

# Racial Disparities in Psoriasis Treatment: A Review of Prescription Patterns and Outcomes Across White and Skin of Color Populations

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## ABSTRACT

Psoriasis treatment demonstrates significant racial disparities, with Black patients and other individuals with skin of color experiencing higher disease severity yet receiving less access to advanced therapies compared to White patients. This review examines existing literature on differences in prescription patterns, treatment modalities, and clinical outcomes for psoriasis in White versus Black populations. Focus is placed on biologics, systemic non-biologic therapies, phototherapy, and topical treatments, highlighting inequities in treatment access, clinician decision-making, and infrastructure availability. Black patients are consistently underprescribed advanced therapies, such as IL-17 and IL-23 inhibitors, despite evidence supporting their efficacy in severe plaque-dominant phenotypes. Instead, systemic corticosteroids and methotrexate are disproportionately prescribed, even though they are associated with suboptimal outcomes and higher side-effect profiles. Phototherapy, while effective for darker skin types, is less frequently recommended due to barriers including access and clinician unfamiliarity with tailoring treatment for skin of color. Emerging data suggests that the specialty of the prescribing clinician plays a role in these disparities, with non-dermatologists being less likely to initiate biologic therapies and more likely to prescribe

older systemic treatments. Additionally, structural barriers, including limited access to dermatologists and phototherapy centers equipped for darker skin tones, exacerbate inequities. This review identifies key gaps in understanding, including the impact of implicit bias on treatment decisions, differences in adherence and patient-reported outcomes by race, and the role of systemic factors such as insurance coverage and geographic access to care. Strategies to address these disparities include expanding education for non-dermatologist providers, improving infrastructure for phototherapy, and incorporating culturally sensitive approaches into patient education and clinician training.

**Keywords:** Psoriasis, Racial Disparities, Treatment Modalities, Skin of Color, Biologic Therapies

## INTRODUCTION

Psoriasis is a chronic inflammatory skin disorder caused by abnormal immune responses, displaying both local skin symptoms and systemic effects. Psoriatic inflammation arises from a bidirectional relationship between innate and adaptive immune responses, particularly through self-amplifying inflammatory pathways. Specifically, activated dendritic cells initiate T-cell responses through pro-inflammatory cytokine signaling, including TNF- and IL-23 [1,2]. These cytokines, in turn, activate T<sub>H</sub>17 cells, which mediate pathogenesis through IL-17 production, sustaining inflammation and keratinocyte hyperproliferation. The overactivation of keratinocytes results in the epidermal hyperplasia characteristic of psoriatic plaques. The role of these dysregulated immune mediators provides key biological targets for therapeutic interventions.

While psoriasis is typically associated with a higher prevalence in White individuals, existing research underscores marked racial disparities in both the severity of the disease and treatment outcomes. Evidence suggests that non-White individuals, including those who identify as Asian, Hispanic, and Black, tend to exhibit more severe symptoms at the time of diagnosis [3]. The term 'skin of color' refers to individuals with higher levels of melanin, including those who identify as Black, Hispanic, Asian, Native American, and other non-White racial or ethnic groups. These discrepancies may arise from systemic barriers limiting access to dermatologic care, coupled with variations in disease presentation across skin tones. As a result, non-White individuals with psoriasis might be underrepresented in epidemiologic studies due to issues of underdiagnosis [4]. In addition, Black patients with psoriasis

face challenges in accessing advanced therapies and are more likely to receive older treatments associated with higher risks and less efficacy [5]. Furthermore, while phototherapy offers an effective alternative to oral treatments, melanated individuals are at a higher risk of hyperpigmentation and may require adjustments in dosage and treatment duration [6]. Clinicians may lack experience in tailoring phototherapy for skin of color, and access to such treatments remains another barrier to care.

This review aims to highlight the existing literature on disparities in prescribing patterns, treatment modalities, and clinical outcomes for psoriasis among White versus Black patients. We explore the underuse of biologics in communities of color, the ongoing reliance on older systemic therapies with unfavorable safety profiles, and the unique barriers to phototherapy for darker skin types. We also highlight how implicit bias, inequitable insurance coverage, and geographic isolation contribute to these patterns. By identifying these gaps, we aim to propose strategies to move the field toward more equitable, patient-centered care.

## REVIEW: PRESCRIPTION PATTERNS AND TREATMENT MODALITIES

Advanced therapies such as biologics that target interleukin-17 (IL-17) and interleukin-23 (IL-23) have become effective treatments for moderate to severe plaque psoriasis. These therapies work by inhibiting specific cytokines involved in the pathogenesis of psoriasis, aiding in the management of this chronic inflammatory disease. IL-17 inhibitors, like secukinumab, ixekizumab, and brodalumab, have been shown to demonstrate high efficacy in achieving nearly complete or total skin clearance and reducing flare-up severity [7,8,9]. Similarly, IL-23 inhibitors, such as guselkumab and risankizumab, are also highly effective, though slightly less so than IL-17 inhibitors. They do, however, carry a lower risk of adverse events and infections compared to IL-17 inhibitors [10,11]. These advanced therapies have revolutionized the management of moderate to severe plaque psoriasis, offering highly effective and safer alternatives to older systemic treatments.

Despite their significant efficacy, the prescription of these biologic agents is not uniform among all patient demographics [5]. Notably, Black patients with psoriasis are significantly less likely to receive these advanced therapies. For example, Black Medicare recipients with moderate to severe psoriasis are 70% less likely to receive biologics compared to their white

counterparts, even after accounting for demographic and socioeconomic factors, comorbidities, or differences in Medicare plans [12]. This underutilization reflects systemic healthcare inequities, which may include barriers to accessing dermatological care or biases among providers. Additional research indicates that biologics are also used less frequently among Black patients relative to White patients [13]. One meta-analysis by McMichael et al. examined pooled data from 1,825 ixekizumab-treated patients and found that all self-identified racial groups, including Black/African American and American Indian/Alaska Native patients, showed improvement in symptoms after 12 weeks of treatment [14]. Such disparities are alarming, given that Black patients can benefit equally from the superior efficacy of biologics in achieving significant skin clearance. It is crucial to address these inequities to guarantee that all psoriasis patients receive optimal care, as underutilization may negatively impact disease management and the overall quality of life for Black patients in comparison to White patients.

Older systemic therapies, such as methotrexate and systemic corticosteroids, played a crucial role in managing psoriasis symptoms before the rise of newer biological therapies. Methotrexate, known for its immunomodulatory effects, has been used extensively to significantly reduce psoriasis severity [15]. However, its regular application requires careful monitoring to avoid adverse effects, such as bone marrow suppression and hepatotoxicity [16]. Methotrexate achieves a 75% reduction in psoriasis severity, contrasted with a 90%-100% reduction offered by biologics, resulting in suboptimal treatment outcomes [17,18]. Systemic corticosteroids, while occasionally used in severe cases of psoriasis to decrease systemic inflammation, carry safety risks, including higher cardiovascular risk [19]. Although research has not directly explored racial disparities in the use of methotrexate or corticosteroids for psoriasis, the underutilization of biologics among Black patients suggests that many are still relying on these older, less effective therapies. This raises significant concerns regarding prescribing practices and access to safer and more effective treatment options.

Phototherapy serves as an integral modality in the management of psoriasis, as it provides effective control of the disease without systemic side effects. Treatment is often considered for patients whose psoriasis has not been controlled with topical therapies or those with a body surface area (BSA) greater than 10% [20]. Lytvyn et al. report that, although psoriasis is more common among Caucasian patients, skin of color

patients often present with a higher clinical severity, with plaques covering a greater percentage of their BSA [21]. Although unclear, this finding could be attributed to the misdiagnosis of psoriasis in Black patients or the misrepresentation of Black patients in clinical studies. Despite being particularly beneficial for individuals with darker skin phenotypes, numerous barriers hinder optimal phototherapy utilization among Black patients, including clinician inexperience. Patients with a higher melanin content often require higher doses of treatment [21,22]. Addressing these barriers is critical to ensuring equitable access to effective treatment modalities for patients of color.

These challenges are compounded by clinician inexperience and concerns about potential adverse effects, which further limit the use of phototherapy in patients with skin of color. Melanin protects against long-term carcinogenesis effects of treatment, but other skin damage is still possible. When considering phototherapy, patients of color should be advised about potential adverse effects, including hyperpigmentation [21,22]. Kerr et al. reported that psoriasis has a more significant impact on the quality of life in individuals with skin of color [23]. Common quality-of-life complaints among patients of color include feelings of self-consciousness, anger, and embarrassment [24]. Though other factors contribute to this measure, clinicians might be hesitant to initiate treatment due to the potential for negative post-treatment dyspigmentation among Black patients.

Insufficient healthcare infrastructure presents barriers to phototherapy among patients with skin of color. Though dermatologists often use the Fitzpatrick skin classification scale when recommending this treatment, research suggests that the minimal erythema dose (MED) is a better measurement of an individual's response to radiation [22,25]. Calculating the MED requires specialized equipment that may not be readily accessible in many clinics, which can disproportionately impact patients with skin of color. Further, treatment requires several weekly appointments, creating further obstacles for patients residing in rural or underserved communities, who may struggle with transportation access or be unable to take extended time off from work.

Topical therapies are essential for managing mild to moderate psoriasis and often complement systemic treatments. For patients with mild psoriasis, topical treatments are the priority and include corticosteroids as well as non-steroidal topical

treatments, such as calcineurin inhibitors, retinoids, and vitamin D analogs [26]. Nevertheless, prescribing disparities exist between Black and White patients, with the former receiving less efficacious topical agents. While corticosteroids are effective, they can lead to hypopigmentation in skin of color [21]. As an alternative, clinicians may treat psoriasis in patients of color with non-steroidal topical treatments, though these options are less effective. According to Lebwohl et al., vitamin D analogs are often comparable to mid-potent corticosteroids but may lead to irritant dermatitis [27]. For Black patients with scalp psoriasis, physicians should consider the texture of their hair and their hair care practices [28]. Oil-based solutions may be more suitable for these patients as they can alleviate the dryness and irritation associated with psoriasis without stripping the natural oils essential to maintaining a healthy scalp. This highlights the critical need for culturally competent care and equitable resource allocation in psoriasis management. Physicians must have honest and open conversations with their patients about available treatments, associated risks, and their implications for overall health.

Therapeutic apheresis, particularly granulocyte and monocyte apheresis (GMA), offers an alternative treatment option for severe cases of pustular psoriasis and psoriatic arthritis. The removal of activated granulocytes and monocytes extracorporeally reduces the inflammatory response associated with these diseases. GMA, initiated after the failure of other therapeutic options, has been demonstrated to be beneficial to various dermatological conditions and could be considered a valid non-pharmacological treatment option [29]. However, no studies have specifically examined the efficacy of GMA in Black patients, highlighting a gap in existing data. This lack of research continues to underscore the racial inequality in dermatological studies. The underrepresentation of Black patients in research limits the generalizability of findings and access to equitable treatment options.

### FACTORS CONTRIBUTING TO DISPARITIES

Clinician-related factors significantly impact treatment disparities for psoriasis. Dermatologists are more likely to prescribe advanced therapies such as biologics, whereas non-dermatology providers typically favor traditional treatments like corticosteroids [30]. Black patients with moderate to severe psoriasis are less likely to receive biologics compared to White patients, potentially due to reduced exposure or a lack of understanding about these treatments, regardless of whether

patients have received information about them [5]. This discrepancy disproportionately affects Black patients who may not receive necessary specialized care for psoriasis treatment. Efforts to improve understanding and exposure to biologics as treatment options are needed to bridge the gap in existing disparities.

Patients with skin of color are underrepresented in psoriasis clinical trials, limiting the development of diagnostic and treatment guidelines tailored to their needs. A study by Yadav et al. revealed that skin of color patients is less likely to be properly represented in trials assessing psoriasis therapies [31]. Among clinical trials in dermatology, psoriasis studies are the least diverse [32]. This lack of representation perpetuates diagnostic challenges and inequities in care, as psoriasis often presents differently in skin of color patients compared to White patients. For example, individuals with skin of color tend to have thicker plaques, varying pigmentation, less obvious inflammation, and greater post-inflammatory hyperpigmentation, which does not align with the “textbook” definitions of psoriasis predominantly based on lighter skin types [31]. These differences increase the likelihood of misdiagnosis or delayed diagnosis, further contributing to treatment disparities. Misdiagnosis delays appropriate care, exacerbates disease severity, and reinforces systemic inequities in psoriasis management. Addressing these gaps requires improving the inclusivity of clinical trials and educating clinicians about the diverse presentations of psoriasis to ensure more accurate diagnoses and equitable treatment for all patients.

Systemic inequities further compound these challenges. Patients of color often encounter significant barriers in accessing dermatological services and phototherapy, particularly in underserved regions. Research by Bray et al. revealed that, compared to White patients, non-White patients reported high medical costs and lack of culturally competent care as one of the largest barriers to seeking psoriasis treatment [32]. Enhancing diversity and cultural competence among providers has the potential to improve patient adherence to treatment, satisfaction levels, and health outcomes [33,34]. Implicit biases among healthcare professionals can also skew clinical decision-making, as unwarranted assumptions regarding patient adherence and socioeconomic status may result in substandard care for patients of color. Differences in insurance coverage can impose financial constraints for advanced therapies, which are frequently less covered than older treatment modalities [35]. Geographic disparities exacerbate the situation,

as individuals residing in rural or underserved urban areas face significant hurdles in accessing appropriate care. Addressing these systemic issues may require robust policy reforms to improve access to dermatological services.

### KEY GAPS IN UNDERSTANDING

Implicit bias encompasses the unconscious attitudes, stereotypes, and prejudices that shape our decisions, actions, and perceptions, frequently putting marginalized groups at a disadvantage. These biases can significantly affect decision-making, particularly when caring for patients from lower socioeconomic backgrounds, leading to poorer health outcomes [36]. Manifestations of implicit bias include differential treatment, allocation of resources, and levels of support. For example, clinicians and patients frequently have different views on the severity of psoriasis, as seen in disagreements over BSA assessments [37]. Such discrepancies may reflect implicit bias in clinical settings, where physicians might unconsciously prioritize their assessments over patients' reported experiences and symptoms, ultimately impacting care. Recognizing and addressing these differences is essential for improving communication between patients and providers, ensuring that all patients receive fair and equal care, regardless of their backgrounds or personal experiences.

In addition to shaping interactions between patients and clinicians, biases can also lead to systemic inequalities in treatment. For instance, the lower rate of biologic therapy prescriptions for Black patients, relative to White patients with the same disease severity, demonstrates how bias can influence clinical decisions [5]. These inequalities highlight the pressing need for targeted initiatives and educational programs within the healthcare sector to combat biases and ensure fair treatment opportunities for everyone. Establishing a framework for training clinicians on implicit bias and promoting a culture that values patient feedback could greatly enhance care, resulting in more accurate evaluations and improved outcomes for Black patients suffering from psoriasis.

A challenge in addressing racial inequalities in psoriasis treatment is the lack of detailed research on differences in treatment adherence and patient-reported outcomes. Research shows that adherence to psoriasis treatment is often low due to complex treatment plans, fear of side effects, and the high cost of medications [38]. Making treatment options more affordable and simplifying medication regimens are crucial steps in improving patient adherence, which can lead to

better management of psoriasis. Similarly, patient-reported outcomes, such as satisfaction with care and quality-of-life improvements, lack sufficient racial comparison data. The current literature's generalized findings suggest that psoriasis disproportionately affects the quality of life for patients, leading to increased social stigma, psychological distress, and challenges in accessing appropriate healthcare, which can exacerbate physical symptoms and overall well-being [39]. More research is needed to explore racial differences in treatment adherence and patient-reported outcomes specifically. This could help develop targeted, patient-centered approaches to reduce disparities in psoriasis care.

Systemic factors such as limitations in insurance coverage and the high cost associated with advanced psoriasis treatment contribute to disparities in care. Advanced therapies, such as biologics, are among the most effective options for managing severe psoriasis. Still, financial barriers and restrictive insurance policies often make them difficult to access, creating a treatment gap for Black and skin of color patients [40]. These challenges can sometimes force patients to forgo biologic treatments, which can worsen their condition and negatively impact their quality of life. Other constraints imposed by insurance companies include the requirement for prior authorizations or the need to provide documentation that psoriasis treatment has failed before biologics are approved [41]. These additional barriers complicate the insurance approval process and can delay necessary treatment to enhance a patient's quality of life. Addressing these knowledge gaps is crucial for developing effective strategies to reduce disparities and improve psoriasis care for patients from all backgrounds.

### STRATEGIES TO ADDRESS DISPARITIES

To mitigate inequities in psoriasis treatment, it is imperative to enhance educational initiatives aimed at non-dermatology providers such as primary care providers (PCPs), often the initial point of contact for dermatologic concerns. Specialized training on identifying severe psoriasis and prescribing biologics can significantly improve access for underrepresented populations. Like other dermatologic conditions like atopic dermatitis, PCPs can manage psoriasis but may not be as well-versed in advanced therapies. A systematic review from Croce et al. examined interventions that aimed to improve atopic dermatitis treatment by PCPs and found that interventions combining clinical education and expert consultation significantly improve PCP knowledge and patient outcomes [42]. In

a recently developed online psoriasis training tool, non-dermatological medical staff showed increased diagnostic scores and confidence in managing psoriasis post-training [43]. Educating medical staff with detailed clinical scenarios and providing illustrations of psoriasis across diverse skin types can equip medical staff to address the unique needs of patients of color. These training tools can be employed to ensure earlier diagnosis, appropriate therapy, and improved outcomes, especially in areas with limited access to specialists. Providing training in an online format offers a convenient education method that could be effectively implemented globally.

Culturally competent training initiatives are essential for preparing clinicians to address the specific needs of patients with skin of color. Organizations such as the American Academy of Dermatology (AAD), American Society for Dermatologic Surgery (ASDS), Skin of Color Society (SOCS), and Women's Dermatologic Society (WDS), are committed to increasing diversity in dermatology by providing educational modules and publications that highlight topics on skin of color, health disparities, and cultural barriers to treatment [44]. Additionally, these organizations conduct workshops, conferences, and mentorship programs to educate physicians and students about the unique needs of patients of color. Initiatives such as these are imperative to improve cross-cultural understanding and treatment approaches, leading to improved outcomes for patients of color. Moreover, culturally competent training programs addressing preconceptions, such as those described by Svetkey et al., have improved physicians' self-efficacy and prejudices [45]. Although these programs are mostly marketed toward medical students and dermatologists, greater advocacy is needed to encourage participation from all medical providers. Expanding the reach of these programs could help address biases and promote equitable treatment practices, ultimately leading to improved patient outcomes.

Enhancing healthcare infrastructure is critical to achieving equitable access to psoriasis care. Increasing the availability of phototherapy centers is essential for supporting Black patients encountering geographic and systemic barriers. Black patients often face significant geographic and systemic barriers, traveling an average of 45.6 miles for phototherapy treatment—a burden disproportionately higher compared to other groups [46]. This travel distance exacerbates disparities, as patients need reliable transportation, funds for gas, and time off work to adhere to phototherapy schedules. Additionally, the financial burden of copays and the limited geographic

availability of centers pose further challenges, especially in rural and underserved urban areas. Creating new phototherapy centers in underserved areas can improve equitable access to care for patients with psoriasis.

At-home phototherapy has proven to be an effective method to combat the geographic and financial barriers that many patients face. The LITE study, which included multi-racial participants, provided compelling evidence that home phototherapy is non-inferior to office phototherapy and is effective across all skin types [47]. Home phototherapy has the potential to address the convenience and access challenges that many patients face, and it is cost-effective compared to standard biologics. Unfortunately, despite phototherapy's reduced costs, it is unlikely to be covered by insurance [48]. This creates an additional barrier for patients who could benefit from phototherapy but cannot afford the out-of-pocket costs. Efforts should be made to advocate for broader insurance coverage of home phototherapy. Advocacy for broader insurance coverage and reduced copays could make this vital treatment more accessible.

Expanding dermatology services geographically is critical to addressing disparities in care. There is currently a national shortage of dermatologists. Many are concentrated in urban areas, leaving patients in rural areas especially underserved [49,50]. Establishing dermatological services in underserved regions would significantly enhance access to care. Access to dermatologists is paramount in these communities, as many patients cannot afford the time or resources required to travel to urban areas for care. Teledermatology can offer a solution by providing cost-effective and time-effective access to dermatological consultations, supporting remote monitoring, and ensuring adherence to treatment schedules [51]. By expanding physical services along with the utilization of teledermatology, healthcare systems can provide timely and equitable access to care for patients in even the most underserved areas, ultimately improving outcomes and reducing disparities.

Addressing treatment disparities necessitates a patient-centered approach emphasizing education and active engagement. Creating culturally relevant patient education materials can equip individuals with knowledge about their conditions and the treatment options available to them. Overcoming barriers to adherence, such as financial constraints and mistrust in the healthcare system, will foster improved patient engagement and clinical outcomes. Patients who grasp their

diagnoses and treatment options are more likely to engage in their care and attend follow-up appointments. Encouraging collaboration in decision-making among healthcare providers and patients can improve treatment adherence and overall satisfaction while also tackling inequities in psoriasis management. Organizations such as the National Psoriasis Foundation have developed extensive online resources and support groups to inform diverse patient populations. Virtual communities, as noted by Idriss et al., offer critical education and psychosocial support for psoriasis patients [52]. These groups cultivate a sense of community, enabling patients to form valuable connections and thrive despite their condition.

Additionally, drug manufacturers, such as AbbVie (HUMIRA), have implemented patient support programs that focus on improving adherence to biologic therapies. The HUMIRA *Complete* patient support program (PSP) helps support and cover the cost of biologic treatment and provides access to an exclusive patient portal with educational materials. Brixner et al. reported that participation in the PSP resulted in lower odds of abandoning psoriasis treatment [53]. Future research should examine how these groups perform among patients of color compared to white patients. It is important to consider that cultural differences, personal experiences, and systemic barriers might influence their effectiveness. By creating educational resources and support systems tailored to diverse patient demographics, healthcare professionals can empower patients and enhance their engagement in psoriasis treatment.

## CONCLUSION

Racial disparities in psoriasis stem from factors related to clinicians, systemic challenges, and unequal access to treatment. Black patients and individuals with skin of color often face more severe psoriasis but encounter barriers such as reduced access to biologic therapies, phototherapy, and effective treatments compared to White patients, leading to worse health outcomes. Implicit biases, geographic obstacles, limitations in insurance coverage, and insufficient culturally competent care further worsen these disparities. To address these issues, it is crucial to educate clinicians on current treatment options, create culturally aware training programs, and enhance healthcare infrastructure. Improving access to advanced therapies and addressing the distribution of dermatology services is vital for achieving equitable care. Additionally, research should prioritize understanding disparities in treatment adherence and patient-reported outcomes to identify cost-related barriers

to effective therapy access. Promoting diversity in clinical trials is also essential for developing evidence-based treatments that serve all populations. Through targeted interventions and addressing systemic challenges, healthcare systems can work to diminish disparities and improve outcomes for psoriasis patients across diverse backgrounds. Such initiatives can ultimately lead to a future where high-quality psoriasis care is accessible and inclusive for everyone.

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## CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

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