

# Characteristics of Randomized Clinical Trials in Surgery From 2008 to 2020: A Systematic Review

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This systematic review analyzed 212 randomized clinical trials in surgery from 2008 to 2020, providing valuable insights into key characteristics and potential areas for improvement.

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# Discrepancies in Published Protocols

Discrepancies with the published protocol were identified in 81 trials (33.5%), revealing the importance of adherence to the established protocol.

# Outcome Measures in Trials

## Usage of Major Clinical Events

Only 123 trials (31.7%) used major clinical events as the primary outcome, suggesting room for improvement in outcome measure selection.

# Bias and Risk Assessment

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## Bias Concerns

Most trials (54.4%) had some concern of bias, highlighting the need for robust trial design and implementation to minimize bias.

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## High Risk of Bias

Additionally, 91 trials (23.5%) had a high risk of bias, emphasizing the importance of stringent quality control in surgical trials.

# Sample Size

The trials were generally small, with a median sample size of 122 patients, indicating the need for larger and more representative samples.

# Surgeon's Experience and Trial Intervention

## Surgeon's Experience

Most trials did not adopt any method to control for surgeons' experience (78.1%), suggesting a potential lack of consideration for this crucial factor.

## Trial Intervention Quality

Surprisingly, 95.6% of trials did not assess the quality of the intervention performed, indicating a critical area for improvement in trial reporting and evaluation.

## Details of Trial Intervention

Moreover, 58.2% of trials provided only limited details of the trial intervention, highlighting the need for comprehensive and transparent reporting.

# Blinding and Interpretation Bias

## Lack of Blinding Information

Notably, 33.0% of trials did not report any information about blinding, signaling a potential oversight in trial methodology and transparency.

## Interpretation Bias

In more than half of the 212 trials with neutral results, evidence of interpretation bias was found, emphasizing the importance of unbiased interpretation and reporting of trial outcomes.