

Public Interest in Hyperpigmentation: Insights From a Google Trends Analysis

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ABSTRACT

Background: Pigmentary disorders, particularly hyperpigmentation, disproportionately affect individuals with skin of color and are associated with significant psychosocial burden. Despite their global prevalence, real-time data on public awareness and interest remain limited. Digital tools such as Google Trends offer a novel approach to assessing public interest in dermatologic conditions.

Methods: Google Trends was used to evaluate public interest in hyperpigmentation-related terms such as “hyperpigmentation,” “pigmentation,” “skin brightening,” “brown spots,” and “dark spot treatment” from January 2004 to October 2025. Data were analyzed for the United States (US) and globally using relative search volume (RSV), a normalized scale from 0-100 representing peak popularity within a defined region and time frame. Temporal trends, seasonal variation, and geographical distribution were assessed.

Results: Across all terms, RSV demonstrated a sustained increase over time both domestically and globally. “Pigmentation” and “hyperpigmentation” consistently showed the highest search interest, with a marked spike in “hyperpigmentation” in early 2025. “Brown spots” exhibited seasonal peaks during the summer months. In the US, the highest relative search interest for “brown spots” was observed in southern states, including South Carolina, Alabama, and Tennessee. Globally, countries such as Ghana, Nigeria, and Mauritius frequently ranked highly across multiple terms.

Conclusion: Public interest in pigmentary disorders has increased significantly over the past two decades. Google Trends provides valuable insight into consumer awareness and information-seeking behavior, highlighting potential gaps in education and access to dermatologic care. These findings may inform targeted public health initiatives and culturally responsive interventions for populations disproportionately affected by pigmentary conditions.

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INTRODUCTION

Pigmentary disorders span the spectrum from hyperpigmentation to hypopigmentation and depigmentation.¹ These conditions disproportionately affect skin of color (SOC) individuals with an increased prevalence of certain conditions of hyperpigmentation, including melasma, post inflammatory hyperpigmentation (PIH), and acquired disorders of macular hyperpigmentation (ADMH).² Pigmentary disorders are highly prevalent worldwide, yet remain underrepresented in large-scale epidemiologic studies. In a global online survey of over 48,000 adults across 34 countries, approximately 50% of respondents reported at least one pigmentary disorder, with PIH affecting 14.7% and melasma affecting 10.9% of participants, underscoring the substantial global burden and impact of these conditions on quality of life and social stigmatization.³

As pigmentary disorders continue to significantly impact SOC individuals, they have simultaneously driven increasing consumer demand for products designed to improve uneven pigmentation and skin color.⁴ Despite the many warnings that advertise the possible side effects of overuse and misuse of

certain skin lightening agents, the industry is still experiencing exponential growth worldwide.⁴ The skin lightening industry is expected to be worth over 24 billion dollars by 2027.⁵

As there are limited real-time data on public awareness and interest in pigmentary disorders, Google Trends offers a publicly available data source to evaluate search interest over time and geography. Google Trends utilizes anonymized and categorized samples of Google search queries grouped together to display how interest in topics can vary across the world.⁶ Previous work has leveraged this tool to track public interest in specific skin disorders.⁷ The goal of this study was to explore domestic and global search interest in pigmentary disorders, to identify trends that may reflect disease burden, consumer interest, and opportunities for targeted public health interventions.

MATERIALS AND METHODS

Google Trends was used to evaluate fluctuations in public interest over time and across geographic regions in cutaneous hyperpigmentation. On October 23rd 2025, the search terms “hyperpigmentation,” “pigmentation,” “skin brightening,” “brown

spots,” and “dark spot treatment” were entered into the platform. The searches included data from the United States (US) as well as globally between January 1, 2004, and October 2025. Google Trends normalizes search activity on a 0-100 relative search volume scale (RSV), where 100 represents the peak popularity of the term within the selected location and timeframe. RSV values are independent for each search term and do not represent absolute search volume or percentage of total searches. When comparing multiple terms within a region, Google Trends provides the distribution of each term as a proportion of the selected search set, which allows insight into the relative popularity of each term locally. Because RSV is normalized, within each region, areas with smaller populations may rank highly if a large population of searches relates to the selected term.

RESULTS

Domestic

From 2004 to 2025, the RSVs for “hyperpigmentation,” “pigmentation,” “dark spot treatment,” “brown spots,” and “skin brightening” demonstrated a steady increase in public interest

(Figure 1). “Brown spots” revealed a seasonal pattern, peaking annually during the summer months. “Hyperpigmentation” ranked as the second most searched term and showed a pronounced spike with an RSV of approximately 100 in early 2025. “Pigmentation,” “skin brightening,” and “dark spot treatment” remained lower in the search interest overall but still showed a gradual upward trend over the study period. The average RSV over time for pigmentation, hyperpigmentation, dark spot treatment, brown spots, and skin brightening ranged from 1 to 15. (Figure 2) These findings suggest that there is a sustained growing consumer focus on skin concerns related to hyperpigmentation. Analysis of Google Trends data identified the top five states with the highest relative search for the term “brown spots.” South Carolina and Alabama ranked highest, followed by Tennessee, West Virginia, and Georgia.

Global

Globally, interest in the five search terms increased markedly from 2004 to 2025. “Pigmentation” consistently demonstrated the highest RSV worldwide throughout the majority of the study period, with seasonal fluctuations, rising during the

FIGURE 1. US interest in hyperpigmentation by search term from 2004 to 2025.

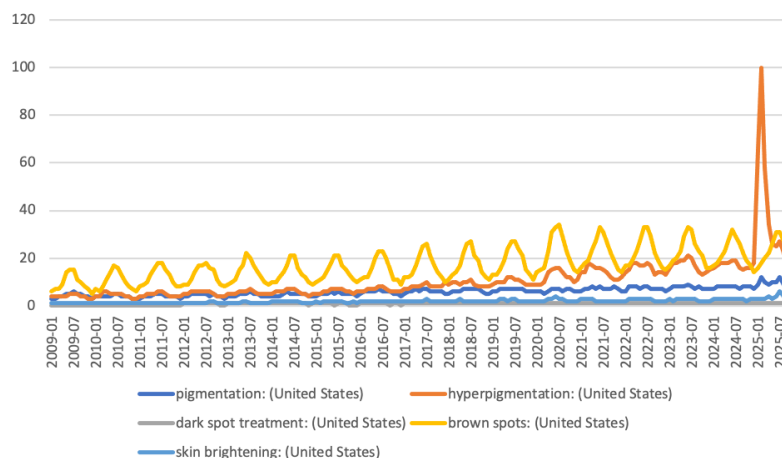


FIGURE 2. Average relative search volume by search term in the us and globally from 2004–2025.

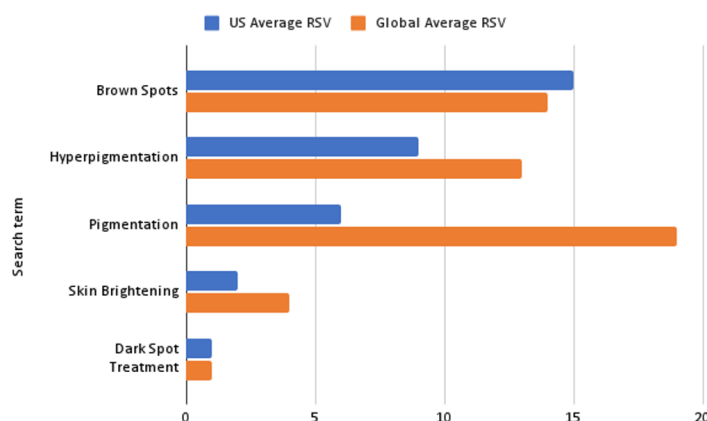


TABLE 1.

Top Five Countries Ranked by Search Terms Interest Based on RSV Normalization (2004-2025)					
Rank	Hyperpigmentation	Skin Brightening	Pigmentation	Dark Spot Treat-Ment	Brown Spots
1	Trinidad & Tobago*	Zambia	Mauritius*	Jamaica*	United States
2	Jamaica*	Nigeria*	India*	Trinidad & Tobago*	Canada
3	Mauritius*	Uganda	Singapore	Mauritius*	New Zealand
4	Ghana*	Ghana*	South Africa	Ghana*	Australia
5	Nigeria*	India*	Nepal	Nigeria*	United Kingdom

*Countries that appear more than once in the top five

summer months and declining during the winter months. This likely reflects the increased UV exposure and concerns for skin discoloration during warmer months with increased sun exposure. "Pigmentation" and "hyperpigmentation" also showed sustained upward growth over time, reflecting rising global attention to skin discoloration and darkening. Notably, "hyperpigmentation" exhibited a dramatic spike near 2025, reaching an RSV of 100. In contrast, "skin brightening" maintained a lower RSV overall but displayed a gradual increase from 2022 to 2024. "Dark spot treatment" remained the least searched term worldwide throughout the time frame. The average RSV over time for pigmentation, brown spots, hyperpigmentation, skin brightening, and dark spot treatment ranged from 1–19 (Figure 2). Across all 5 search terms, several countries repeatedly ranked highly, with Ghana appearing in four categories and Mauritius and Nigeria appearing in three, indicating consistent global interest in pigmentary concerns across these regions (Table 1).

DISCUSSION

Public online search behavior offers valuable insights into how populations perceive and prioritize pigmentary concerns. Our findings demonstrate growing interest in pigmentation both in the US and globally over the last two decades. Seasonal fluctuations in searches for "brown spots" likely correspond to increased sun exposure during the summer months and lower during the winter months. Additionally, the geographic distribution of search interests, including higher proportions in certain US states and international countries, may reflect both environmental and sociocultural influences in those regions.

Limitations

Search values represent relative, not absolute, volume. This means that the results cannot directly quantify disease burden. Internet access disparities and language variations may bias representation across regions. Despite these limitations, digital search analytics remain a powerful tool for detecting patterns in public interest and highlighting potential unmet educational or clinical needs within dermatology.

CONCLUSION

Pigmentary disorders, particularly those of hyperpigmentation, not only disproportionately affect SOC individuals but also

seem to represent a growing public concern, as reflected by the substantial increase in pigmentation-related search activity observed over the past two decades. Leveraging digital search data offers a unique opportunity to better understand consumer-driven awareness, information-seeking behavior, and areas where dermatologic access, education, or treatments may be lacking. This approach can serve as an early indicator of population needs and evolving trends, especially in communities with a high burden of pigmentary disorders. Increased understanding of these interests and needs may also support proactive public health initiatives, targeted educational outreach, and culturally responsive clinical care to better address the needs of diverse populations affected by pigmentary disorders.

DISCLOSURES

Dr Elbuluk has served as a consultant, advisory board member, and/or speaker for Incyte, Beiersdorf, Eli Lilly, Galderma, Pfizer, La Roche Posay, L'Oreal, McGraw-Hill, Dior, Medscape, AbbVie, Takeda, Sanofi, Janssen, Kenvue, Kao, Veradermics, Teva, and SkinCeuticals. She has received royalties from McGraw-Hill. She has stock options in VisualDx. All other authors have no disclosures to report.

REFERENCES

1. Khamaysi Z, Jiryis B. Prevention and treatment of skin pigmentation disorders. In: *J Clin Med*. 2024;13(5):4312.
2. Tsai J, Chien AL. Photoprotection for skin of color. *Am J Clin Dermatol*. 2022;23(2):195-205.
3. Passeron T, et al. Pigmentary disorders around the world: self-reported prevalence and impact on QOL and social stigmatization. *J Invest Dermatol*. 2025; 5:S0022-202X(25)03522-5.
4. Cheng AD, et al. Skin-lightening products: consumer preferences and costs. *Cureus*. 2021;13(8):e17245.
5. Noble A. Skin lightening is fraught with risk, but it still thrives in the Asian beauty market—here's why. *Vogue*. 2019.
6. Google. FAQ about Google Trends data. Available at: https://support.google.com/trends/answer/4365533?hl=en&ref_topic=6248052. Accessed October 23, 2025.
7. Montgomery SNB, Elbuluk N. Evaluating population interest in vitiligo through an analysis of Google Trends and social media. *J Drugs Dermatol*. 2020;19(6):661-665.

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