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ORIGINAL PAPER

Racial disparities in dermatology

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Abstract

Significant racial/ethnic disparities in dermatologic care and their subsequent impact on dermatologic conditions were recently reported. Contributing factors include socioeconomic factors, gaps in educational exposure, and underrepresentation of minority groups in the dermatologic workforce. In 2021, the American Academy of Dermatology (AAD) announced its three-year plan to expand diversity, equity, and inclusion in dermatology. One way to reduce disparities in dermatology is for every dermatologist, regardless of race or ethnicity, to receive adequate education in diseases, treatments, health equity, and tailored approaches to delivering dermatologic care with cultural humility. In addition, a diverse dermatologic workforce—especially at the level of residency program educators and organizational leaders—will contribute to improved cross-cultural understanding, more inclusive research efforts, and improved treatment approaches for conditions that are more prevalent or nuanced in certain racial/ethnic populations. Finally, the dermatology and broader healthcare community needs to acknowledge and educate ourselves on the health impacts of racism.

Keywords Race · Disparities · Dermatology · Atopic dermatitis · Psoriasis · Mycosis fungoides · Skin cancer · Clinical trials · Hidradenitis suppurativa · Machine learning · Structural racism

Abbreviations

AD	Atopic dermatitis
US	United States
RCT	Randomized controlled trial
SCORAD	Scoring Atopic Dermatitis
AAD	American Academy of Dermatology
SOC	Skin of color
COVID-19	Coronavirus disease 2019
SOCC	Skin of color clinic
AAMC	Association of American Medical Colleges
URM	Underrepresented minorities
URiM	Underrepresented in medicine
ERAS	Electronic Residency Application Service
AOA	Alpha Omega Alpha
USMLE	United States Medical Licensing Examination
FST	Fitzpatrick skin type
PDs	Program directors
CRs	Chief residents
ML	Machine learning
NMSC	Nonmelanoma skin cancer
wRVUs	Work relative value units
HRQOL	Health-related quality of life
AA	African American
DLQI	Dermatology life quality index
ECP	Extracorporeal photopheresis
HS	Hidradenitis suppurativa
SR	Systematic review
SCC	Squamous cell carcinoma
MEPS	Medical Expenditure Panel Survey
aOR	Adjusted odds ratio

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Introduction

In dermatology, skin of color (SOC) identifies "individuals of particular racial and ethnic groups who share similar characteristics and disorders, as well reaction patterns to those disorders" including increased constitutive pigmentation, propensity toward reactive pigment alteration, and higher skin phototype [1]. While there is a wide range of skin phototypes across different racial subgroups and vice versa, individuals typically identified as SOC tend to fall into the US Census categories American Indian or Alaska Native, Asian, Black, and Native Hawaiian or other Pacific Islander [1]. This population is historically underrepresented in dermatologic education, research, and workforce; in addition, many of the dermatologic disorders that disproportionately affect SOC populations are hampered by limited treatment options [2–7]. By 2044, more than half of all Americans will belong to a self-identified racial/ethnic group that is characterized by having SOC [8]. However, 2020 was a year in which pervasive social injustice and racial inequalities in the US were brought to light, further magnified by the disproportionate impact of Coronavirus Disease 2019 (COVID-19) on minority communities of color. [9] The field of dermatology is no exception. In 2021, the American Academy of Dermatology (AAD) announced its three-year plan to expand diversity, equity, and inclusion in dermatology. The major category initiatives included promoting diversity and inclusion within the AAD, increasing the number of underrepresented minority dermatologists, ensuring that dermatologic education and research encompasses health disparities and SOC, and expanding the Academy's Advocacy Priorities to prioritize addressing health inequities [10]. This review provides a summary of important gaps in dermatology related to workforce diversity, SOC education, racial/ethnic disparities in specific dermatologic disorders, underrepresentation of minoritized populations in clinical trials, and the role of structural racism on health outcomes among racial and ethnic minority groups. Ongoing and proposed strategies to reduce the aforementioned gaps are also discussed.

Diversity in the dermatology workforce

Underrepresented in medicine (URiM) physicians are more likely to care for underserved racial/ethnic minority populations [11, 12]. However, previous studies demonstrated that patient-dermatologist racial concordance was preferred but not required for a positive experience. Instead, satisfaction was related to the dermatologist's knowledge about Black skin and hair and a culturally sensitive interaction style [13].

Moreover, increasing the number of dermatologists with SOC is not the sole answer. The answer to increasing diversity in dermatology, healthcare equity, and improving patient satisfaction with dermatologists rests on the shoulders of all dermatologists. While race-concordant visits may contribute to greater patient trust, a diverse dermatologic workforce—especially at the level of residency program educators and organizational leaders—will likely translate into improved cross-cultural understanding overall such that culturally competent patient care interactions can be expected independent of the racial/ethnic background of the dermatologist [14–16].

Despite the need, analysis of data from 1973 to 2015 by the Association of American Medical Colleges showed that even though there was an increase, the proportion of URiM full-time US medical school faculty remained < 10%. [17] Lower-ranked faculty had high proportions of URiM and females [17]. Analyzing data from 1970 to 2018 showed that the number of full-time US dermatology female faculty increased from 18 (10.8%) to 749 (51.2%), but URiM faculty only grew from 8 (4.8%) to 109 (7.4%) [18]. Across all US specialties, White individuals represented 79.7% of department chairs, while URiM faculty only represented 8.6% of department chairs, with Black faculty representing 3.6%, Native American 0.1%, and Hispanic 4.9% of department chairs in 2018 [18].

One approach to helping increase the number of URiM faculty to improve cross-cultural understanding and thereby ensure the delivery of culturally sensitive care is to ensure that applicants and matriculants at medical schools nationwide are representative of the general population. Data from the 2010 US Census Bureau and 2011 Association of American Medical Colleges demonstrated that the racial demographics of US medical school applicants and matriculants was significantly different from that of the general population, with underrepresentation of African American (AA)/Black and American Indian/Alaskan Indian individuals [19]. In 2015, out of 46 possible residencies listed in Electronic Residency Application Service (ERAS), dermatology ranked 35th for attracting a diverse applicant pool (i.e., the percentage of total minority applicants) [20]. Of 1,259 applicants to dermatology in 2020, nine (0.7%) were American Indian/Alaskan Native, 94 (7.5%) were African American/Black, 106 (8.4%) were Hispanic, Latino, or Spanish origin, and three were Hawaiian or Other Pacific Islander (0.2%) compared to 616 (48.9%) White applicants [21].

Alpha Omega Alpha (AOA) medical honor society status is an important criterion in dermatology residency applications with 251 applicants in the 2020 Dermatology ERAS cycle being members [21]. However, AOA membership for White students is nearly 6 times greater than for Black students, and nearly 2 times greater than for Asian students [22]. In four of six required clerkships, grading disparities

were found to favor White students over either URiM or non-URiM minority students [23]. Whereas the size and magnitude of differences in clerkship director rating were small, URiM students received approximately half as many honor grades as non-URiM students [24].

Racial grading disparities in medical school clerkships is only one of several ways in which minority students are disadvantaged from entering into dermatology, thereby precluding diversification of the dermatology workforce. When asked about barriers to applying for dermatology residency, minority students reported lack of diversity, perceived negative perceptions of minority students by residencies, socioeconomic factors, and lack of mentors as major barriers [25].

Skin of color education in dermatology

COVID-19 disproportionately affects non-White race/ethnicities. However, a systematic review (SR) showed that of 130 clinical photos of COVID-19-related skin lesions, 92% (120 of 130) of them showed Fitzpatrick skin types (FST) I-III, while only 6% of them (7 of 130) showed patients with type IV skin. There were no images representing FST V or VI skin [26]. As COVID-19 was spreading, the AAD and International League of Dermatological Societies established an international registry to catalog skin manifestation of COVID-19. Of the 682 patients in the registry, only 13 (1.9%) were Black/African American, and 34 (5.0%) were Hispanic/Latino [27]. These findings could represent either a lower likelihood of dermatologists taking photos of SOC and consenting them for use in the registry, or it could also be because the manifestations were seen but not diagnosed as frequently because of lack of training to recognize skin disease in those with SOC.

Dermatological disease presents differently in different skin tones, and current dermatology training may not equip graduates to make diagnoses with ease. A previous study found that 47% of dermatologists felt that their training was inadequate to diagnose skin disease in SOC patients [28]. A survey of program directors (PDs) and chief residents (CRs) reported that only 25.4% of the CRs and 19.5% of the PDs reported having lectures on SOC from an acknowledged expert [29]. Only 14.3% of CRs and 14.6% of PDs recognized an expert at their institutions who conducted a SOC clinic. Finally, only 30.2% of CRs and 12.2% of PDs reported a specific rotation in which residents gained experience in treating SOC [29].

Analysis of educational opportunities on SOC at AAD annual meetings from 1996 to 2005 showed that the percentage of teaching events focused on SOC was only 2%. Only eight out of 370 events available each year were devoted to ethnic skin [30]. These events were forums and focus sessions; none were postgraduate courses, discussion groups, or poster discussion groups [30].

Analysis of 4,146 textbook images from a sample of four general preclinical anatomy textbooks (i.e., Atlas of Human Anatomy, Bates' Guide to Physical Examination and History Taking, Clinically Oriented Anatomy, and Gray's Anatomy for Students) (2013–2015 editions) assigned at top medical schools showed that only 4.5% of images represented darker skin tones [31]. In 2021, updated analysis of the same textbooks found that only 1 textbook had a greater than 1% increase in representation of dermatologic diseases in darker skin tones compared to the original analysis. Dermatologic diseases with a racial predisposition such as erythema dyschromicum perstans were not commonly represented. In contrast, infectious diseases such as syphilis remained well-represented in all skin types, suggesting a possible bias when darker skin types are chosen to represent particular disorders [32].

Inadequate exposure and training in SOC in dermatology residency may affect quality of care delivered to SOC patients through incorrect or delayed diagnoses. Medical students at Tulane University School of Medicine and the University of Oklahoma College of Medicine were shown clinical images of various dermatological conditions in all skin types and asked to identify them. The conditions with the greatest disparity in visual diagnosis based on Fitzpatrick skin phototypes IV-VI vs. I-III were squamous cell carcinoma, urticaria, and atopic dermatitis (AD). Nearly, 34% of students misdiagnosed squamous cell carcinoma in SOC as melanoma, which may be explained by the students' reliance on dark pigment alone as the feature of melanoma [33].

Previous studies demonstrated that non-Hispanic Black people are often diagnosed with melanoma at later stages. Moreover, the 5-year survival rate is 66% for non-Hispanic Black patients, compared with 90% for non-Hispanic Whites [34]. Risk of surgical delay for melanoma (surgical excision performed > 6 weeks after diagnosis) was found to be increased in non-White patients [35]. Nonmelanoma skin cancer (NMSC) in Black individuals is uncommon with an incidence of 3.4 per 100,000. Nevertheless, Black patients present with later stage or more aggressive SCC [36].

Machine learning (ML), a form of artificial intelligence using computer algorithms, is being used to create programs capable of distinguishing between benign and malignant lesions [37]. A study that tested ML software in dermatology found that deep-learning convolutional neural networks detected potentially cancerous skin lesions better than most dermatologists included in the study ($n = 58$). [38] However, the images used in the study came from the International Skin Imaging Collaboration: Melanoma Project that heavily collects data from fair-skinned populations in the USA, Europe, and Australia. [39] Therefore, as it stands, ML may

only benefit the detection of cancer in lighter skinned individuals. [39]

Diversity of patient populations

Financial incentives may be a factor in providing care to specific patient populations and may be a contributing factor in perpetuating healthcare inequalities. Among 183,054 Medical Expenditure Panel Survey (MEPS) respondents, Hispanic and Black patients were less likely to receive outpatient dermatological care than non-Hispanic White patients. Per capita expenditure of outpatient dermatologist visits for non-Hispanic White patients ($209.50) was approximately 3 times that of Hispanic ($73.09) and Black ($62.70) patients. The cost per visit was also greater for non-Hispanic White patients ($244.88) than for Hispanic ($191.14) and Black ($170.94) patients [40].

A cross-sectional study of 66,463 dermatology encounters across 30,036 patients showed that in the general dermatologic practice, the mean (standard deviation) work relative value units (wRVUs) per encounter was 1.40 (0.71). Compared to general dermatology visits with White patients, visits with Black patients generated 0.27 fewer wRVUs per encounter, visits with Asian patients generated 0.22 fewer wRVUs per encounter, and visits with patients of other races generated 0.19 fewer wRVUs per encounter. In the general dermatologic practice excluding Mohs surgeons, the observed differences in race were due to the destruction of premalignant lesions and biopsies in White patients. Consequently, it was suggested that compensation based on wRVUs may incentivize dermatologists to care for patients more likely to develop skin cancers and perpetuate disparities in dermatologic care [41].

Disparities in skin conditions

Racial disparities exist in health-related quality of life within dermatologic diseases. One study enrolled 134 patients of which 28% ($n=35$) were African American (AA); 67% ($n=84$) were White; and 5% were classified as other. Median Dermatology Life Quality Index and Skindex-29 scores among AAs were significantly higher compared to Whites. Further, a larger proportion of AAs compared to Whites had stage 3 and 4 disease (more severe) by the Dermatology Index of Disease Severity [42]. Black patients with AD were less likely to receive desonide, tacrolimus, pimecrolimus, crisaborole, and dupilumab. The exception was hydrocortisone [43].

The National Ambulatory Medical Care Survey from 2005–2014 found that Black patients were less likely than White patients to visit a dermatologist for acne care [44]. Black patients with acne had significantly lower odds of receiving isotretinoin, adapalene, tazarotene, oral antibiotics, and spironolactone in comparison to White patients [43, 45]. The exceptions were tretinoin and benzoyl peroxide. Hispanic patients with acne had statistically lower odds of receiving tretinoin compared to non-Hispanics [43].

Even though African Americans had less psoriasis compared to Whites, they had more severe skin involvement with greater psychological impact and impaired quality of life (QOL) [46]. Previous studies also found that amongst Medicare recipients, Black patients had a significantly lower likelihood of receiving biologic medications [47]. A later study found that the disparity in the use of biologics amongst Black patients may be due to general unfamiliarity with biologic medications within this group of individuals, regardless of income or education level. In addition, they found that Black patients have increased fear of side effects and a stronger preference to avoid needles, which may contribute to racial disparities in psoriasis care [48]. Further education about use of biologics for psoriasis treatment is needed in Black patients.

Mycosis fungoides (MF) also has a higher incidence and poorer prognosis in AA patients. In Black patients, MF often presents as polymorphic pigmentation and secondary lichenification that is frequently misdiagnosed as AD, tinea versicolor, and/or vitiligo [49]. Moreover, Black patients were three times as likely to have Stage 2 disease at diagnosis compared to Whites. In females, Black patients were younger at diagnosis and at death compared to Whites. In males, Blacks had 4 times the odds of late-stage disease and presented with 19% body surface area involvement on average compared to White patients. In another study examining 65 patients with stage III or IV disease, only seven of 20 AA patients (35%) compared with 30 of 45 (66%) White patients were treated with extracorporeal photopheresis (ECP). Further, ECP was discussed as an option for only 45% of AAs compared to 82% of Whites. When discussed as an option, AAs and Whites had identical rates of ECP use [50].

Earlier recognition of MF in SOC and closer follow-up of Black patients, especially females, may help mitigate disparities in outcomes [51]. AA race was identified as a predictor of poor overall survival in MF patients, even after controlling for disease characteristics, socioeconomic factors, and types of treatment, warranting further investigation into the underlying biology of MF and prescribed treatment modalities [52].

The true prevalence of hidradenitis suppurativa (HS) in the general US population may likely be higher due to limitations in diagnosis, underdiagnosis, misdiagnosis, and patient reluctance to seek treatment [53]. This may be especially true in SOC populations due to limited access to medical care, implicit biases, anatomical differences, genetics,

and increased prevalence of lower socioeconomic status among these groups [54, 55].

HS is associated with increased odds of depression, antidepressant use, anxiety, anxiolytic use, and suicidality. [56]. This has serious implications for AAs and Latinos in comparison with Whites because they are already at risk for a wide range of psychosocial stressors [57]. A study that oversampled AAs and Hispanics/Latinos in relation to Whites found that major depression was most prevalent amongst Latinos (11%) followed by AAs (8%), and then Whites (8%). The differences in depression rates were thought to be due to functional limitations, lack of health insurance, and lifestyle factors such as smoking and exercise which varied among the racial groups [58]. Given these findings, AA and Latino patients with HS may be at higher risk for developing depression and more severe forms of depression in comparison with the overall HS population [59].

A recent study found AA patients accounted for almost half (47%) of US hospitalizations for HS. The study suggested a significant link between the geographic distribution of HS hospitalizations, racial distribution of AAs, and prevalence of adult obesity across the USA [60]. Further, a recent study demonstrated that urban zip codes with higher percentages of AAs tended to have fewer dermatologists, while urban zip codes with lower percentages of AAs tended to have more dermatologists. In the areas with higher representation of AAs, dermatologists were responsible for more people per provider than recommended (> 25,000 people/dermatologist) [61]. Hence, limited access to care along with a higher number of comorbidities may contribute to more severe disease necessitating higher rates of hospitalization amongst African Americans [59].

Individuals with HS were significantly more likely to report being victimized by intimate partner violence (IPV) [62]. According to the 2010 National Intimate Partner and Sexual Violence Survey, non-Hispanic Black and Native American/Alaska Native women reported higher prevalence rates of lifetime IPV (43.7% and 46%, respectively) compared to non-Hispanic White women (34.6%). These disproportionate rates were also consistently documented in multiple US studies [63]. Screening for IPV should be incorporated into care of HS patients, especially those of SOC [59].

Further, β-lactams, such as cefazolin, are considered first-line therapy for Staphylococcus aureus and Streptococcus species causing skin and soft tissue infections (SSTIs). Alternative treatments, such as clindamycin, are considered inferior [64]. A large analysis ($n = 1242$) of adult inpatients from 91 US hospitals treated for SSTIs found that cefazolin was more commonly used in White inpatients than in Black inpatients [13% ($n = 114$) vs 5% ($n = 11$)]; clindamycin was more frequently used in Black inpatients than in White inpatients [12% ($n = 27$) vs 7% ($n = 62$)]. Adjusting for multiple factors (e.g., methicillin-resistant Staphylococcus aureus colonization, infection, and penicillin allergy), White inpatients were at an increased risk of cefazolin use [aOR, 2.82 (95% CI 1.41–5.63)] and decreased risk of clindamycin use [aOR, 0.54 (95% CI 0.30–0.96)] compared with Black inpatients [65].

Limitations of objective scoring systems

One of the most commonly used classification systems in dermatology is the Fitzpatrick skin type [66]. It was developed in 1975 by Thomas B. Fitzpatrick to assess the propensity of the skin to burn during phototherapy. The original FST included skin types I through IV; skin types V and VI were later added to include individuals of Asian, Indian, and African origin with brown to black complexions [66]. From that, FST became used by providers as rather a surrogate to describe race and ethnicity instead of Fitzpatrick's original intent of using it as a measure to label a person's reaction to phototherapy. A study performed on 43 healthy Thai volunteers found that FST did not correspond well to the constitutive and facultative skin color. There was also no correlation between skin type and minimal erythema dose, and no relation between skin type and the slope of the dose–response curves for erythema and pigmentation [67]. Moreover, race and pigmentary phototypes do not provide an accurate predictor of sun sensitivity as defined by FST [68].

A survey of 140 dermatologists and dermatology trainees found that approximately one-third to one-half of academic dermatologists/dermatology trainees used FST to describe race/ethnicity and/or constitutive skin color. The misuse of FST may occur more frequently amongst physicians who do not identify as SOC [66]. Using FST as a proxy for race may still exist because there are no other widely accepted classification system for describing skin color in all skin types [66]. More culturally appropriate and clinically relevant methods for describing skin color need to be developed and used, and the original intent of FST should be emphasized and incorporated into dermatology education and training.

Erythema in darker skin individuals may appear more violaceous and be completely missed by practitioners who are not trained to detect nuances in erythema presentation in SOC [69]. The use of common scoring systems that rely on skin erythema, including SCORAD, SASSAD, NESS, and EASI, were found to significantly underestimate the severity of AD in darker skin types [70–72].

Psoriasis in SOC patients may also present with less conspicuous erythema, even appearing violaceous or hyperchromic. It more often resolves with post-inflammatory hypo- or hyperpigmentation. In clinical research, severity of psoriasis is commonly assessed using the psoriasis area and severity index, which uses erythema as one of its indices. Similar

to AD, erythema in psoriasis can be more challenging to detect in darker skinned individuals, as involved areas may have a dark brown or violaceous hue instead of the pink or red color typically observed in patients with lighter complexions. Further challenges can arise in those with heavily pigmented skin, where distinguishing psoriasis from lichen planus (especially the hypertrophic type), sarcoidosis, and cutaneous lupus can be more challenging and lead to unnecessary biopsies [73].

Patient diversity in clinical trials

Inadequate representation of different races and ethnicities is a problem in national and international clinical trials. A SR of RCTs conducted between July 2010–July 2015 involving psoriasis, AD, acne, vitiligo, seborrheic dermatitis, alopecia areata, and lichen planus found that overall, only 52 of 626 international (11.3%) studies, and 58 of 97 studies (59.8%) conducted exclusively within the USA, reported on racial or ethnic demographics of study participants [74].

Psoriasis studies included the least diversity with 84.3% of total study participants recorded as White. Funding source and journal type did not demonstrate a statistically significant relationship with respect to diversity of study subjects [74].

In 2014, a review of US AD therapy studies was performed to assess for racial differences in treatment response. Only eighteen US studies were identified, of which nine were included. The sample size of patients ranged from 5 to 28. Only two studies reported data on treatment responses in different races or ethnicities. Moreover, a lack of diversity in clinical trials limits the generalizability of many results to racial and ethnic minorities [75, 76].

Reduced enrollment in clinical trials of SOC populations may be due to distance from clinical trial sites, lack of education regarding clinical trials, lack of awareness that clinical trials are available for the particular disorder, language barriers, and mistrust of researchers from historical experiences such as The United States Public Health Service Syphilis Study at Tuskegee [77]. A survey of 90 AA and White parents in an academic dermatology clinic found that AAs were 3 times as likely to feel that their child might be "treated like a guinea pig" if the child was a research subject. Nearly one-third more Whites than AAs were more inclined to enroll their healthy child in a research study if they had an established relationship with the healthcare provider informing them of the study. Nevertheless, there was no racial difference in the willingness to theoretically allow their child to participate in research studies [78].

Adalimumab is approved for HS treatment. However, clinical trials for adalimumab did not sufficiently examine treatment response in SOC patients [79–82]. One study was conducted solely in White and Romany individuals, [75] while another study consisted of 80–85% Whites [81]. No trials reported the percentage of patients that were Hispanic/Latino or stratified responses to adalimumab by race. [55] Other published systemic biologic agent trials for HS (e.g., etanercept, infliximab, anakinra, and ustekinumab) either did not report race or largely had a White population [83–86].

Structural racism in medicine

A discussion about racial disparities in dermatology would not be complete without clearly acknowledging the role of structural racism on health outcomes amongst racial and ethnic minority groups. There is not necessarily one "official" definition of structural racism, but all definitions make clear that structural racism is not simply the product of individual prejudice and discrimination [87]. Structural racism include public policies, social forces, institutional practices, and macro-level systems that interact with each other to create an environment that continually perpetuates racial inequality. It brings to light forces within our society's structure that allow racism to endure and adapt over time [88].

An example of structural racism that was identified in AD studies suggested possible gene-environment interactions may better explain the differences seen in the severity between racial and ethnic groups [89]. Factors that were previously discussed as contributing to AD severity (i.e., living in rented homes, being in lower income families, having caregivers with lower educational attainment, and living in highly segregated communities) were found to be more likely in AA children with AD [90]. Although redlining officially ended with the Fair Housing Act of 1968, its lasting effects are still seen today in US cities. Residential discrimination lead to a culture of broad social disinvestment, especially in neighborhood infrastructure (e.g., green space, housing stock, and roads), services (e.g., transport, schools, and garbage collection), and employment. [87] Moreover, neighborhoods that were not part of this redlining had lower levels of carcinogens and higher levels of canopy coverage which mitigates air pollutants and heat [91]. Systematic disinvestment in these neighborhoods makes it difficult to attract primary-care providers and specialists to predominantly Black neighborhoods and have lower-quality facilities with fewer clinicians than those in other neighborhoods [92]. This also highlights that the social construct of race should not be mistakenly viewed as being part of an intrinsic biologic difference [87].

Dismantling pervasive structural racism involves the whole of society. It requires moving beyond the individual to affecting change at the policy level and changing societal norms. The healthcare community can start by acknowledging and educating ourselves on the health

impacts of racism. A previous study found that only 25 articles named institutionalized racism in the title or abstract among all articles published in the 50 highest-impact journals from 2002 to 2015 across six different categories representing the public health field in the USA [93] Institutionalized racism was a core concept in 16 of 25 articles [93]. Moreover, studies showed that despite the long history of racism and its effects on health, scientific research showing its impact on health is rarely published in major medical journals [92, 93]. Further, lack of diversity in clinical trials and the inclusion of SOC populations is leading to biased research that further bolsters structural racism. Efforts not only need to be made to ensure that the makeup of clinical trials is reflective of the general population and/or reflective of communities significantly burdened by the disorder being researched (e.g. HS), but also that more data that includes race and ethnicity should be encouraged and collected. Finally, something to be considered when measuring the success of an intervention could be how it narrows the inequitable gaps in health (e.g., between Black people and White people) instead of focusing solely on the overall population [87].

Conclusion

There remains a significant amount of change that is needed across dermatology and a need for increased awareness of the current issues facing SOC populations. Dermatologists must be aware of existing racial/ethnic health disparities amongst SOC patients and how their treatment, satisfaction, QOL, and health outcomes are being impacted. We must continue to work toward increasing the diversity of the dermatology workforce, increasing diversity education of current dermatologists in practice, including a diverse range of skin tones in images used in dermatology training, and teaching trainees how diseases may present differently in different skin tones.

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Declarations

Competing interests The authors declare no competing interests.

Conflict of interests None.

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