

Editorial Commentary: The Top Cited Rotator Cuff Repair Articles: It's All About Popular



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Abstract: The Thomson Institute for Scientific Information Web of Science database was used to rank the top 50 articles regarding rotator cuff repair by number of citations received. Although the number of citations is a useful benchmark, it must be taken as only one of many indices of the value of an article to the study of orthopaedics. The most cited articles are out of date, reflecting that a longer time in publication allows more time for citation, and most have low levels of evidence (Level IV, retrospective case series absent a control group).

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It's not about aptitude, it's the way you're viewed,
So it's very shrewd to be very very popular...

Stephen Schwartz

In Stephen Schwartz's lyric for the song "Popular," the ever-enterprising Galinda takes it upon herself to remedy the faults she perceives in Elphaba, the famously less-than-attractive green member of their school.¹ The tongue-in-cheek listing of what makes one "popular" has lost none of its sting since the musical *Wicked* opened in 2003.

Familiari, Castricini, Galasso, Gasparini, Iannò, and Ranuccio,² in their article entitled "The Fifty Highest Cited Papers in Rotator Cuff Tear," performed a systematic review to assess the most cited studies on the subject of rotator cuff repair, with the conclusion that "this article list provides clinicians, researchers, and trainees with a group of articles that should be taken into consideration as building blocks in the RCT [rotator cuff tear] field." The mechanism used to establish the ranking of the studies and number of citations was similar to that in an article on a similar topic by Kraeutler et al.,³ cited by the authors, that was published 4 years earlier and differed only in a single word for the citation search, using "rotator cuff repair" instead of "rotator cuff

tear." Both articles used the Thomson Institute for Scientific Information Web of Science (Clarivate Analytics) to identify citations. Not surprisingly, 3 of the top 5 cited studies were identical in both articles. Perhaps surprisingly, however, neither article cited a "most cited" study published after 2011, possibly reflecting the fact that it takes time to be cited rather than indicating a paucity of decent literature in the past 9 years. Both articles identified that the bulk of these cited studies were Level IV retrospective case series.

The real question is whether the number of citations is a valid means to establish the quality and influence of an orthopaedic article—or more just a measure of how popular it is. Certainly, some authors of famously unpopular studies have ultimately been recognized for the insight they contributed to medical care. Perhaps most unfortunate was Ignaz Semmelweis, who first published the now widely accepted notion that hand washing prior to entering the labor and delivery room would dramatically decrease cases of puerperal fever. None of his colleagues accepted this then-revolutionary insight. "In 1865, the increasingly outspoken Semmelweis supposedly suffered a nervous breakdown and was committed to an asylum by his colleagues. He died 14 days later after being beaten by the guards, from a gangrenous wound on his right hand which might have been caused by the beating."⁴ Although not institutionalized by their colleagues, neither Michael Burman, the father of arthroscopy,⁵ nor Ernest Codman, author of *The Shoulder: Rupture of the Supraspinatus Tendon and Other Lesions in or About the Subacromial Bursa*,⁶ received the number of initial citations their groundbreaking work deserved. In contrast, other studies are cited far

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The author reports no conflicts of interest in the authorship and publication of this article. Full ICMJE author disclosure forms are available for this article online, as [supplementary material](#).

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0749-8063/201584/\$36.00

<https://doi.org/10.1016/j.arthro.2020.09.027>

out of proportion to the work or validity of the scientific concepts. The abstract published by Bigliani et al.⁷ describing type I, II, and III acromions is probably one of the most widely cited classifications in the orthopaedic literature and yet was never published in a peer-reviewed journal afterward. McLean and Taylor⁸ recently noted, “Taken together, the interobserver reliability of the Bigliani classification of acromial morphology as reported by multiple studies is fair at best, regardless of level of expertise and training, and as such it should not be used to facilitate communication by orthopaedic surgeons, radiologists, or researchers.” Although I reluctantly admit to classifying more than a few scapular lateral films in this fashion, the role of acromial morphology as causal to rotator cuff tears has been increasingly discredited.

At the end, there is no simple tool to establish what articles will be “building blocks” in any scientific field. The benchmark for clinical studies, to my mind, remains the prospective, randomized study. This was never more evident than the Neer Award—winning article by Montgomery et al.⁹ that overturned scores of studies published (and cited) on the value of arthroscopic debridement alone for the treatment of rotator cuff tears. Neither Familiari et al.² nor Kraeutler et al.³ listed the article by Montgomery et al. in their top 50. Even prospective, randomized studies can have unanticipated biases and, perhaps most important, take years to complete, at which time the questions asked by the study can be irrelevant. Unfortunately, the “benchmarks” for rotator cuff research will be evaluated hopefully on a number of levels, and it must be accepted that these benchmarks will change as science develops better data on the topic. Although all of us appreciate being cited, this is not perhaps the best

benchmark for identifying landmark studies, despite the satisfaction of seeing one’s name in print. Or, as Galinda sang, “And though you protest your disinterest, I know clandestinely you’re gonna grin and bear it: your new-found popularity!”¹

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