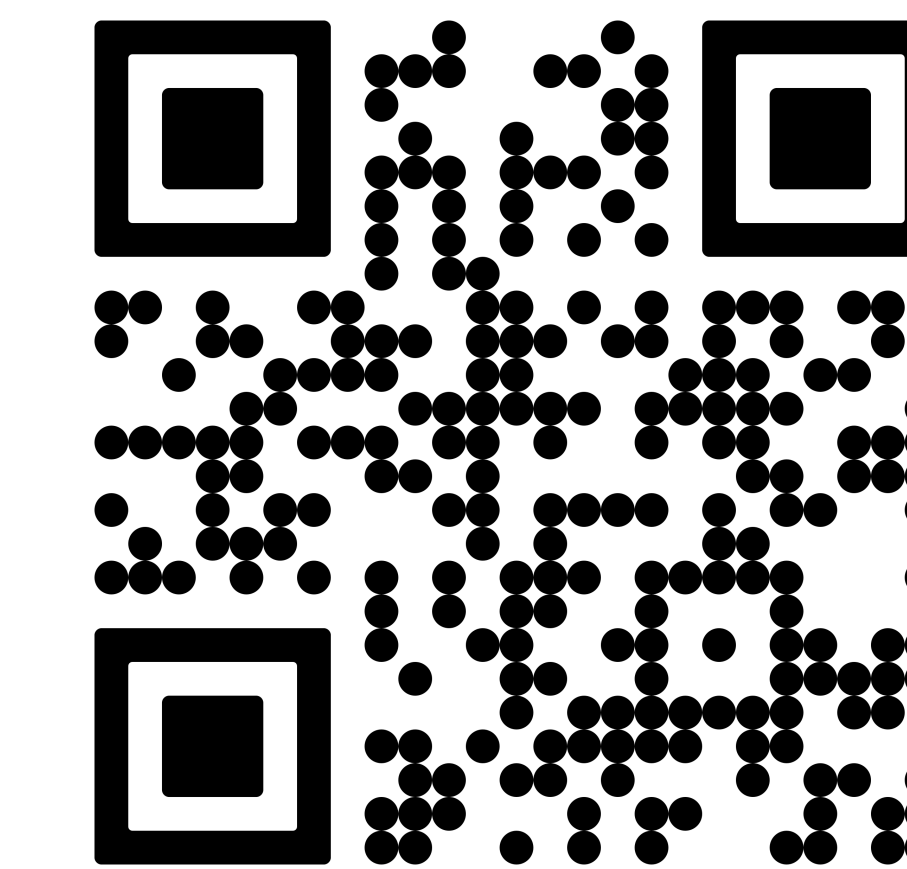




# What are patients asking about shoulder arthroplasty? An investigation of Google Searches



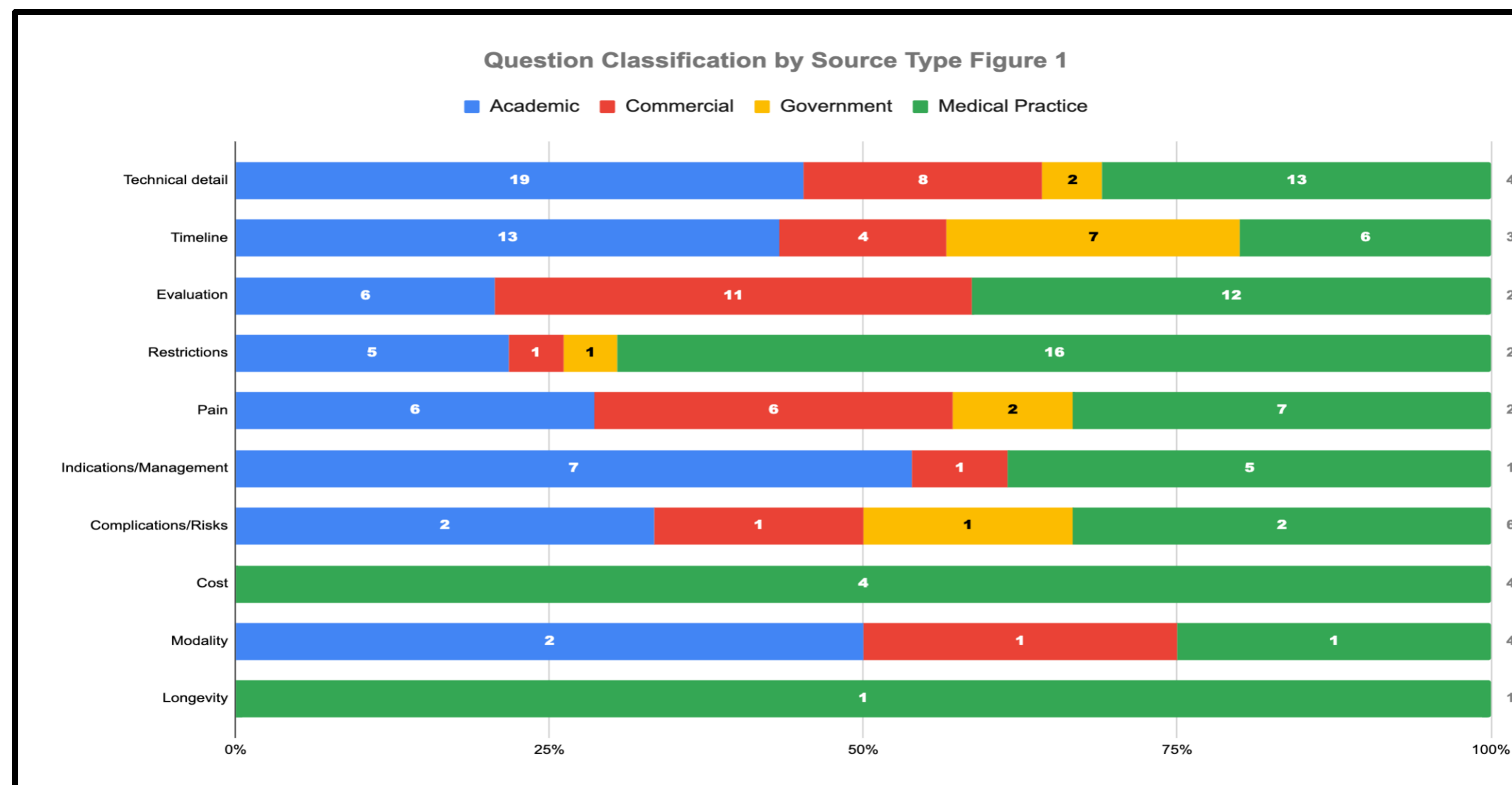
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## INTRODUCTION

The utilization of shoulder arthroplasty has been increasing steadily over the last few decades.<sup>1</sup> Given this continuous increase, we expect that patients will increasingly search the internet for sources of information regarding shoulder arthroplasty. The primary objective of this study is to characterize the content of the most frequently asked questions (FAQs) regarding shoulder arthroplasty. The secondary objective is to assess both the quality and transparency of the suggested information for shoulder arthroplasty.

## METHODS

On October 9th, 2022 the following search terms were searched using Google “shoulder arthroplasty”, “total shoulder arthroplasty”, “reverse shoulder arthroplasty”, and “reverse shoulder surgery.” For each search, the “people also ask” function was queried until a minimum of 200 FAQs were generated for each search term. All FAQs were classified using the Rothwell Classification. All sources were assessed for transparency using JAMA Benchmark and quality with the Brief DISCERN tool.<sup>2,3</sup>



## RESULTS

Our search returned a total of 1275 FAQs. After removing duplicates and unrelated FAQs our included sample size was 173. Fact questions were the most common classification type (102/173, 59%) followed by value questions (52/173, 30%) and policy questions (19/173, 11.0%). The most common fact questions were related to technical details (42/103, 40.7%). Medical Practices (67/173, 38.7%) were the most encountered source type followed by Academic sources (60/173, 34.6%). Both Academic and Medical Practices were associated with poor transparency (Table 1.). The one-way analysis of variance (ANOVA) revealed a significant difference in mean quality scores among the 5 source types (F = 18.6, P <.001) with Medical Practices averaging the lowest score (16.1/30) . (Table 1)

## CONCLUSION

Patients seeking online information for shoulder arthroplasty appear to search Google for questions related to a plethora of technical details and restrictions. The most common source type encountered by patients are those of Medical Practices; these were found to have both poor quality as well as poor transparency as measured by JAMA Benchmark and Brief DISCERN. Moving forward, medical practices should use validated tools as guidance for increasing the transparency and quality of the medical information they publish online. Physicians should know that their patients may be informing themselves about shoulder arthroplasty risks and management with low quality internet sources. Our findings reinforce the importance of well informed, evidence-based patient counseling before and after shoulder arthroplasty.

## References

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|                       | Source Type     |                   |                   |                         | Total n= 173   | Chi-Square (DF = 3), P        |
|-----------------------|-----------------|-------------------|-------------------|-------------------------|----------------|-------------------------------|
|                       | Academic n= 60  | Commercial n= 33  | Government n= 13  | Medical Practice n= 67  |                |                               |
| <b>JAMA Benchmark</b> |                 |                   |                   |                         |                |                               |
| ≥3                    | 28              | 29                | 5                 | 10                      | 72             | <b>50.71, P &lt;.001</b>      |
| <3                    | 32              | 4                 | 8                 | 57                      | 101            |                               |
| <b>Authorship</b>     |                 |                   |                   |                         |                |                               |
| No                    | 47              | 7                 | 5                 | 57                      | 116            | <b>49.51, P &lt; .001</b>     |
| Yes                   | 13              | 26                | 8                 | 10                      | 57             |                               |
| <b>Attribution</b>    |                 |                   |                   |                         |                |                               |
| No                    | 31              | 9                 | 5                 | 63                      | 108            | <b>52.06, P &lt;.001</b>      |
| Yes                   | 29              | 24                | 8                 | 4                       | 65             |                               |
| <b>Currency</b>       |                 |                   |                   |                         |                |                               |
| No                    | 27              | 1                 | 0                 | 34                      | 62             | <b>31.37, P &lt;.001</b>      |
| Yes                   | 33              | 32                | 13                | 33                      | 111            |                               |
| <b>Disclosure</b>     |                 |                   |                   |                         |                |                               |
| No                    | 0               | 0                 | 0                 | 1                       | 1              | 1.59, P =.66                  |
| Yes                   | 60              | 33                | 13                | 66                      | 172            |                               |
| <b>Brief DISCERN</b>  | <b>Academic</b> | <b>Commercial</b> | <b>Government</b> | <b>Medical Practice</b> | <b>Average</b> | <b>ANOVA</b>                  |
| Score (mean; SD)      | 20.53 (6.26)    | 24.12 (4.74)      | 23.38 (5.56)      | 16.10 (5.29)            | 19.72 (6.37)   | <b>F = 18.57, P &lt; .001</b> |