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Spin in the Abstracts of Meta-analyses and Systematic Reviews: Quadriceps Tendon Graft for Anterior Cruciate Ligament Reconstruction

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Introduction

- Spin is a reporting bias that misrepresents research and can impact surgeon decision making and patient care.
- Anterior Cruciate Ligament (ACL) reconstruction is common; however, debate continues over the optimal graft choice.
- The quadriceps tendon has become an increasingly popular graft.

Objective

- The purpose of this study was to identify the prevalence of spin in meta-analysis and systematic review abstracts regarding the treatment of ACL injuries with quadriceps tendon graft.

Materials and Methods

- Electronic libraries were searched for meta-analyses and systematic reviews regarding the treatment of ACL tears with quadriceps tendon graft.
- The nine most severe types of spin commonly found in abstracts[1] were used as an evaluation tool to assess the articles.
- Further evaluation included year of publication, number of citations, journal impact factor, and AMSTAR-2 score.

Results

- After review of the 13 articles that met our criteria, it was found that 53.8% (7/13) contained one of the nine most severe forms of spin.
- Of the types of spin evaluated, type 3 spin was found to be the most prevalent (4/13, 30.8%) followed by type 5 (2/13, 15.4%) and type 9 (2/13, 15.4%).
- There was no relationship between the presence or total types of spin versus other evaluated information.

Table 1. Abstracts with Spin.

The Nine Most Severe Types of Spin per Yavchitz et al.[1]

Nine Most Severe Types of Spin	Abstracts With Spin
1. Conclusion contains recommendations for clinical practice not supported by the findings	0 (0%)
2. Title claims or suggests a beneficial effect of the experimental intervention not supported by the findings	1 (7.7%)
3. Selective reporting of or overemphasis on efficacy outcomes or analysis favoring the beneficial effect of the experimental intervention	4 (30.8%)
4. Conclusion claims safety based on non-statistically significant results with a wide confidence interval	1 (7.7%)
5. Conclusion claims the beneficial effect of the experimental treatment despite high risk of bias in the primary studies	2 (15.4%)
6. Selective reporting of or overemphasis on harm outcomes or analysis favoring the safety of the experimental intervention	1 (7.7%)
7. Conclusion extrapolates the review's findings to a different intervention	0 (0%)
8. Conclusion extrapolates the review's findings from a surrogate marker of a specific outcome to the global improvement of the disease	0 (0%)
9. Conclusion claims the beneficial effects of the experimental treatment despite reporting bias	2 (15.4%)

Limitations

- Though spin has been clearly defined, a subjective aspect of determining spin still exists. The authors attempt to mitigate this subjectivity by independently assessing spin and following the predetermined protocol for disagreements.
- Due to our small sample size of 13 studies, the results may underestimate or overestimate the true prevalence of spin in systemic review and meta-analysis abstracts regarding quadriceps tendon graft in ACL reconstruction surgery.

Conclusion

- This study demonstrated the presence of spin in a significant portion (53.8%) of meta-analysis and systematic review abstracts pertaining to quadriceps tendon graft for ACL reconstruction.
- Orthopedic surgeons should learn to recognize spin as they review literature and strict criteria should be considered to reduce the prevalence of spin in orthopedic literature.

References

- 1. Yavchitz, A., Ravaud, P., Altman, D. G., Moher, D., Hrobjartsson, A., Lasserson, T., & Boutron, I. (2016). A new classification of spin in systematic reviews and meta-analyses was developed and ranked according to the severity. *Journal of clinical epidemiology*, 75, 56–65. https://doi.org/10.1016/j.jclinepi.2016.01.020