients choosing to undergo plastic surgery has yet to be analyzed.

The Williams Institute has estimated that 16% of the TGGD population in the United States identifies as Black or African American, which is significantly higher than the 12% of US citizens identifying as Black or African American.[22,26] Despite their over representation in the US TGGD population, Black individuals only account for 2.6%–9.7% of all patients undergoing gender affirming surgery ($P < 0.001$).[20,21] This discrepancy is most likely due to a whole host of socioeconomic and systemic issues, with provider mistrust being one of the most pertinent contributors. Of the 27,715 respondents to the 2015 U.S. Transgender Survey, 23% reported not seeing a physician when they needed to because of fear of being mistreated due to their gender identity.[27] Our study aims to quantify the diversity of non-White skin tones displayed by gender affirming surgeons on their respective social media accounts and uncover the implication it may have on patient behavior.

Historically neglected populations, such as TGGD and racial minority patients, need and deserve explicit and intentional efforts on the part of the plastic and reconstructive community to center them in our discussions and portrayals.[28] By centering a marginalized population, we can help alleviate some of the burden of discrimination that they carry.

METHODS

The surgeon directory from the *TransHealthCare* database was used to identify 973 gender affirming surgeons in the United States. Each of the 973 surgeons were assigned an ID number, which were entered into IBM's SPSS statistical software to randomly select a cohort of 250 surgeons, which went on to have their social media output analyzed. Data from social media platform, Instagram, were extracted manually from February 1, 2022 to April 1, 2022.

The selection and inclusion of Instagram posts were completed manually by four reviewers. Included data were posted between January 2017 and December 2021. Posts

Takeaways

Question: In the United States, Black transgender patients are less likely to seek gender affirming surgery. This study questions how social media trends among plastic surgeons may contribute to this racial disparity.

Findings: Surgeons were significantly less likely to post images depicting non-White subjects. Over the past 5 years, the rate of non-White subjects being portrayed on surgeons' social media accounts has not improved.

Meaning: Surgeons must be conscious of the demographic they portray on social media, as a lack of representation may influence patients' self-identify and decision to seek gender affirming surgical treatment.

were educational or self-promotional, consisting of photos or videos, including visual representation of a patient. Language or content in the posts relating to gender affirmation surgical procedures (keywords) were used to signify inclusion, and posts pertaining to anything other than gender affirming surgery were excluded.. Keywords included "Facial Feminization," "MTF (Male to Female)," "FTM (Female to Male)," "Top Surgery," "Tracheal Shave," etc. Exclusion criteria included "Stories" and "Highlights" shared on Instagram, as well as content shared on private Instagram pages. Excluded posts were also those not associated with gender affirming surgery (such as a professional photo about the staff in a surgeon's office or personal photos of the surgeon, such as taken with their family), included a nonhuman subject (ie, animated person), or those that were black-and-white.

Each included image was examined using the Fitzpatrick scale to assess the subject's skin color.[29] The Fitzpatrick scale is a numerical tool that has been used to categorize skin color in human subjects research.[30,31] The Fitzpatrick scale metric ranges from one to six, with each number signifying an example skin tone. As the scale increases, the skin tone darkens. For the purpose of our study, we modeled our protocol for assessing race with the Fitzpatrick scale after that used by Hassan et al.[25] Namely, types 5 and 6 were designated as "non-White" pigmentation, whereas types 1–4 were designated as "White" pigmentation. Fitzpatrick types 5–6 were chosen to signify non-White individuals, as the original tool was designed exclusively for White patients, only including skin types 1–4. The tool was later amended to include non-White skin tones with the addition of skin types 5 and 6.[32] The Fitzpatrick scale is not without its flaws; however, research has shown most Black individuals do not classify themselves within skin types 1–4.[33] All reviewers were educated on how to use the Fitzpatrick tool and a set of sample photographs were used to ensure the individual reviewers graded skin tones consistently with one another.

Further data collected included the surgeons' skin color, practice location, number of followers, and board certification. A sample of the top 5% of gender affirming "influencers" was analyzed as a subgroup to examine how the surgeons with the largest followings compared with the overall group. Any surgeon with a minimum of 50,000

Instagram followers was included in this category, correlating to 5% of the overall surgeon pool. Lastly, the year of each post was recorded so that trends over time could be analyzed. All pertinent outcome values were analyzed using chi-squared statistical tests or regression analyses. IBM's SPSS statistical software was used to manage all data compilation and statistics. All statistical analyses are based on a 95% confidence level with a ±4.96% margin of error.

RESULTS

Of the 250 gender affirming surgeons in the initial study population, 126 of the surgeons had Instagram accounts. Excluding duplicates, 51,698 individual posts were manually reviewed by research personnel for inclusion. The final study population included 56 surgeons consisting of 3101 individual posts (Fig. 1).

Of the 3101 posts included in the final data set, only 375 (12%) of these posts contained non-White subjects (Fitzpatrick type 5–6), as seen in Figure 2. This result of 12% was statistically significant ($P < 0.001$, 95% CI) and a sign of underrepresentation when compared with the expected value arising from the proportion of non-White TGGD individuals seen in the US population (16%). The geographic distribution of surgeons covered 17 different states with large portions of content coming from Miami, Florida; San Francisco, California; Austin, Texas; and Beverly Hills, California. Regional distribution of the evaluated photographs can be seen in Figure 3.
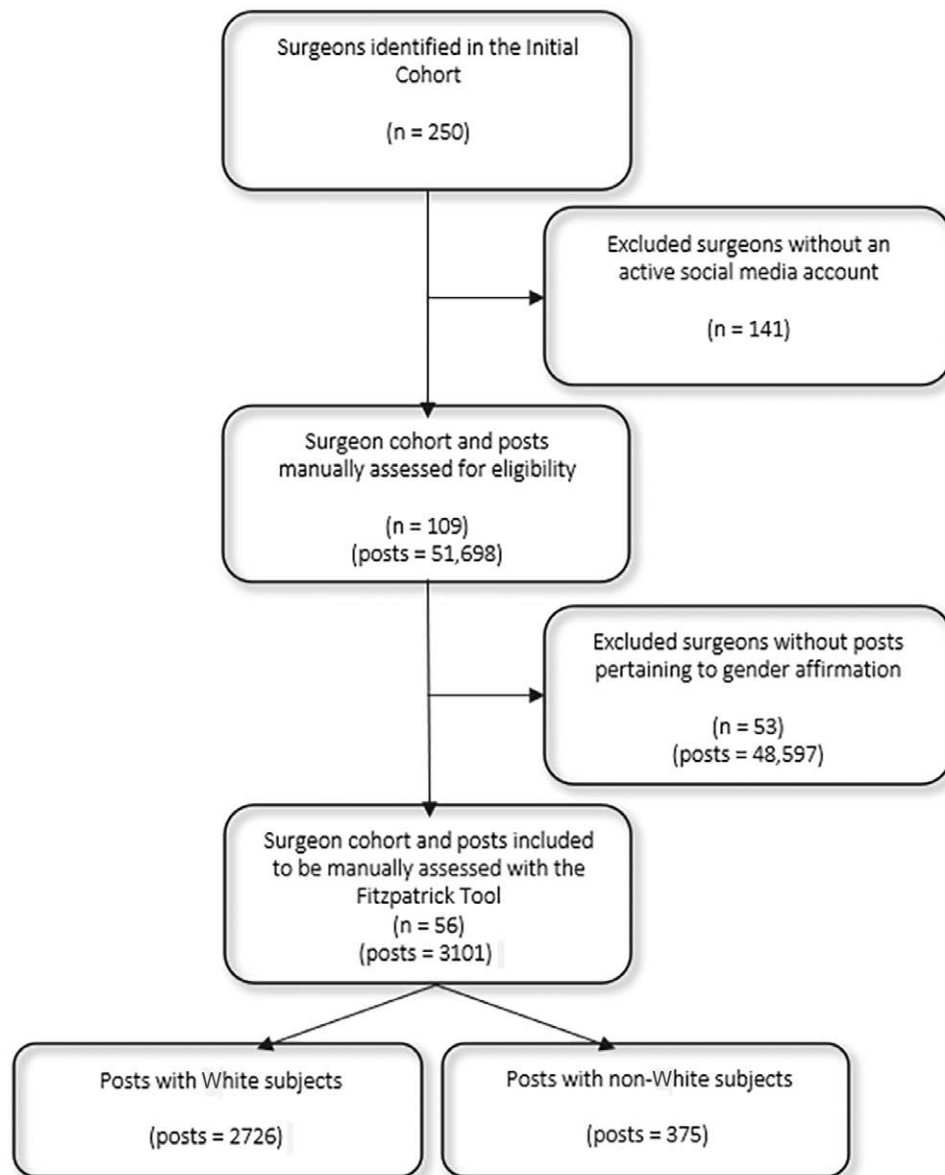

Fig. 1. Flowchart displaying inclusion/exclusion selection process for study cohort.
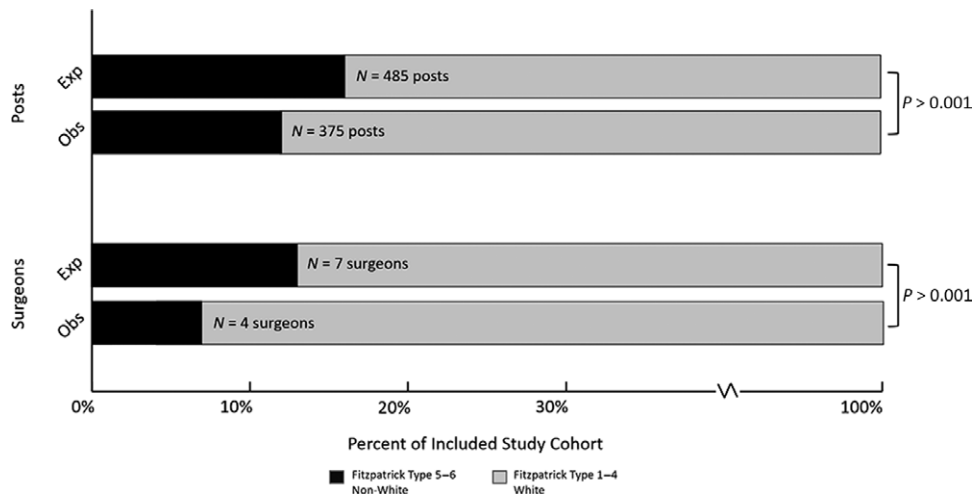
Fig. 2. Bar chart comparing the expected and observed portions of White vs non-White posts and surgeons. *P* values reflect the difference between the observed and expected values at a confidence interval of 95%. Expected values were calculated using national data on demographic trends seen in gender affirming surgery and its patients.[20–22]
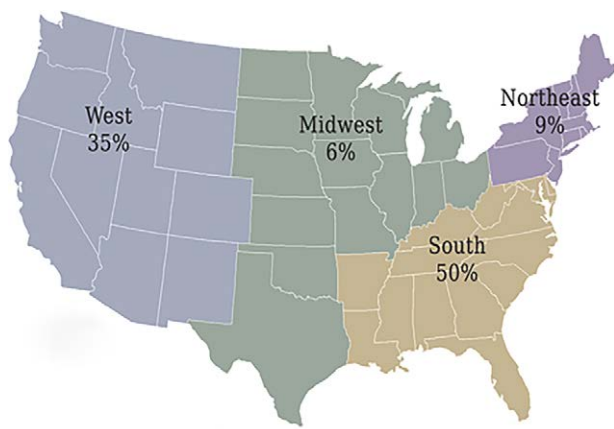

Fig. 3. Geographic distribution of posts in the United States.

Table 1. Distribution of Board Certification among Gender Affirming Surgeons

Board Certification	No.
American Board of Plastic Surgery	40
American Board of Otolaryngology	6
American Board of Cosmetic Surgery	4
American Board of Obstetrics and Gynecology	3
American Board of Facial Cosmetic Surgery	2
American Board of Urology	2
American Osteopathic Board of Surgery	1
American Board of Oral and Maxillofacial Surgery	1
American Board of Surgery	1
American Board of Facial Plastic and Reconstructive Surgery	1

Table 1 portrays the 10 different board certifications seen in the surgeon population. The American Board of Plastic Surgery accounted for the largest portion of surgeons (65.6%). Of the 3101 included posts, 7.1% came from the social media account of a non-White surgeon (n = 203). Although not statistically significant, compared with White surgeons, non-White surgeons were more likely to include non-White subjects in their photographs, 11% and 23%, respectively (*P* = 0.210, 95% CI). The top 5% of gender affirming surgery influencers, based on the number of followers, were grouped together and compared with the entire surgeon population. The top influencers were two times less likely to include posts with non-White subjects compared with the larger group, 5.9% and 12.1%, respectively.

Figure 4 displays the geographic distribution of non-White posts. All regions were individually consistent with the national value of 12.1%, aside from the Northeast region, where non-White subjects were found in 20.2% of its photographs. Figure 5 demonstrates two trends over time: volume of gender affirming surgery posts by surgeons on social media (*P* = 0.008, 95% CI) and the proportion of those posts that included non-White subjects (*P* = 0.069, 95% CI). There was no statistically significant difference between the average percentage increase in total posts versus the average percentage increase in non-White posts, 200% versus 217%, respectively (*P* = 0.8578, 95% CI). The relative increase in number of total posts was similar to that of non-White posts, showing a comparatively unchanged percentage of non-White posts.

DISCUSSION

The disparity seen between the portion of transgender individuals who identify as Black or African American (16%) and their subsequent lack of representation between those undergoing gender affirming surgery (2.6%–9.7%) compels clinicians to question from where this discrepancy stems.[20–22] Our study supports the notion that disproportionate representation in social media may play a role. Gender affirming surgeons are increasingly turning to social media to promote their practice and educate their current and potential future patients. From 2017 to 2021, data showed
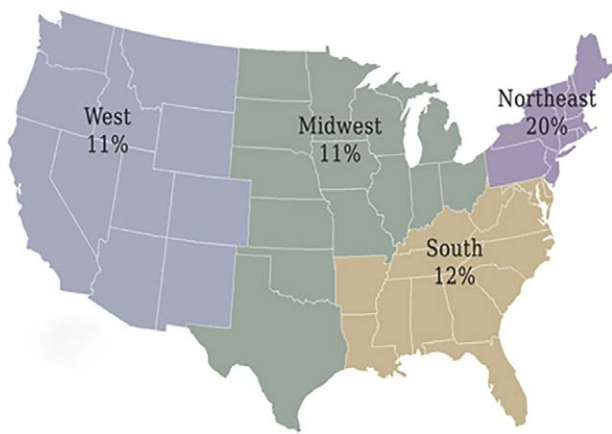
Fig. 4. Geographic representation showing the percentage of non-White posts seen regionally in the United States.

a steady increase in the sheer amount of content being pushed on social media by gender surgeons. Unfortunately, the analysis revealed no increase in the proportion of posts representing non-White human subjects ($P = 0.8578$, 95% CI), as seen in Figure 5.

It is significant to note that the portion of non-White individuals being portrayed on social media (12.1%) is greater than the portion of Black individuals utilizing gender affirming surgery (2.6%–9.7%). Although this may seem favorable, it is more than likely that individuals designated as non-White using the Fitzpatrick scale include many darker skinned individuals who do not identify as Black, which would inflate this percentage (12.1%).

It is not surprising that non-White surgeons were found to be far more likely to display non-White subjects in their posts: 23% compared with 11% in the White surgeon group. However, the difference was not statistically significant, likely due to the much smaller number of non-White surgeons. Of all 3101 posts, only 7.1% originated from non-White surgeons. This may further contribute to the lack of representation seen in the field of gender affirmation surgery, as patients tend to prefer clinical providers with whom they share racial or ethnic backgrounds.[34]

The geographic distribution of data demonstrates interesting regional trends, allowing one to better understand the origins of gender affirming content on social media. An estimated 50% of all included posts came from the Southern region of the United States. Unfortunately, the Southern epicenter of content was not paired with higher rates of non-White posts. The Northeast was the only region to maintain a proportion of non-White content that was substantially higher (20.2%) than the national average (12.1%). The Northeast region accounted for only 9% of all posts. Regionally, the Northeast is characterized to have the largest portion of academic medical centers with associated gender affirming surgical centers.[35] This may contribute to the smaller proportion of social media content originating from this region. It is speculated that surgeons from academic medical centers are less likely to use social media as they do not share the need to advertise for patients as private practice surgeons do. It may be beneficial for the associated gender affirming practices at academic medical centers in the Northeast to increase their presence on social media, which could
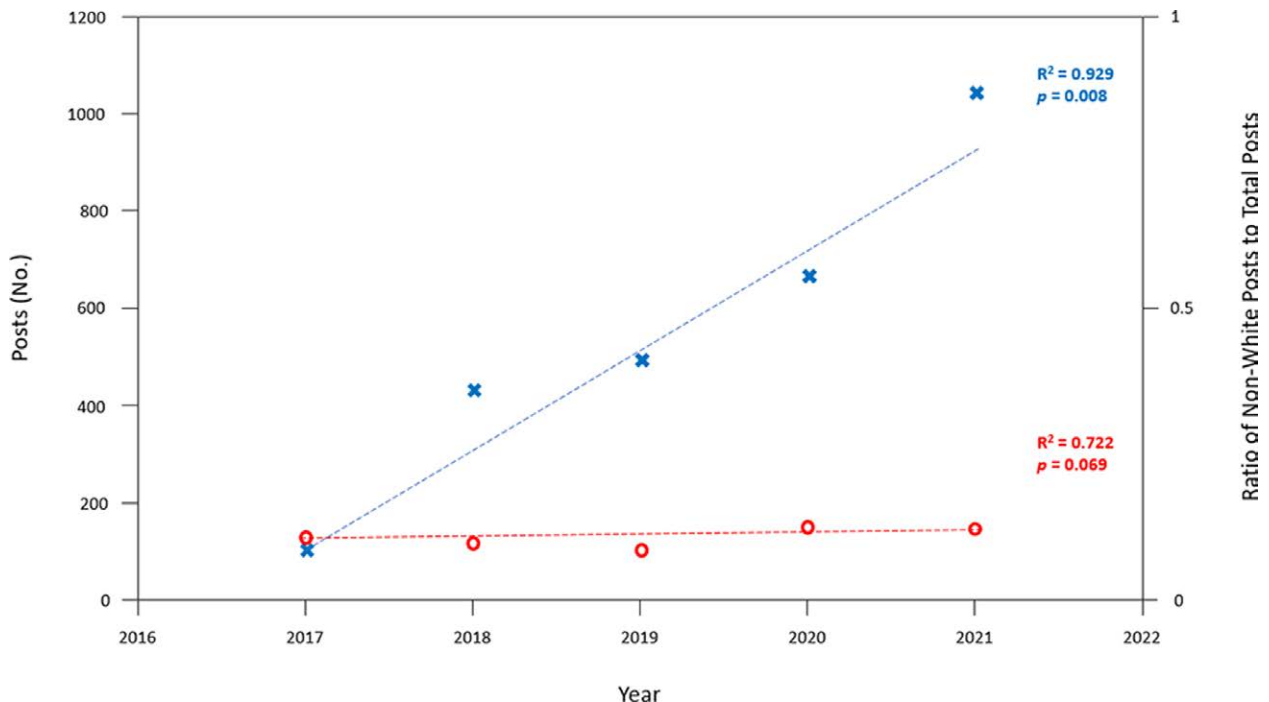

Fig. 5. Yearly change in the number of gender affirming posts with total human subjects (blue X's and blue dashed trendline), and proportion of total posts that included non-White human subjects (red circles and red dashed trendline).

have a positive impact on Black TGGD individuals accessing surgical intervention.

The most influential gender affirming surgeons on social media demonstrated dramatically different trends in their social media content compared with the rest of the group. The top 5% of gender affirming influencers were over two times less likely to post non-White subjects. This is an alarming reality when one considers that 58% of all followers are consolidated in the top 5% of influencers. A similar trend in racial representation among the top plastic surgery influencers has been shown.[25] The loudest voices are thus articulating an inaccurate representation of gender affirming surgery patients and perpetuating the lack of representation already seen in racial trends among utilization of gender affirming surgery.

There could be many reasons why non-White patients are featured less than White patients on social media. America is plagued with a history of medical establishments harming Black patients, as seen in the infamous Tuskegee Syphilis Study.[36] The historical context must be considered when discussing a population's mistrust towards medical interventions and institutions. Non-White patients may be hesitant to be photographed or operated on by gender affirming surgeons because of this historical precedent as well as ongoing discrimination and mistreatment of non-White people in our society. This reality only adds to our collective imperative to be mindful and inclusive in all of our medical practices, both physically (in-person clinical visits) and virtually (on social media).

LIMITATIONS

While the Fitzpatrick Scale was used to minimize reviewer subjectivity of skin color, variability in image lighting and potential editing would pose an additional challenge in the assessment of skin pigmentation. Specifically, our study analyzed the presence of skin tones (Fitzpatrick type 5–6) on social media. Skin tone or color is not a proxy for race and may incorrectly label a darker skin-toned individual as Black. Determining an individual's race based on their skin tone can have a detrimental impact on their well-being.[37] We acknowledge this impact and hope our research does not promote the clinical use of subjective tools like the Fitzpatrick scale when assessing skin sensitivity and race in medical practice. Additional error may be found in the review process, as posts were manually classified by human reviewers opposed to an automated computer program. It must be acknowledged that not all gender affirming surgeons use Instagram, and not all gender affirming surgeon Instagram accounts were reviewed but rather, a sample from the *TransHealthCare* database, which has been known to advertise for paying surgeons. Although more and more plastic surgeons have begun using social media as a means to connect with their patients, readers should not associate social media use with a surgeon's procedure volume or practice size.[9–11] TGGD individuals often obtain information on medical practitioners and surgical care from closed social media groups, which could not be accessed. Future studies may benefit from unbiased sampling, multiple social media platforms, and software-based post review.

CONCLUSIONS

Many elements of socioeconomic structure and systemic racism contribute to the disproportionately low number of non-White TGGD patients accessing gender affirming surgery. Although a direct causal relationship between social media representation and minority access to care cannot be claimed, our data do quantify the reduced representation of non-White skin tones portrayed on social media accounts of gender affirming surgeons. By highlighting this racial disparity, we hope to make a small step in the direction of equitable representation among healthcare providers using social media as means to connect with patients. It is encouraging to note that this disparity dissolves when looking at regions such as the Northeast, where representation on social media is far above the national average. This study illuminates the need for increased representation of non-White patients in surgeons' ad-campaigns on social media platforms, like Instagram. The increasing rate of TGGD individuals utilizing gender affirming surgery in the United States warrants further study to address the role social factors play in the under-representation of non-White TGGD patients accessing surgical treatment.

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DISCLOSURE

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REFERENCES

1. Bockting W, Robinson B, Benner A, et al. Patient satisfaction with transgender health services. *J Sex Marital Ther.* 2014;30:277–294.
2. Cobos DG, Jones J. Moving forward: transgender persons as change agents in health care access and human rights. *J Assoc Nurses AIDS Care.* 2009;20:341–347.
3. Sanchez NF, Sanchez JP, Danoff A. Health care utilization, barriers to care, and hormone usage among male-to-female transgender persons in New York City. *Am J Public Health.* 2009;99:713–719.
4. Safer JD, Coleman E, Feldman J, et al. Barriers to healthcare for transgender individuals. *Curr Opin Endocrinol Diabetes Obes.* 2016;23:168–171.
5. Puckett JA, Cleary P, Rossman K, et al. Barriers to gender-affirming care for transgender and gender nonconforming individuals. *Sex Res Social Policy.* 2018;15:48–59.

6. Bradford J, Reisner SL, Honnold JA, et al. Experiences of transgender-related discrimination and implications for health: results from the Virginia Transgender Health Initiative Study. *Am J Public Health*. 2013;103:1820–1829.

7. Blotner C, Rajunov M. Engaging transgender patients: using social media to inform medical practice and research in transgender health. *Transgend Health*. 2018;3:225–228.

8. Latack KR, Adidharma W, Moog D, et al. Are we preparing patients for gender-affirming surgery? A thematic social media analysis. *Plast Reconstr Surg*. 2020;146:519e–521e.

9. Dorfman RG, Vaca EE, Mahmood E, et al. Plastic surgery-related hashtag utilization on instagram: implications for education and marketing. *Aesthet Surg J*. 2018;38:332–338.

10. Azoury SC, Mazzaferro DM, Piwnica-Worms W, et al. An update on social media in academic plastic surgery training programs: the rising trend of likes, shares, and retweets. *Ann Plast Surg*. 2020;85:100–104.

11. Vardanian AJ, Kusnezov N, Im DD, et al. Social media use and impact on plastic surgery practice. *Plast Reconstr Surg*. 2013;131:1184–1193.

12. Haider AH, Scott VK, Rehman KA, et al. Racial disparities in surgical care and outcomes in the United States: a comprehensive review of patient, provider, and systemic factors. *J Am Coll Surg*. 2013;216:482–92.e12.

13. Groman R, Ginsburg J; American College of Physicians. American College of Physicians. Racial and ethnic disparities in health care: a position paper of the American College of Physicians. *Ann Intern Med*. 2004;141:226–232.

14. Komaromy M, Grumbach K, Drake M, et al. The role of Black and Hispanic physicians in providing health care for underserved populations. *N Engl J Med*. 1996;334:1305–1310.

15. Saha S, Komaromy M, Koepsell TD, et al. Patient-physician racial concordance and the perceived quality and use of health care. *Arch Intern Med*. 1999;159:997997.

16. Butler PD, Britt LD, Longaker MT. Ethnic diversity remains scarce in academic plastic and reconstructive surgery. *Plast Reconstr Surg*. 2009;123:1618–1627.

17. Parmeshwar N, Stuart ER, Reid CM, et al. Diversity in plastic surgery. *Plast Reconstr Surg*. 2019;143:940–949.

18. Silvestre J, Serletti JM, Chang B. Racial and ethnic diversity of U.S. plastic surgery trainees. *J Surg Educ*. 2017;74:117–123.

19. Tirrell AR, Bekeny JC, Baker SB, et al. Patient representation and diversity in plastic surgery social media. *Aesthet Surg J*. 2021;41:1094–1101.

20. Tran BNN, Epstein S, Singhal D, et al. Gender affirmation surgery. *Ann Plast Surg*. 2018;80:S229–S235.

21. Canner JK, Harfouch O, Kodadek LM, et al. Temporal trends in gender-affirming surgery among transgender patients in the United States. *JAMA Surg*. 2018;153:609609.

22. Flores A., Brown T., Herman J. *Race and Ethnicity of Adults Who Identify as Transgender in the United States.*; Los Angeles, CA: Williams Institute, UCLA School of Law; 2016.

23. American Society of Plastic Surgeons. 2012 Plastic Surgery Statistics Report. Arlington Heights, IL: ASPS; 2012: 22.

24. American Society of Plastic Surgeons. 2018 Plastic Surgery Statistics Report. Arlington Heights, IL: ASPS; 2018: 24.

25. Hassan AM, Chappell AG, Ketheeswaran S, et al. Representation of African American patients in social media for breast reconstruction. *Plast Reconstr Surg*. 2021;148:1214–1220.

26. U.S. Census Bureau. ACS Demographic and Housing Estimates. Washington, DC: U.S. Census Bureau; 2016.

27. James SE, Herman JL, Rankin S, et al. The report of the 2015 U.S. transgender survey. National Center for Transgender Equality; 2016:100.

28. Baxter NB, Howard JC, Chung KC. A systematic review of health disparities research in plastic surgery. *Plast Reconstr Surg*. 2021;147:529–537.

29. Sharma AN, Patel BC. *Laser Fitzpatrick Skin Type Recommendations.* Treasure Island, FL: StatPearls Publishing; 2022.

30. Gwan A, Tanner-Sanders LN, Nair N, et al. Equity in visual representation of vulvar conditions in major gynecology textbooks. *J Natl Med Assoc*. 2022;114:314–323.

31. Ravnbak MH. Objective determination of Fitzpatrick skin type. *Dan Med Bull*. 2010;57:B4153.

32. Goldsmith L, Katz S, Gilchrest B, et al. Fitzpatrick's Dermatology in General Medicine. *8th ed.* New York: McGraw Hill; 2012.

33. Pichon LC, Landrine H, Corral I, et al. Measuring skin cancer risk in African Americans: is the Fitzpatrick skin type classification scale culturally sensitive? Ethn Dis. 2010;20:174–179. PMID: 20503899

34. Takeshita J, Wang S, Loren AW, et al. Association of racial/ethnic and gender concordance between patients and physicians with patient experience ratings. *JAMA Netw Open*. 2020;3:e2024583e2024583.

35. Merrick E, Weissman JP, Ascha M, et al. National trends in gender-affirming surgical procedures: a Google Trends analysis. *Cureus*. 2022;14: e25906.

36. Gamble VN. Under the shadow of Tuskegee: African Americans and health care. *Am J Public Health*. 1997;87:1773–1778.

37. Gonlin V. Colorful reflections: skin tone, reflected race, and perceived discrimination among Blacks, Latinxs, and Whites. *Race Soc Probl*. 2020;12:246–264.