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Popularity of Infrared Saunas and Potential Dermatologic Risks: A Google Trends Analysis

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To the Editor,

There has been increasing interest regarding infrared saunas (IS), as an alternative to traditional warmed air saunas which utilize wavelengths within the infrared spectrum in an effort to improve user tolerability^{1,2}. Three subtypes of IS have emerged based on wavelength:

- near-infrared (0.7–1.4 μm)
- mid-infrared (1.4–3.0 μm)
- far-infrared (3.0–100 μm)².

Infrared rays penetrate the skin deeper than warmed air, thus increasing perspiration despite lower temperatures¹. Because IS causes skin irradiation exposure, questions of safety arise. We have used Google Trends to evaluate public interest in IS and comment on the extent of literature on IS safety.

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Google Trends

Google Trends is a publicly available tool allowing users to query relative search volumes of keywords in Google search engine over a time period. This data can be applied with geospatial analysis to further stratify search volumes regionally. We utilized Google Trends to evaluate the relative popularity of the search term “infrared sauna” from 01/01/04–01/01/23 within the United States.

Results

There was over a five-fold relative increase in search volume of “infrared sauna” between 2004 and 2023 (Figure 1). We also populated search trends for related keywords: “skin aging”, “light therapy”, and “infrared sauna benefits” (Fig. 1). While “skin aging” and “light therapy” demonstrated parallel increasing interest over time similar to “infrared sauna”, there was not enough available trend data for “infrared sauna safety” to be generated.

Google Trends geospatial analysis reported the top three states with the greatest relative search volume for “infrared sauna” were Rhode Island, Maine and District of Columbia in 2004 (Fig. 2). In 2023, the top three states became South Dakota, Montana and Rhode Island (Fig. 2). Geospatial analysis in 2023 also revealed that all U.S. states inclusive of District of Columbia had search traffic for “infrared sauna” compared to only 16 states in 2004. A Google search of “infrared sauna” was then performed in “incognito mode”, and results from the first 10 pages were analyzed for claims regarding IS and skin benefits. 23 non-medical sources claimed skin clarity, purification, pore clearing and decreased acne benefits; 9 claimed benefits for rashes (eczema, psoriasis) and wound healing. (Supplemental Material A) Notably, there were 38 claims of detoxification from spas/sauna studios, 5 from sauna retailers and 4 from media sites. Of the 4 medical sources found in the results, none claimed any evidence-based skin benefits of IS. A literature search performed in PubMed did not result in any studies specifically examining IS skin benefits and safety. (Supplemental Material B)

Conclusions

There are a wide range of claims and purported dermatologic benefits of IS, such as cleansing and clearing benefits, that have not been validated in the limited literature, and there is unclear characterization of potential dangers to skin. Our study shows that IS has garnered public interest in recent years and that there exists substantial digital claims about alleged skin health benefits in the absence of rigorous evidence. As a result, studies elucidating dermatologic risks of IS should be conducted to correspond with increasing interests.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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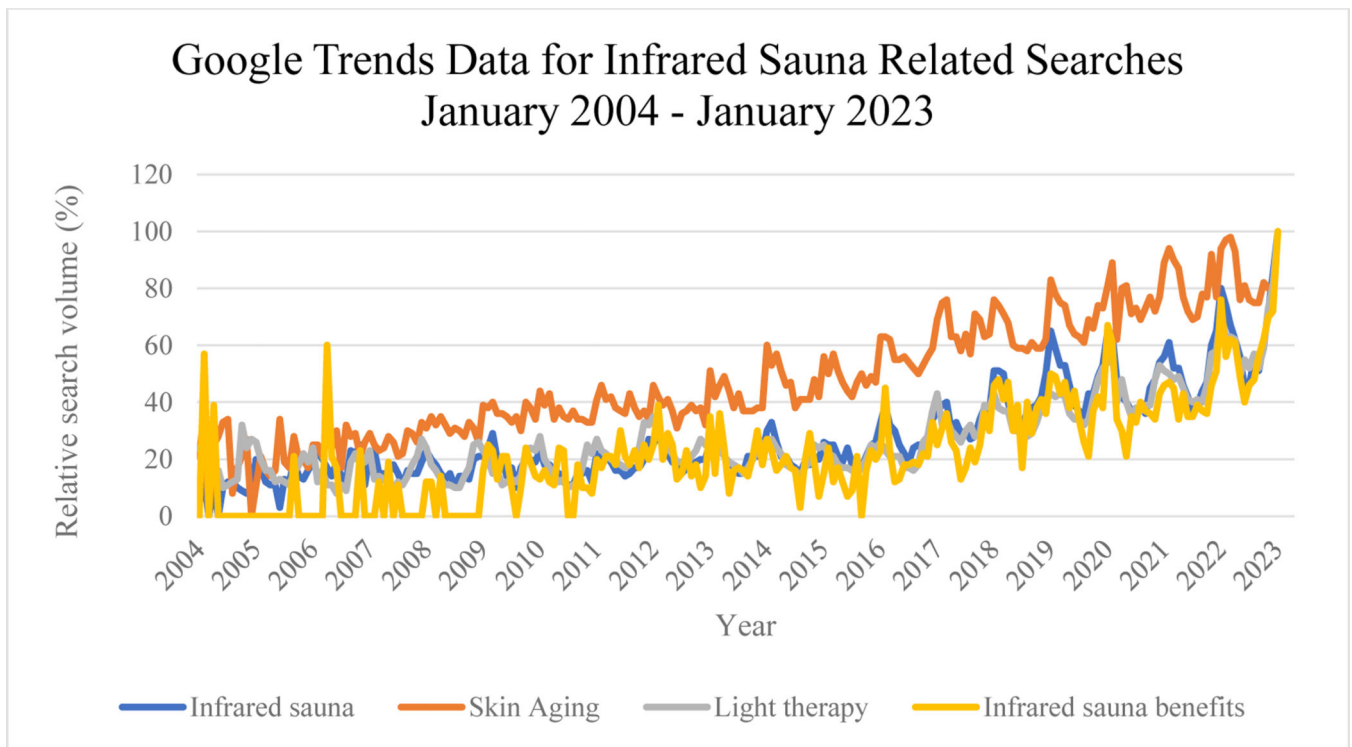


Figure 1. Google Trends search results from January 2004 to January 2023 for “infrared sauna”, “skin aging”, “light therapy”, “infrared sauna benefits”.

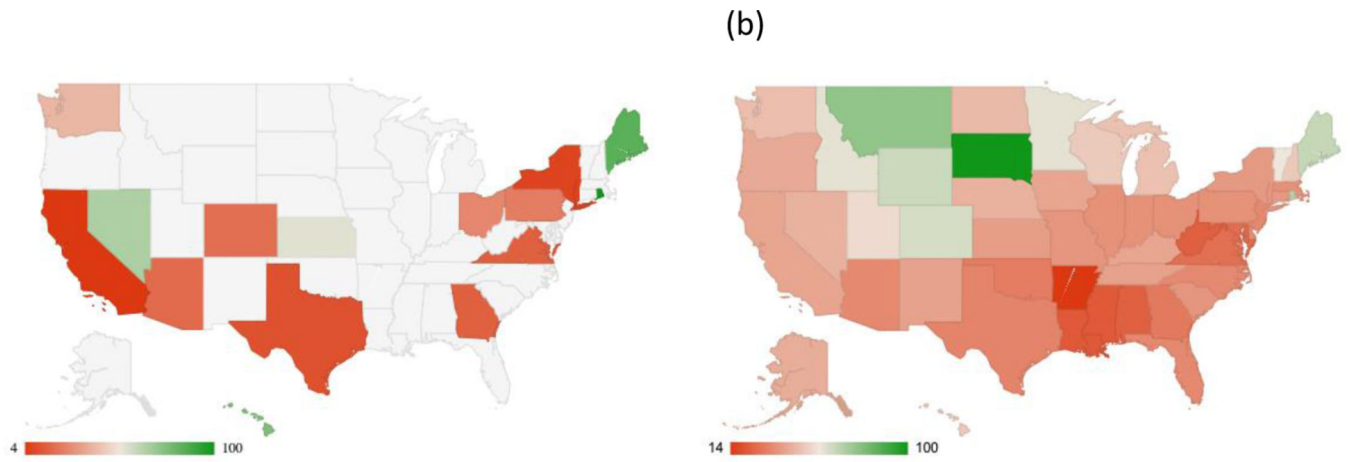


Figure 2. Relative search popularity of “infrared sauna” by state in January 2004 (a) and January 2023 (b).