Tender-headedness: A Google Trends Analysis of Search Interests for Scalp-related concerns

Charissa Obeng-Nyarko, Tatiana Barrera, Temitayo Ogunleye, Susan Taylor

Table of Contents

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Charissa Obeng-Nyarko[1] MS; Tatiana Barrera[2] BS; Temitayo Ogunleye[3] MD; Susan Taylor[3] MD

[1]Florida State University College of Medicine Tallahassee US
[2]University of California - Riverside Riverside US
[3]Department of Dermatology University of Pennsylvania Philadelphia US

Corresponding Author:
Charissa Obeng-Nyarko MS
Florida State University College of Medicine
1115 West Call Street
Tallahassee
US

Abstract

Background: The Internet is a commonly used source for information on hair and scalp care. "Tender-headed" is a socio-cultural term used in Black communities to describe an individual who complains of scalp tenderness, soreness, discomfort, or pain from hair manipulation and hairstyling including combing/brushing, braiding/twisting, parting of the hair, ponytails, or blow-drying.

Objective: In this Google Trends cross-sectional analysis, we aim to understand how tender-headedness is searched on a major search engine and assess differences between queries related to tender-headedness from January 2013 to December 2022.

Methods: Search volume index (SVI) was extracted for categories of keyword phrases (KP) used to describe tender-headedness: (1) tenderness ("tender headed," "tender head"); (2) scalp discomfort ("sore scalp," "scalp hurts," "tight scalp"), and (3) both concepts combined (['tenderness' and 'scalp'] and ["tender scalp," "scalp tenderness"]).

Results: Our findings showed that over the ten-year period, the category phrase for scalp discomfort garnered the highest search interest. Moreover, keyword phrases "tenderhead" and "sore scalp" generated the highest online search interest.

Conclusions: Acknowledging how culturally-specific terms may be used to describe scalp symptoms in Black patients can aid dermatologists differentiate between tenderness induced by scalp manipulation and tenderness associated with an inflammatory alopecia, thus guiding management accordingly.

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Authors: Charissa N. Obeng-Nyarko[1,3], Tatiana M. Barrera[2], Temitayo A. Ogunleye[3], Susan C. Taylor[3]

Institutional Affiliations:

1. Florida State University College of Medicine, Tallahassee, FL

2. University of California, Riverside School of Medicine, Riverside, CA

3. Department of Dermatology, University of Pennsylvania, Philadelphia, PA

Corresponding Author:

Charissa N. Obeng-Nyarko

3400 Civic Center Boulevard – Workstation 3

Philadelphia, PA 19104

Email: cno19a@med.fsu.edu

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Results: Our findings showed that over the ten-year period, the category phrase for scalp discomfort garnered the highest search interest. Moreover, keyword phrases "tenderhead" and "sore scalp" generated the highest online search interest.

Conclusion: The term *tenderhead*, root word of *tenderheadedness*, uncovers an opportunity for dermatologists to utilize additional language to address scalp concerns in Black patients.

Introduction

In Black hair culture, *tender-headed* is a term chiefly used to describe someone with a scalp with heightened sensitivity or discomfort during hairstyling procedures.[1] Commonly, Black children are labeled tender-headed when they express pain during hair manipulation practices including combing/ brushing, braiding/twisting, hair parting, and blow-drying.[1-4] Tender-headedness can vary from mild to significant discomfort. Scalp discomfort presents amongst all ethnicities but scalp discomfort complaints may be more prevalent among women with Afro-textured hair.[5] Scalp tenderness is a common symptom in inflammatory hair disorders, including central centrifugal cicatricial alopecia (CCCA) and traction alopecia (TA) which are both predominant in women of African descent.[6] Characterizing culturally specific language surrounding scalp tenderness or soreness in this population warrants consideration among dermatologists when distinguishing between non-pathologic and pathologic scalp concerns.

The Internet is a commonly used source for information on hair and scalp care. People of African descent may search for information online through search engines, forums, social media, or hair care websites to find tips, advice, and solutions for managing tender-headedness effectively.[7] In this study, we aim to understand how the concept of tender-headedness is searched on a major search engine and assess differences between queries related to tender-headedness. We utilize Google Trends to gauge search trends in the United States. To our knowledge, scalp sensitivity, tenderness, or discomfort triggered by hairstyling practices has not been investigated. To date, there is limited knowledge about Internet search interests regarding tender-headedness as it relates to scalp concerns.

Methods

Google Trends is a Google-developed tool that provides reports on the popularity of certain searches in the search engine. Output from Google Trends is in the form of a search volume index (SVI) which represents the evolution of the popularity of a specific search over time.[8] The resulting SVI values are normalized on a scale from 0 to 100 where a value of 0 represents the lowest level of interest and 100 yields the highest level of interest.[8] These values depend on the specific search phrase, time range, and geographical area selected. SVI values vary slightly by date searched. To maintain SVI consistencies, all values were queried on the same day.[8]

In this cross-sectional analysis, Google Trends was used to extract the monthly web search volume index from January 2013 to December 2022 for seven KPs: "tenderheaded", "tenderhead", "sore scalp", "scalp hurts", "tight scalp", "tender scalp", and "scalp tenderness". In addition, the KPs were grouped into three categories of generic words used to describe tender-headedness: (1) tenderness ("tender headed," "tender head"); (2) scalp discomfort ("sore scalp," "scalp hurts," "tight scalp"), and (3) both concepts ('tenderness' and 'scalp') combined ("tender scalp," "scalp tenderness"). Differences in the mean monthly SVI per category were compared via a generalized estimated equation with Gaussian estimation and exchangeable correlation using Stata v.18. Statistical

significance was measured at p<.05.[9]

Results

Among US online queries made between January 2013 and December 2022, out of seven KPs, "tenderhead" and "sore scalp" had the highest mean search volume index (Figure 1). Compared to "tenderhead", the "sore scalp" search term had a comparable online interest (R 0.32; 95% CI -1.23 to 1.87). The "tenderheaded" term yielded lower search interest compared to "tenderhead" (R -53.3; 95% CI -55.08427 to -51.98239).

Moreover, the 'scalp discomfort' category had the highest mean online search interest (Figure 2). When compared to searches for the 'tenderness' category, there was a significantly higher search interest for the 'scalp discomfort' category (R 5.07; 95% CI 4.21 to 5.93). Additionally, the 'combined category' showed a significantly lower interest in comparison to 'tenderness' (R -8.19; 95% CI -9.05 to-7.33).

Discussion

Among our *tender-headedness* keyword phrase categories, the "scalp discomfort" category generated the highest online search interest. Keyword phrases "tenderhead" and "sore scalp" had the greatest online search volume. Our findings identify "tenderhead" and "sore scalp" as relevant phrases that may be used to describe *tenderheadeness* in some individuals.

Specifically, we believe the phrase "tenderhead" unveils discourse with implications for the practice of dermatology. Search engine queries on "tenderhead" yielded culturally specific articles such as "How to stop being tender-headed"[10] and "Tips for your tender-headed child," [8] which included narratives of childhood experiences,[1-4,10-11] postulated causes for *tender-headednes*[10-13,] provided remedies for scalp tenderness,[10-11] and highlighted the need to seek dermatologic care from a medical professional.[10-13] Dermatologists may benefit from understanding the context of the term when having discussions with Black patients with scalp concerns. Acknowledging how the term "*tender-headedness*" is used to describe scalp symptoms in Black patients can aid dermatologists differentiate

between tenderness induced by scalp manipulation and tenderness associated with an inflammatory alopecia, thus guiding management accordingly.

Conclusion

In summary, since 2013, Google searches regarding scalp-related concerns have increased. The term *tender-headedness* is specifically used in discussions about hair care and scalp sensitivity, particularly in the context of African American hair care. Findings from this Google Trends analysis found that people who searched for information about tender-headedness commonly used the search term "tenderhead". Given the predominance of CCCA and traction alopecia in the Black population, knowledge of tender-headedness will aid dermatologists in assessing the severity of patient-reported symptoms and recommend appropriate treatment options for patients with cultural sensitivity.

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Conflicts of Interest

 ST has served as a consultant, advisory board member and/or speaker for AbbVie, Arcutis, Armis

Scientific, Avita, Beiersdorf, Biorez, Bristol-Myers Squibb, Cara Therapeutics, Dior, Eli Lilly, EPI

Health, Evolus, Galderma, GloGetter, Hugel America, Incyte, Johnson & Johnson, L'Oreal USA,

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Abbreviations

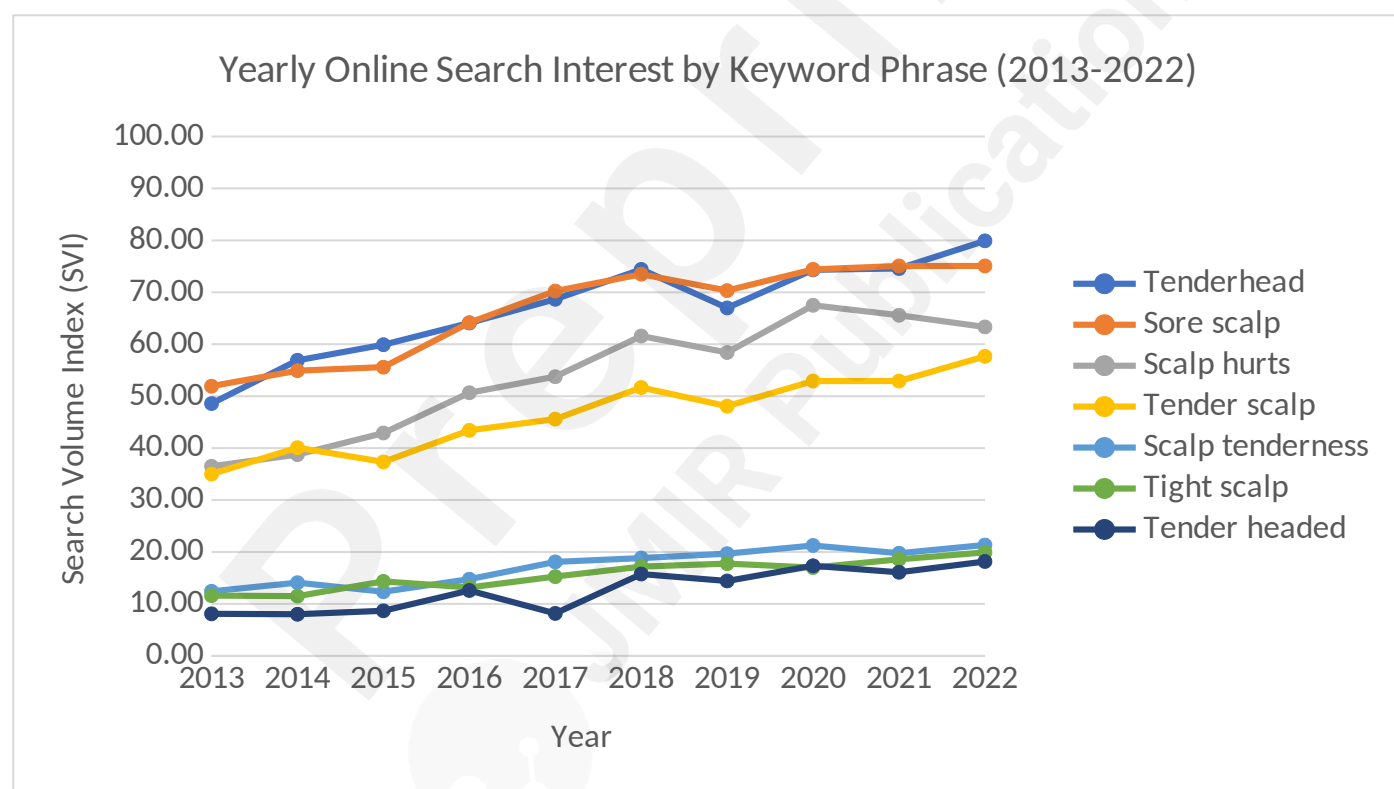CCCA: Central Centrifugal Cicatricial Alopecia
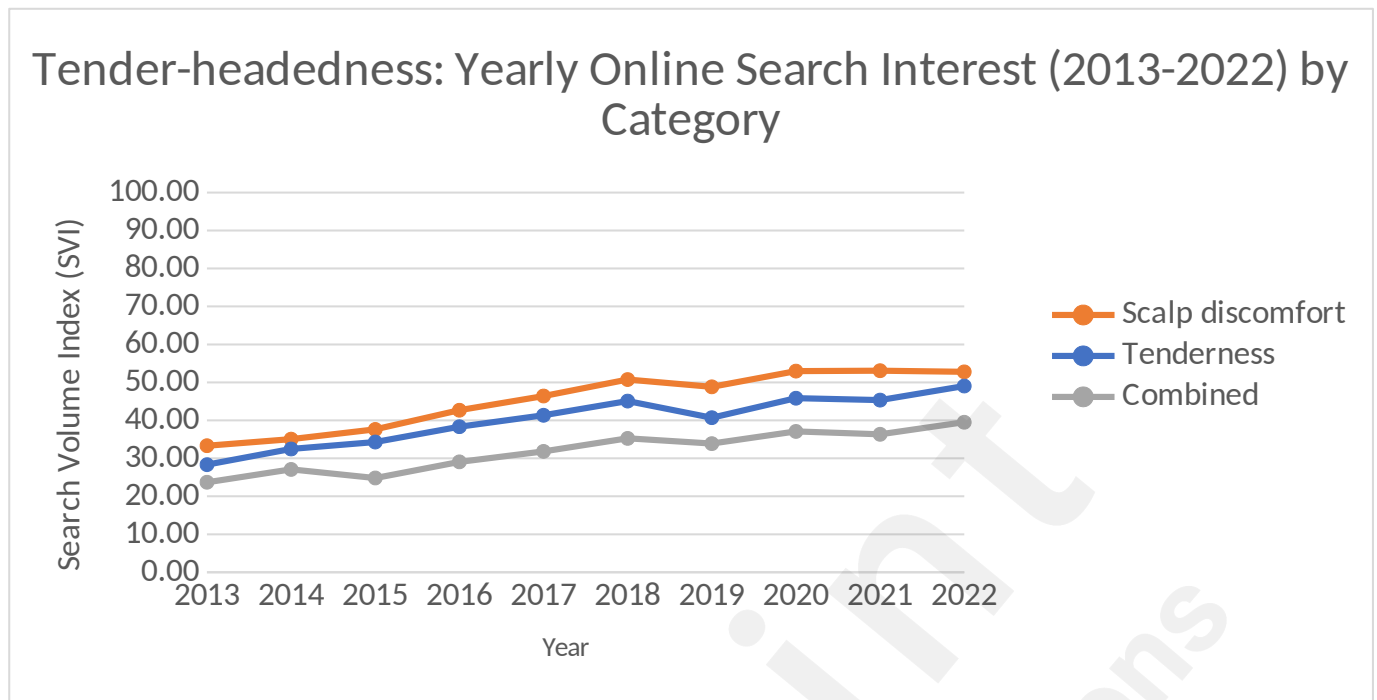
TA: Traction Alopecia

Figure 1

Figure 2