PREDICTORS OF GOOGLE SEARCH RANKINGS FOR SPINE SURGEONS: AN ANALYSIS OF ACADEMIC PEDIGREE, SOCIAL MEDIA PRESENCE, AND PATIENT RATINGS

Neha Siddiqui, MS¹; Ryan G. Chiu, BS¹; Rown Parola, MS¹; Ankita Nallani, BS¹; Georgia Glastris, MS¹; Abdullah Bheri, BS¹; Miloni Shah¹; Mandana Behbahani, MD¹; Ankit I. Mehta, MD, FAANS¹
Disclosure

I do not have any financial or organizational relationships with commercial interests or other entities. I hereby certify that to the best of my knowledge, no aspect of my current personal or professional circumstances places me in the position of having a conflict of interest with my duties, responsibilities and exercise of independent judgment as an Educational Presenter for AANS.
Patients increasingly rely on online search in selecting healthcare providers. When choosing a spine surgeon, patients typically value surgical skill and experience as well as demeanor and bedside manner. It is unclear whether current search engine ranking algorithms reflect these preferences.
Methods

A Google.com search for the top 25 spine surgeon websites by search ranking was conducted for each of the largest 25 American cities. Resulting websites were then perused for academic pedigree, experience, and practice characteristics. Surgeons’ research output and impact were then quantified via number of publications and H-index. Online ratings and followers in various social media outlets were also noted. These variables were assessed as possible correlates of search ranking via linear regression and multivariate analyses of variance.
Results

A total of 625 surgeons were included. Three categorical variables were identified as significant correlates of higher mean Google search ranking – orthopaedics (vs. neurosurgery) as a surgical specialty ($p=0.023$), board certification ($p=0.024$), and graduation from a top 40 residency program ($p=0.046$). Although the majority of the identified surgeons received an allopathic medical education, there was no significant difference in the mean rank of surgeons who had an MD vs. DO medical degree ($p=0.530$). Additionally, none of the continuous variables collected, including years in practice ($p=0.947$), publications ($p=0.527$), H-index ($p=0.278$), social media following such as on Facebook ($p=0.105$), or online ratings such as on Healthgrades ($p=0.080$), were significant correlates of Google search ranking.
Discussion

- 59% of U.S. adults have resorted to online resources for health information; within this group, 80% began at a general search engine when looking online for health information.\(^1\)
- Google has the largest market share of all search engines, with 63.2% of core and 93% of mobile search queries in the United States.\(^2\)
- Results generated from a Google search pertaining to spine surgeons in a specific metropolitan area, can influence the selection of a physician by a potential patient\(^3\).
- Neurosurgical residency training has increased emphasis on both surgical excellence and scientific advancement in the field of spinal surgery, overlapping with orthopedic surgery.\(^4\)
- One can postulate that since the higher search rankings for orthopedic practitioners contradicts patient preference for neurosurgeons in previous studies, this may reflect an effort by orthopedic surgeons to counterbalance stated patient preference.
- The lack of correlation between medical school prestige and Google search rankings is consistent with the absent correlation between medical school USNWR ranking and patient outcomes.\(^5\)
- The insignificance of social media followers on spine surgeon Google rank contrasts with a study of plastic surgeons, which concluded that the biggest correlate of front page placement was the total number of followers on social media.\(^6\)

Limitations of the Current Study

- Google search results are influenced by location, previously saved cookies, and cache data associated with a search query.
  - existing cookies and cache data cleared from the browser
  - searches conducted from the author’s institution using a virtual private network (VPN) connection based out of Zürich, Switzerland.

- The Google search may change in ways that alter the search ratings presented.
  - To limit the influence of these changes, searches were performed between May 25 and May 29, 2019.
Summary

Google search rankings currently promote orthopaedic over neurosurgical specialists, graduation from a top residency program and board certification, while largely ignoring academic pedigree, research, social media presence, and online ratings.
References


