

Best Methods to Get Your Comparative Effectiveness Paper Cited: How GRACE Helps

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Background

The Good ReseArch for Comparative Effectiveness (GRACE) checklist includes 11 questions on data and methods that can be used to evaluate the quality of observational comparative effectiveness research (CER). The checklist was developed through literature review, expert consensus, and field testing by 113 raters from 5 continents.[†]

Objective

To determine how GRACE checklist questions can be used to predict the number of article citations and journal impact factor.

Methods

Classification and Regression Tree (CART) analysis of GRACE checklist data collected from 56 volunteer assessments of 28 CER articles were used to identify factors predictive of number of article citations per year and journal impact factor in the year the article was published (excluding self-citations). The search for journal impact factor and article citations was performed using Web of Science.

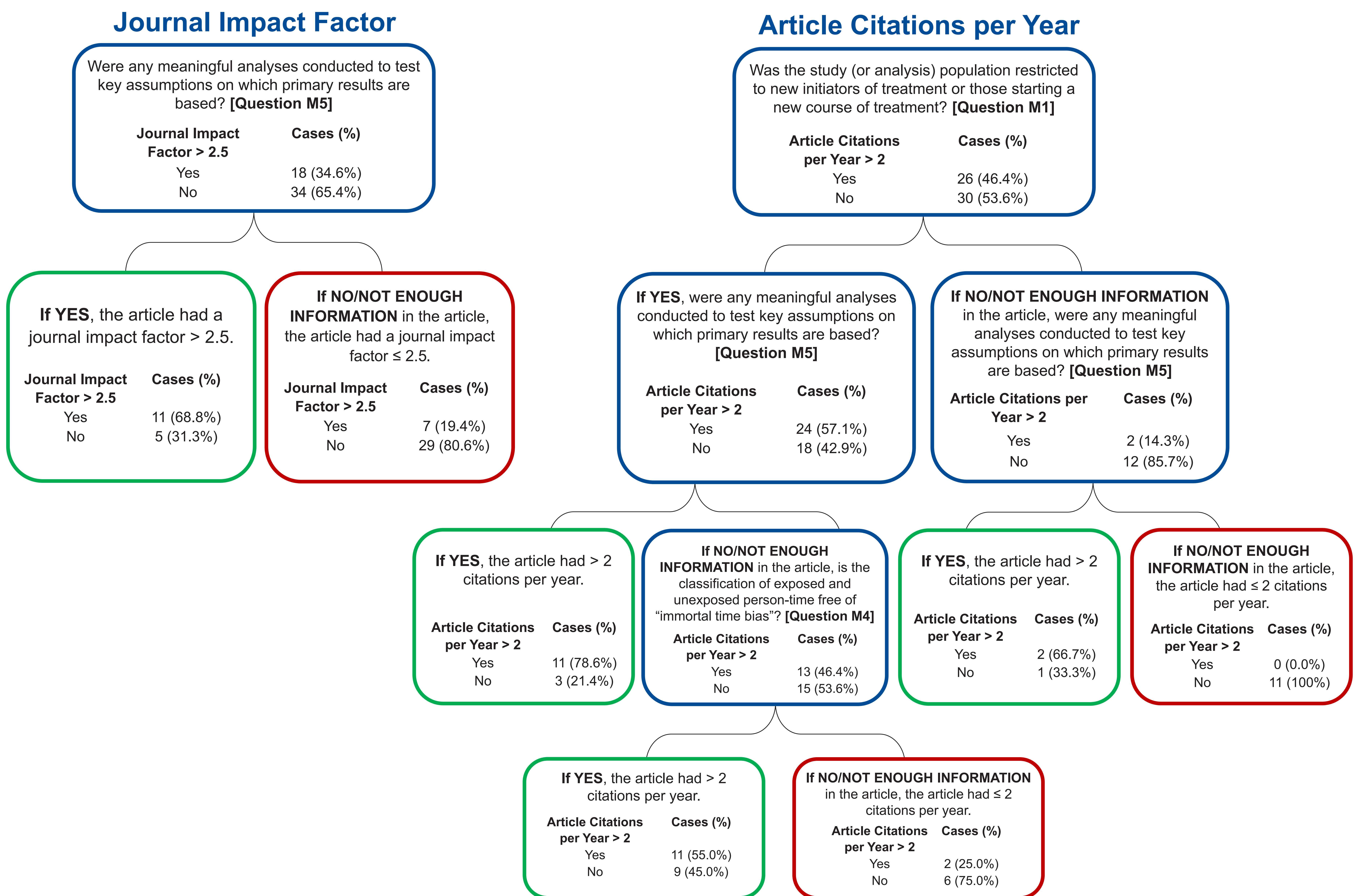
Results

The CART analysis identified three checklist questions (M1, M4, M5) associated with the number of article citations and one checklist question (M5) associated with journal impact factor.

Table 1 presents the results from the best predictive algorithms as identified by CART from GRACE checklist items, as predictors of article citations and journal impact factor. The sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) were all higher for the ability of the selected checklist item(s) to predict journal impact factor than article citations.

Table 1. Performance of CART Algorithms Using GRACE Checklist Items in Predicting Article Citations and Journal Impact Factor

	Journal Impact Factor	Article Citations
Sensitivity	66.7%	50.0%
Specificity	85.3%	63.3%
Positive Predictive Value	70.6%	54.2%
Negative Predictive Value	82.9%	59.4%



Conclusion

Limiting drug studies to new initiators was the single best predictor of high citations, followed by use of sensitivity analysis to quantify the influence of potential bias and absence of immortal time bias. A separate analysis looking at journal impact factor showed that use of sensitivity analysis was the single best predictor of publication in higher impact journals. These examinations help identify the most important items in the GRACE checklist and suggest that indicators of observational research quality are related to the process used by journal editors and researchers in selecting high quality observational studies of CER for dissemination and citation.

[†] Dreyer NA, Velentgas P, Westrich K, Dubois R. The GRACE Checklist for Rating the Quality of Observational Studies of Comparative Effectiveness: A Tale of Hope and Caution. *J Manag Care Pharm.* 2014; 20(3):301-8.