

LGBTQ+ Dermatological Trends Linked to United States Societal Events: An Interrupted Time Series Analysis

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INTRODUCTION

Roughly 20 million United States (US) adults identify as LGBTQ+,¹ facing healthcare inequities, including within dermatology, where elevated incidences of sexually transmitted infections (STI) and impediments to healthcare access persist.^{2,3} Due to apprehensions about discrimination, sexual and gender minorities (SGM) may resort to online search engines for self-diagnostic purposes.⁴ However, the interplay among skin diseases, SGM, and societal influences remains under-researched.

Historical junctures, from the HIV/AIDS crisis to reclassifications in mental health by the American Psychological Association (APA), have molded societal perceptions regarding the LGBTQ+ community, with a pronounced impact on Generation X.⁵ Likewise, the Obergefell vs Hodges ruling in June 2015, which legalized gay marriage, stands as a potential influencer for the current generation, playing a role in shaping their health-seeking behaviors.

Search data, like Google Trends' relative search volume (RSV), have proven instrumental in comprehending disease awareness within marginalized communities.⁶

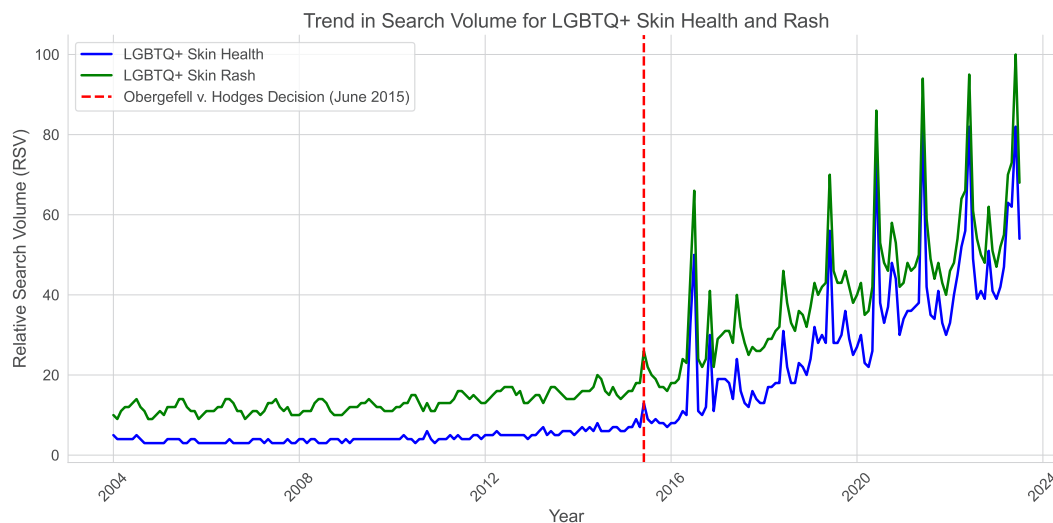
This study aims to elucidate the intricate dynamics between major US societal events, specifically the Obergefell vs Hodges ruling, and the impact on the dermatological interests of the LGBTQ+ community.

MATERIALS AND METHODS

US Google Trends data from January 2004 to July 2023 was extracted to analyze Relative Search Volumes (RSV) for "LGBTQ+ Skin Rash" compared to "Skin Rash." An Interrupted Time Series Analysis (ITSA), using Python 3.9.13, examined the effects of the June 2015 Obergefell vs Hodges ruling on search patterns and its interactive effects with June Pride Month.

The "LGBTQ+ Trends ITSA," regression model employed the formula: $Y = \beta_0 + \beta_1 \times \text{Time} + \beta_2 \times \text{Intervention} + \beta_3 \times$

FIGURE 1. Monthly RSV for LGBTQ+ skin health and skin rash in the US from 2004 to present



PostTime + $\beta_4 \times \text{PrideMonth} + \beta_5 \times (\text{Intervention} \times \text{PrideMonth}) + \varepsilon$. 'Intervention' is coded as 0 before and 1 after June 2015, capturing the ruling's impact, while "PostTime" measures the time since the event.

The model's coefficients β_0 to β_5 represent the initial search volume, temporal trend, immediate effect of the ruling, post-ruling trend, Pride Month's effect, and the interaction between the ruling and Pride Month, with ε as the residual error.

RESULTS

Post-Obergefell vs Hodges, "LGBTQ+ Skin Rash" searches saw a significant long-term increase (PostTime $\beta = 0.40035$, $P < 0.001$), markedly amplified during Pride Month (interaction $\beta = 27.04433$, $P < 0.001$; $\beta = 26.96815$, $P < 0.001$, respectively). The ruling's immediate impact on search volumes was not significant.

Pride Month's effect showed an upward trend for "LGBTQ+ Skin Rash" ($P = 0.0545$), and was notably significant for "Skin Rash" ($P < 0.0001$), indicating a distinct increase in searches during this event.

DISCUSSION

Our analysis post-Obergefell vs Hodges reveals a pronounced shift in online search behaviors, underscoring the profound impact of significant socio-political events on the health-seeking tendencies of the LGBTQ+ population. The ruling's coincidence with Pride Month may amplify its impact on public awareness and interest in LGBTQ+ health issues.

The notable surge in searches related to LGBTQ+ dermatological concerns post-ruling signifies a broader shift in the national consciousness. This phenomenon implies that legislative changes and ensuing national dialogue, especially during Pride Month, possess the potential to shape public opinion and influence health-related interests and behaviors within the LGBTQ+ community and even broader society.

The spike in search metrics for LGBTQ+ specific dermatological terms post-decision indicates dual trends: an elevated awareness of dermatological issues specific to the LGBTQ+ community and an increasing curiosity about the intersection of LGBTQ+ identities, skin health, and associated lifestyle factors.

Understanding the drivers behind these search trends can inform future LGBTQ+ health campaigns and guide interventions to enhance dermatological care.

Our study is limited by the absence of absolute search volumes.

DISCLOSURES

Dr John Zampella serves as Co-Chair for the AAD LGBTQ ERG and is a consultant for Janssen Pharma, Ferndale Pharma, and Dermavant. The other authors have no conflicts of interest to disclose.

Data availability statement: Data is available upon requisition.

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