

Research Letter

Skin of Color Dermatology Representation in American College of Mohs Surgery Educational Cases on Instagram: Content Analysis

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Social media is a prominent avenue for health care information delivery. The American College of Mohs Surgery (ACMS) in particular is an established professional organization for dermatologic surgeons, and its most popular social media platform is @mohs.college on Instagram (2000+ followers). As a respected resource for Mohs surgery, the ACMS and @mohs.college provides education for patients, students, and dermatologic surgeons.

While social media can be highly educational, skin cancers in skin of color (SoC) patients are often underdiagnosed or diagnosed at later stages with worse outcomes [1], likely due in part to inadequate training and exposure to the visual appearance of conditions on different skin tones. Thus, we assessed SoC representation in the popular weekly “Flap Friday” content on the @mohs.college page, featuring pre- and postprocedure Mohs cases (Figure 1). Two independent raters categorized and tabulated patients’ constitutive skin tones (light, fair, medium, or dark) following previously published methods [2], with discrepancies resolved by independent tiebreakers and consensus meetings. While Fitzpatrick phototypes are commonly used, the scale is intended to define sun sensitivity and reactivity rather than pigmentary phenotypic appearance. White skin

phenotypes may be predictive of Fitzpatrick classification, while nonwhite phenotypes may not [2]. Therefore, this 4-tone scale was used to categorize photos, especially since the patient’s sun reactivity may not be known.

Out of 114 weeks (July 2020 to September 2022), 93 “Flap Friday” cases were analyzed. Overall, 83.9% (78/93) were considered to be of light skin tones, and 16.1% (15/93) were considered fair. Interrater agreement was 77.4%, and reliability was substantial with a Cohen κ of 0.643. None of the cases depicted medium or dark skin tones, although the proportions of fair (darker) skin tones were observed to increase every year from 14.3% (3/21) in 2020 to 25.9% (7/27) in 2022 (Figure 2).

These results corroborate current trends [3] where only up to 15% to 18% of resources included SoC patients. A recent analysis of 2451 cases in *JAAD Case Reports* revealed that for cases published in 2015, pictured skin tones were perceived as 73% light, 15% medium, and 12% dark; promisingly, percentages of SoC increased slightly in later years [4]. Furthermore, from 1995 to 2010, it was seen that African American patients received Mohs surgery in 44.2% of skin cancer visits, compared to 9.6% for Caucasians [5]. Given this

high Mohs utilization and SoC skin cancer underdiagnosis, academic resources, including social media from prominent national organizations such as the ACMS, should be encouraged to increase SoC exposure and alleviate SoC representation gaps to improve care for the United States’s increasingly diverse population. Parity in social media representation may boost

patient outcomes, by spreading awareness of the appearance of skin conditions on darker skin tones and encouraging patients to promptly seek care. The current state of SoC representation reflects health disparities, and we hope to encourage diversity not only in the literature but across social media platforms.

Figure 1. Example of a highly viewed American College of Mohs Surgery “Flap Friday” case on Instagram (@mohs.college), posted on April 29, 2022, showcasing Mohs patient photos and the clinical approach (accessed September 20, 2022).

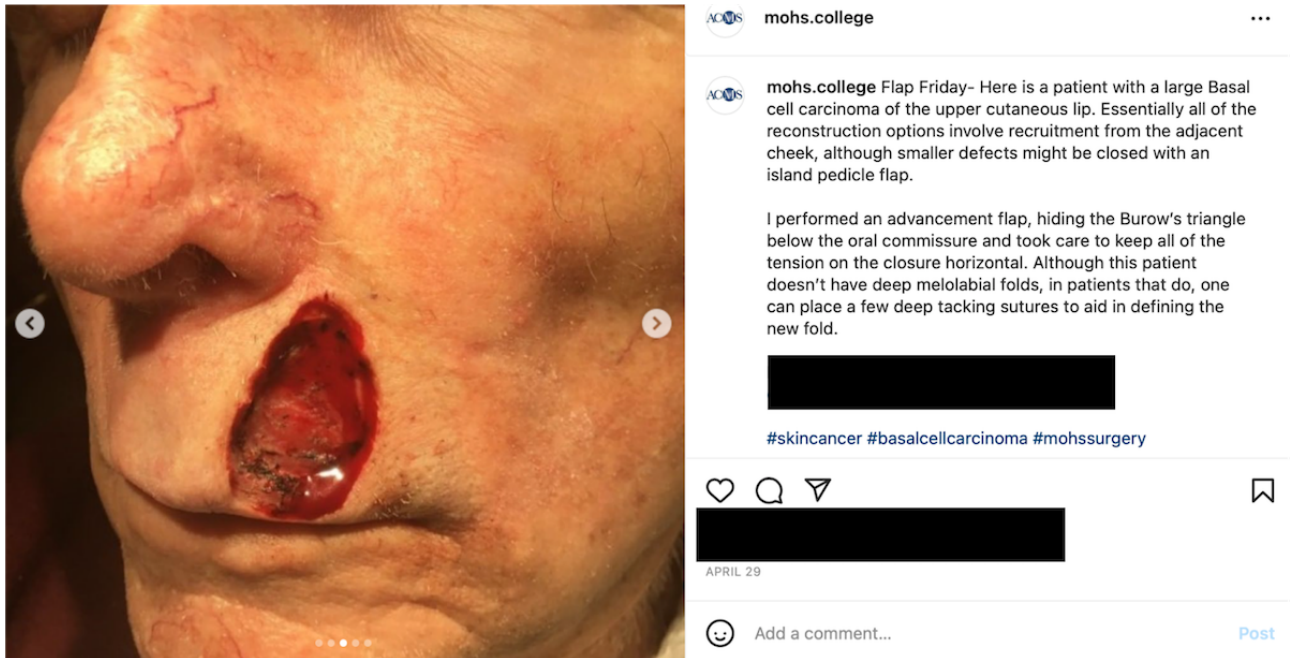
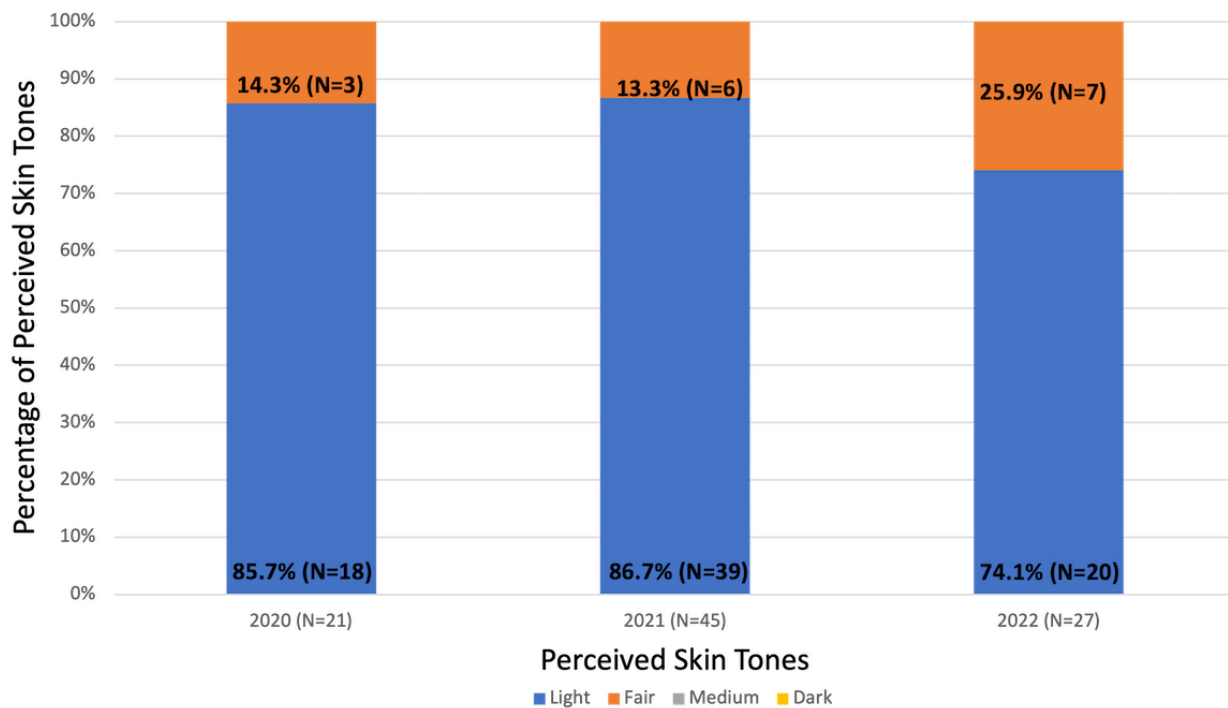


Figure 2. Percentages of perceived light, fair, medium, and dark skin tones depicted by weekly American College of Mohs Surgery “Flap Friday” cases on Instagram (@mohs.college) from 2020 to 2022.



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Conflicts of Interest

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References

1. Goldenberg A, Vujic I, Sanlorenzo M, Ortiz-Urda S. Melanoma risk perception and prevention behavior among African-Americans: the minority melanoma paradox. *Clin Cosmet Investig Dermatol* 2015;8:423-429 [FREE Full text] [doi: [10.2147/CCID.S87645](https://doi.org/10.2147/CCID.S87645)] [Medline: [26346576](https://pubmed.ncbi.nlm.nih.gov/26346576/)]
2. He SY, McCulloch CE, Boscardin WJ, Chren MM, Linos E, Arron ST. Self-reported pigmentary phenotypes and race are significant but incomplete predictors of Fitzpatrick skin phototype in an ethnically diverse population. *J Am Acad Dermatol* 2014 Oct;71(4):731-737 [FREE Full text] [doi: [10.1016/j.jaad.2014.05.023](https://doi.org/10.1016/j.jaad.2014.05.023)] [Medline: [24928709](https://pubmed.ncbi.nlm.nih.gov/24928709/)]
3. Adekun A, Onyekaba G, Lipoff JB. Skin color in dermatology textbooks: an updated evaluation and analysis. *J Am Acad Dermatol* 2021 Jan;84(1):194-196. [doi: [10.1016/j.jaad.2020.04.084](https://doi.org/10.1016/j.jaad.2020.04.084)] [Medline: [32335181](https://pubmed.ncbi.nlm.nih.gov/32335181/)]
4. Marroquin N, Carboni A, Zueger M, Szeto M, Kirk J, Wu J, et al. Skin of color representation trends in Journal of the American Academy of Dermatology case reports 2015-2021: content analysis. *JMIR Preprints* 2022 Jun 07 [FREE Full text] [doi: [10.2196/preprints.44103](https://doi.org/10.2196/preprints.44103)]
5. Reeder VJ, Gustafson CJ, Mireku K, Davis SA, Feldman SR, Pearce DJ. Trends in Mohs surgery from 1995 to 2010: an analysis of nationally representative data. *Dermatol Surg* 2015 Mar;41(3):397-403. [doi: [10.1097/DSS.0000000000000285](https://doi.org/10.1097/DSS.0000000000000285)] [Medline: [25705954](https://pubmed.ncbi.nlm.nih.gov/25705954/)]

Abbreviations

ACMS: American College of Mohs Surgery

SoC: skin of color

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