

The Open Access Publication Advantage: Attention and Citation Patterns in Rotator Cuff Tear Research

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INTRODUCTION:

Rotator cuff tears are a common injury, affecting 20% of people over the age of 50. Extensive research has investigated this condition, with findings published in major orthopaedic journals. However, not all articles are equally accessible. Open access articles allow free viewing, while closed access articles require subscription or purchase. The goal of this study was to compare randomized control trials (RCTs) on rotator cuff tears in open verses closed access articles by examining differences in attention scores, media mentions, and citation frequency. The study hypothesis was that closed access articles requiring a paid subscription would have a higher citation rate.

METHODS: A PubMed search was conducted to identify RCTs on rotator cuff tears. Using the Altmetric Explorer Database, metrics such as Altmetric Attention score (AAS), news mentions, X mentions, Mendeley readers, and Dimensions citations were extracted. A negative binomial regression adjusted for time since publication was used to compare metrics between open and closed access articles.

RESULTS: Of 218 articles analyzed, 38.1% were open access, and 61.9% were closed access. Open access publications had higher costs and significantly higher mean AAS's (42 ± 190.14 vs 15.31 ± 36.47), news mentions (2.56 ± 16.51 vs 0.48 ± 4.37), X mentions (45.48 ± 159.56 vs 18.78 ± 33.32), and Mendeley readers (115.01 ± 113.52 vs 86.71 ± 67.39) compared to closed access publications ($p < 0.05$). However, the mean dimensions citations between open access vs closed access (29.35 ± 45.43 vs 27 ± 26.627) was not significantly different ($p = 0.554$).

DISCUSSION AND CONCLUSION:

The hypothesis was not upheld. Open access articles have higher attention scores while maintaining comparable citation numbers compared to closed access articles. The greater accessibility of open access articles aligns more closely with the goal of scientific research to maximize idea dissemination, supporting the value of open access in advancing orthopaedic research.

Metric	Open Access Mean± SD (N=86)	Closed Access Mean± SD (N=132)	P Value
Almetric Attention Score	42 ± 190.14	15.31 ± 36.474	<0.001*
News Mentions	2.56 ± 16.51	0.48± 4.37	<0.001*
X mentions	45.48 ± 159.560	18.78±33.32	<0.001*
Number of Mendeley Readers	115.01±113.52	86.71±67.39	0.043
Number of Dimensions Citations	29.35±45.43	27± 26.627	0.554

P values were calculated using a negative binomial regression to account for time since publication