

Why Is There a Lack of Representation of Skin of Color in the COVID-19 Literature?

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Throughout the COVID-19 pandemic, there has been a striking paucity of representations of patients with skin of color (SOC) in the dermatology literature. Was COVID-19 underdiagnosed in this patient population due to a lack of patient-centered resources and inadequate dermatology training; reduced access to care, resulting from social determinants of health and reduced skin-color concordance; or the absence of population-based prevalence studies?

Tan et al¹ reviewed 51 articles describing skin findings secondary to COVID-19. Patients were stratified by country of origin, which yielded an increased prevalence of cutaneous manifestations among Americans and Europeans compared to Asians, but patients were not stratified by race.¹ However, in one case series of 318 predominantly American patients, 89% were White and 0.7% were Black.² This systematic review by Tan et al¹ suggested that skin manifestations of COVID-19 were present in patients with SOC but less frequently than in White patients. However, case series are not a strong proxy for population-level prevalence.

More broadly, patients with SOC are underrepresented in Google image search results, as the medical resource websites (eg, DermNet [<https://dermnetnz.org>], MedicalNewsToday [www.medicalnewstoday.com], and Healthline [www.healthline.com]) are lacking these images.³ As a result, it is difficult for patients with SOC to recognize diseases presenting in darker skin types. This same tendency may exist for COVID-19 skin

manifestations. A systematic review found that articles describing cutaneous manifestations of COVID-19 almost exclusively presented images of lighter skin and completely omitted darker skin.⁴ If images of patients with SOC are absent from online resources, it is increasingly unlikely for these patients to recognize if their skin lesions are associated with COVID-19, which may result in a decrease in the number of patients with SOC presenting with skin lesions secondary to COVID-19, thereby influencing the representation of patients with SOC in case studies.

The lack of representation of SOC in online resources mirrors the paucity of images in dermatology textbooks. According to a search of 7170 images in major dermatology textbooks, most images depicted light or white skin (80.6%), followed by medium or brown skin in 15.5% of images and dark or black skin in only 3.9%.⁵ Physicians rely on online and print resources for making diagnoses; inadequate resources highlight a component of a larger issue: inadequate training of dermatologists in SOC. In a survey of American dermatologists and dermatology residents (N=262), 47% thought that their medical education had not adequately trained them on skin conditions in Black patients.⁶

A lack of adequate training for dermatologists may decrease the rate of correct diagnosis of skin lesions secondary to COVID-19 in patients with SOC. A lack of trust in the health care system and social determinants of health may hinder patients with SOC from seeking

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medical help. Dermatology is the second least diverse of medical specialties; only 3% of dermatologists are Black.⁷ This is impactful: First, because minority physicians are increasingly likely to provide care for patients of the same race or background, and second, because race-concordant physician visits are associated with greater patient-reported positive affect.⁷ A lack of availability of race-concordant physicians or physicians with perceived cultural competence may deter patients with SOC from seeking help, which may be further prevalent in dermatologic practice.

Barriers at all levels of social determinants of health hinder access to health care. Patients with SOC experience greater housing insecurity, increased reliance on public transportation, more issues with health literacy, and limited English-language fluency.⁸ Combined, these factors equate to decreased access to health care resources and subsequently a lack of inclusion in case studies.

COVID-19 infection disproportionately affects patients with SOC,⁸ but there is a clear lack of representation of SOC in the COVID-19 dermatology literature. It is imperative to investigate factors that may contribute to this inequity. Recognizing skin manifestations can play a role in diagnosing COVID-19; increased awareness of its presentation in darker skin types may help bridge existing racial inequities. It is vital that physicians receive adequate resources and training to be able to recognize

cutaneous manifestations of COVID-19 in all skin types. Finally, it is important to recognize that the lack of representation of SOC in the COVID-19 literature represents a larger trend that exists in dermatologic research that warrants further investigation and advocacy for inclusivity.

REFERENCES

1. Tan SW, Tam YC, Oh CC. Skin manifestations of COVID-19: a worldwide review. *JAAD Int.* 2021;2:119-133. doi:10.1016/j.jdin.2020.12.003
2. Freeman EE, McMahon DE, Lipoff JB, et al; American Academy of Dermatology Ad Hoc Task Force on COVID-19. Pernio-like skin lesions associated with COVID-19: a case series of 318 patients from 8 countries. *J Am Acad Dermatol.* 2020;83:486-492. doi:10.1016/j.jaad.2020.05.109
3. Fathy R, Lipoff JB. Lack of skin of color in Google image searches may reflect under-representation in all educational resources. *J Am Acad Dermatol.* 2022;86:E113-E114. doi:10.1016/j.jaad.2021.04.097
4. Lester JC, Jia JL, Zhang L, et al. Absence of images of skin of colour in publications of COVID-19 skin manifestations. *Br J Dermatol.* 2020;183:593-595. doi:10.1111/bjd.19258
5. Kamath P, Sundaram N, Morillo-Hernandez C, et al. Visual racism in internet searches and dermatology textbooks. *J Am Acad Dermatol.* 2021;85:1348-1349. doi:10.1016/j.jaad.2020.10.072
6. Buster KJ, Stevens EI, Elmets CA. Dermatologic health disparities. *Dermatol Clin.* 2012;30:53-59, viii. doi:10.1016/j.det.2011.08.002
7. Pandya AG, Alexis AF, Berger TG, et al. Increasing racial and ethnic diversity in dermatology: a call to action. *J Am Acad Dermatol.* 2016;74:584-587. doi:10.1016/j.jaad.2015.10.044
8. Tai DBG, Shah A, Doubeni CA, et al. The disproportionate impact of COVID-19 on racial and ethnic minorities in the United States. *Clin Infect Dis.* 2021;72:703-706. doi:10.1093/cid/ciaa815