Ten Years Of Motion: Growing Patient Interest In Total Knee Arthroplasty During The Last Decade

Irfan Ali Khan[1], Jonathan Jacob Abraham, Christopher Bloise, Saad Siddiqui, Andrew Genius Chapple, Vinod Dasa
[1]Department of Orthopaedic Surgery

INTRODUCTION: Total knee arthroplasty (TKA) is being performed at increasing volumes annually. However, it is unknown whether patients have increasing interest in TKA, and what patients most commonly query online regarding TKA. Google Trends provides the relative search volume [RSV] for Google search terms. Therefore, we conducted this study with Google Trends to identify whether public interest in TKA has increased during the past decade, and what search terms regarding TKA have the most patient interest.

METHODS: A retrospective longitudinal study on public interest in TKA was conducted from January 2013 – December 2022 in the United States utilizing Google Trends. Through utilizing ChatGPT, one arthroplasty fellowship-trained orthopedic surgeon and two orthopaedic residents identified questions that may arise perioperatively from patients considering TKA and included 50 Google search terms, for which the mean RSV was obtained and compared. Ranging from 0 – 100, the RSV represents interest in a keyword during at a specific point during the selected timeframe; 0 indicates minimal interest while 100 indicates peak interest. *Analysis of Variance Tests* were used to compare means and statistical significance was set at a p-value less than 0.05.

RESULTS: Between 2013 – 2022, the mean RSV for "knee replacement" significant increased (2013: 51; 2022: 95; p < 0.001), representing increasing patient interest in TKA (Figure 1). Amongst 50 search terms about TKA, "knee replacement pain" and "knee replacement recovery" had significantly higher mean RSVs than other terms, while "knee replacement cost", "knee replacement therapy", "knee replacement swelling", "how long does knee replacement take", "knee replacement infection", "bilateral knee replacement", "knee replacement scar", and "robotic knee replacement" were also amongst the ten search terms with the highest mean RSV (67 vs 66 vs 21 vs 19 vs 11 vs 8 vs 8 vs 7 vs 5 vs 4; p < 0.001) (Figure 2). The mean RSVs increased significantly over time for "knee replacement pain" (2012: 45; 2022: 95; p < 0.001) and "knee replacement recovery" (2012: 48; 2022: 83; p < 0.001).

DISCUSSION AND CONCLUSION: Patient interest in TKA has significantly increased during the past decade. Patients are interested in a wide range of topics regarding TKA, with pain and recovery being the most frequently searched and growing topics. Additionally, topics such as cost, therapy, surgical length, complications, scars, and robotic assistance were also popular. Patient education materials should include the aforementioned topics to provide patients with patient-centered information regarding TKA.