

PROTOCOL BRIEF

Review and Assessment of Network Meta-Analyses for Knowledge uptake — RANK Study

Rationale

Clinicians should use the results of knowledge synthesis, such as network meta-analysis (NMA), to inform decision-making. The use of NMAs is increasing in healthcare research due to their ability to facilitate the comparison of many interventions for a clinical condition from a network of trials, and enable the ranking of each intervention according to its effectiveness and/or safety. However, there are no studies evaluating the interpretability of NMA ranking plots.

Implications

RANK will:

- generate new insight about the usefulness of rank-heat and SUCRA plots for key knowledge users including researchers, journal editors and peer reviewers
- directly address the issue of poor knowledge uptake in healthcare research and may provide a solution to improving knowledge uptake by clinicians via a simple, yet innovative plot
- provide findings that may apply to the conduct of all future NMAs evaluating interventions for safety and effectiveness for patients

Clinical Trial Registration:
[NCT03283592](https://www.clinicaltrials.gov/ct2/show/study/NCT03283592)

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Background

- NMAs broaden the scope of pairwise meta-analyses through the simultaneous analysis of both direct comparisons of interventions within trials and indirect comparisons across trials based on a common comparator.
- A promising strategy to present NMA results is the novel rank-heat plot, which allows for the visual presentation of the intervention across multiple outcomes.
- Alternatively, surface under the cumulative ranking (SUCRA) plots provide a visual presentation of intervention ranking for a single outcome.
- No studies have explored how NMA ranking results should be presented to increase interpretability for decision-makers.

Objective

- To evaluate how to present NMA findings to advance the understanding and uptake of NMAs that are used to inform decision-making by clinicians.

Methodology

- RANK is a multiple method study consisting of a randomized controlled trial and an interview study.
- Eligible participants are clinicians accredited to practice in Canada in family medicine or general internal medicine. Participants will be recruited by email through the listserv for various health organizations.
- Randomized controlled trial: A National Research Advisory Panel will develop questions related to the results from a NMA investigating quality improvement strategies for falls prevention. Participants will answer these questions via an online survey according to the NMA plot they are randomized to (i.e., rank-heat or SUCRA).
- Interviews: We will explore participants' perceptions and barriers to the use of NMA plots for presenting NMA results for use in decision-making.
- Our analysis will include:
 - ◇ Summarizing participant data descriptively
 - ◇ Comparing the proportion of correct survey responses based on agreement with our panel ("gold standard"), time taken to complete the survey and survey data completeness
 - ◇ Analyzing interview data qualitatively and examining differences in the plot usability scores

Knowledge Translation Strategy

- We will disseminate findings to the study team network, and more broadly through conference presentations, webinars, and open-access publications.

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