

An Analysis of Internet Searches for Peripheral Nerve Stimulation using Google Trends Data from 2014 to 2023

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INTRODUCTION

- With the rising incidence of opioid-related deaths and the ongoing opioid crisis, there is an increasing emphasis on non-opioid analgesia options, such as Peripheral Nerve Stimulation(PNS), which is gaining traction among pain physicians.
- As patients with chronic pain seek alternative pain management solutions, many turn to the Internet for information.

STUDY GOAL

This study aims to examine trends in public interest in PNS by analyzing Internet search behavior over the past decade using Google Trends data

Methods

- Google Trends data from the United States were queried for the 10-year period from 2014 to 2023 and average relative search frequencies(RSF) were retrieved for the terms
 - Peripheral Nerve Stimulation
 - PNS
 - Stimulation Peripheral Nerve
 - Peripheral Nerve Stimulation
- Top related search terms, as well as search terms with the highest increase in search frequency during the 10-year period, were also retrieved and reviewed.
- **Statistical Analysis:** ANOVA and linear regression tests were employed to analyze these trends

Figure 1: Average Relative Search Frequency for Peripheral Nerve Stimulation Google searches from 2014-2023

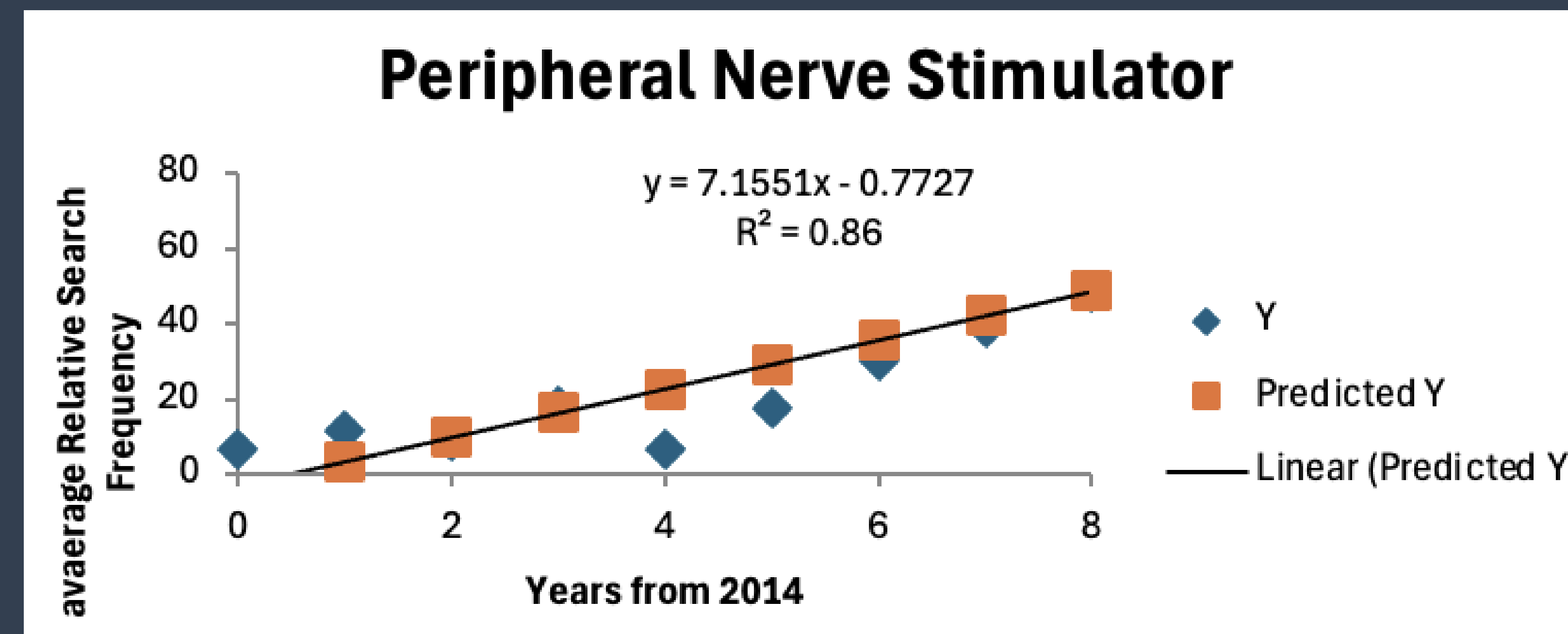
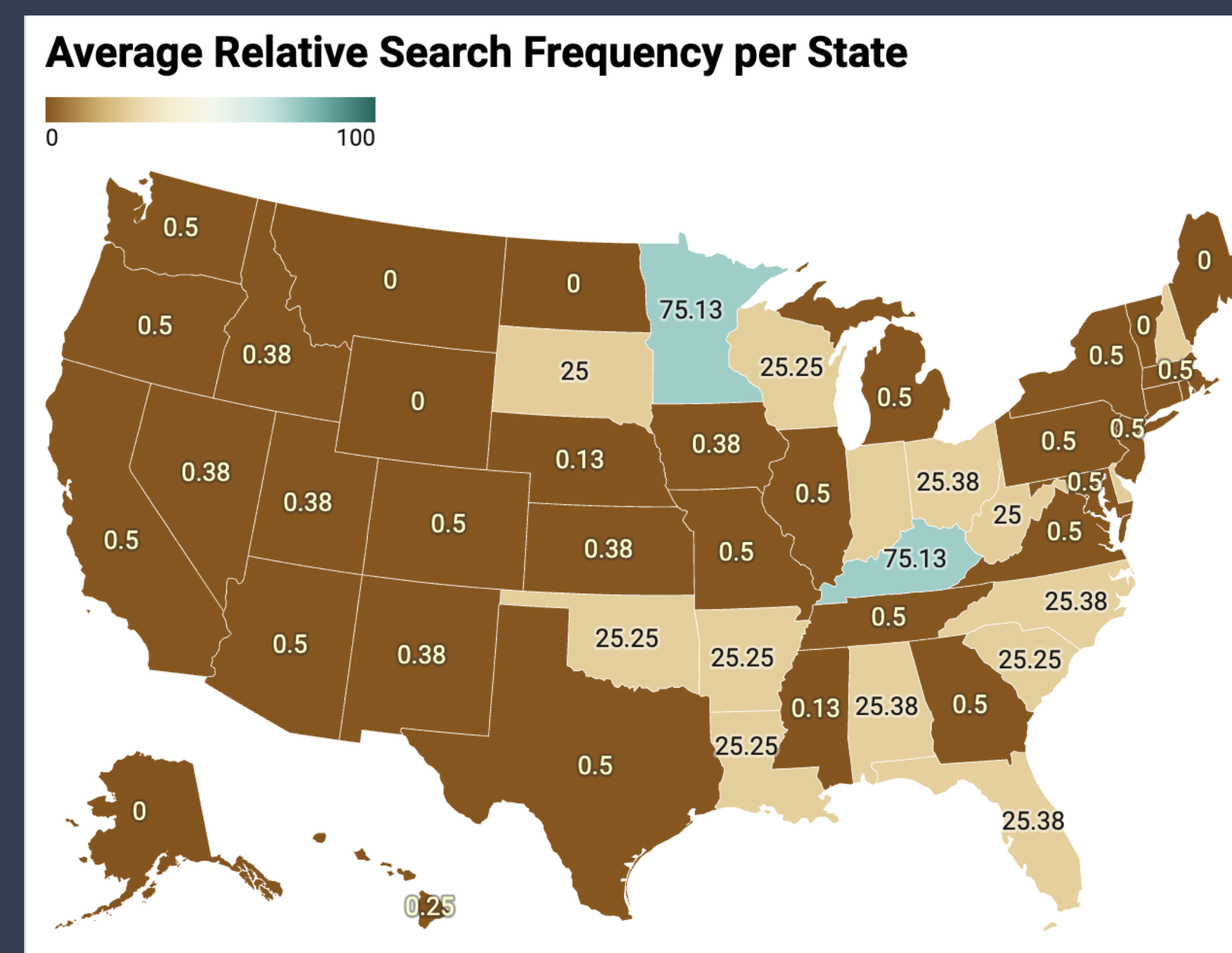


Figure 2: Average Relative Search Frequency of Peripheral Nerve Stimulators by State



Results

- Over the past decade, there has been a significant increase in searches related to PNS ($p < 0.01$, Figure 1).
- The states with the highest RSF for PNS were Minnesota (75.13), Kentucky (75.13), Ohio (23.38), North Carolina (23.38), and Florida (23.38).
- Conversely, the states with the lowest RSF (0) were Alaska, Maine, Montana, North Dakota, and Rhode Island (Figure 2).
- Topics that have seen the greatest increase in search interest over the past decade include the effectiveness, implementation techniques, complications, side effects, safety, cost, and duration of pain relief associated with PNS.

Conclusion

- The study reveals a significant upward trend in public interest in PNS over the past decade. This increase correlates with notable advancements in pain medicine, highlighting the influence of medical innovations and public education on search behavior.
- These findings underscore the importance of ongoing efforts to enhance patient awareness and provide comprehensive information about PNS.
- Such proactive measures can bridge knowledge gaps and support patients in making informed decisions about their pain management options.
- Additionally, further research should be conducted to assess the readability of the available online materials on PNS to determine if quality information is available for patients of varying health literacies.

References

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