

Assessing Bias in Non-Randomized Studies: A Systematic Review of Evaluation Tools

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Abstract

In the domain of health sciences, quasi-experimental studies are extensively utilized due to their feasibility and cost-effectiveness. However, this design type may introduce biases that potentially affect both the validity of results and the decision-making processes of healthcare professionals. Currently, there is an observed proliferation of tools for assessing the risk of bias in quasi-experimental studies, which complicates the selection of the most appropriate instrument, as each possesses distinct psychometric properties that may influence the accuracy and reliability of the evaluation.

The objective of this study is to analyze and compare the psychometric properties of available tools for assessing the risk of bias in quasi-experimental studies, with the aim of identifying which offers superior precision, reliability, and utility to ensure more robust methodological evaluations.

A systematic review was conducted, encompassing searches in PubMed, CINAHL, Web of Science, and Scopus databases to ensure comprehensive coverage of relevant literature. Furthermore, specialized journals and the bibliographies of included studies were examined to identify additional articles. This process facilitated the identification of a corpus of articles for subsequent analysis.

Data on psychometric properties were extracted from individual studies, including measures such as reliability, validity, and measurement error. Meta-analytic computations were performed where applicable to synthesize findings quantitatively. The results were compared with those from existing meta-analyses to evaluate consistency and robustness.

The potential implications of errors and inconsistencies in this process are analyzed.

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measurement, bias, quasi-experimental studies

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