Systematic Reviews

PROTOCOL

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Research priority setting for implementation science and practice: a living systematic review protocol

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Abstract

Background Research priority setting has the potential to bridge knowledge gaps, optimize resource allocation, foster collaborations, and inform funding directions for implementation science and practice when these priorities are properly acted upon. This systematic review aims to determine the extent of research in priority setting for implementation science and practice, examine the methodologies employed, synthesize these research priorities, and identify strategies for evaluating and implementing these priorities.

Methods We will conduct a living systematic review following the Cochrane guidance. We will search literature from six databases, the website of James Lind Alliance, five implementation science-focused journals and several related journals, Google Scholar, and the reference lists of included studies. Two reviewers will independently screen studies based on the eligibility criteria. The characteristics of the included documents, their prioritization methods, and outcomes, as well as the evaluation and implementation strategies, will be extracted. We will critically appraise these documents using the nine common themes of good practice for research priority setting, and synthesize data using a narrative approach. We will re-run the search 12 months after the original search date to monitor the development of new literature and determine the time to update the review.

Discussions By conducting this living systematic review, we will gain a comprehensive and dynamic understanding of the potential research gaps and hotspots in implementation science as perceived by researchers and practitioners. The findings of this review will inform the future research directions of implementation science and practice.

Systematic review registration This review has been registered with the Open Science Framework (https://osf.io/sr69k).

Keywords Implementation science, Knowledge mobilization, Priority setting, Research agenda, Living systematic review

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Background

Advances in implementation science

Implementation science is the "scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services (P1)" [1]. It has emerged as a prominent, rapidly-evolving, and multidisciplinary field in health services and policy research since its introduction in 2006 [2]. On the science front, implementation theories, models, and frameworks [3–5] and innovative methodologies [6–8] have been developed to support researchers and practitioners in addressing complex implementation problems. Various sub-fields have also emerged such as implementation sustainability [9–12], scaling up [13–15], and adaptation [16, 17]. These sub-fields focus on ensuring that evidence-based practices are not only adopted but also sustained over time, scaled up to reach broader populations, and adapted to fit diverse contexts. These research endeavors have further enriched the depth and breadth of implementation science. On the practice front, implementation science has had major impacts on healthcare practice and health outcomes in a number of key areas on [18, 19]. For example, the nurse-led Quality in Acute Stroke Care implementation program in Australia has demonstrated significant reductions in death and dependency rates among stroke patients [20, 21]. This initiative has been sustained for over 15 years and has resulted in noteworthy changes in policies, guidelines, and clinical practices worldwide [22, 23].

As its relevance and significance have grown, implementation science has transcended disciplinary boundaries and established connections with various non-healthcare disciplines, such as education [24], social service [25], and business and management [26]. Furthermore, implementation science has demonstrated a global reach, making a substantial impact not only on high-income countries but also on low- and middle-income countries [27, 28]. Overall, implementation science has become a trendy and influential field in current health service research and practice globally.

The role of research priority setting in implementation science and practice

Implementation science and implementation practice are interrelated and interdependent while focusing on different dimensions of translating research findings into real-world settings [29]. Implementation science is a research-oriented field that seeks to understand and advance the science of implementation [30, 31]. It focuses on generating knowledge about the factors and strategies that influence the successful adoption, integration, and sustainability of evidence-based practices or interventions in various settings [31]. In comparison, implementation practice is more practical and action-oriented which involves applying the principles and strategies derived from implementation science to real-world settings [32].

While certain aspects of implementation science have seen significant advancements, others remain underdeveloped. A prime example is the proliferation of theoretical frameworks used to guide implementation efforts. A scoping review identified 159 theories, models, or frameworks used to guide implementation research, among which 87% were used in five or fewer studies and 60% were used only once [5]. In contrast, some areas, like the investigation of implementation mechanisms [33, 34], the development of measurement instruments for implementation outcomes [35, 36], the alignment of implementation science with health equity [37] and clinical quality improvement [38], lack comprehensive exploration.

Critiques have also arisen regarding the evolution of implementation science. Notably, the insufficient recognition of its multidisciplinary and interdisciplinary nature has resulted in a lack of diversification in epistemological assumptions, conceptual lenses, and methodological approaches [39]. Furthermore, the applied nature of implementation science has been underappreciated with research outputs primarily benefiting academic communities rather than health professionals and policymakers [40].

While fully addressing these complexities and concerns is challenging, research priority setting exercises offer a partial solution. Research priority setting is a systematic and collaborative process of establishing the most crucial areas of research that need to be addressed or are important to stakeholders [41–43]. It involves a process of identifying, prioritizing, and achieving consensus on the research areas through a formal and rigorous research methodology, such as the James Lind Alliance approach [44], the Child Health and Nutrition Research Initiative approach [45], and the World Health Organization approach [43]. The output of a research priority setting study typically includes a list or ranking of research topics or areas that are deemed to be of high importance or priority within a specific field.

Research priority setting in implementation science and practice offers numerous benefits when effectively utilized. It helps identify knowledge gaps, guides researchers to generate evidence to fill these gaps, and ensures efficient allocation of limited resources to address urgent, impactful areas. By engaging stakeholders, such as researchers, policymakers, practitioners, patients, and communities, research priority setting activities can foster dialogue, enrich understanding, and propel the field forward. Additionally, it informs funding agencies

on strategic investments, aligning research projects with identified priorities for greater impact. Ultimately, research priority setting advances implementation science by targeting efforts to meet stakeholders' needs and maximizing the field's relevance and effectiveness.

The rationale for this review

Implementation science has seen a surge in publications on research priority setting. For instance, Powell et al. [46] identified five priorities for implementation strategies, including tailoring implementation strategies, testing mechanisms, conducting effectiveness studies, and addressing economic and tracking aspects. In contrast, Hamm et al. [47] developed implementation practice priorities for addressing the maternal health crisis in the USA, highlighting practices like improved postpartum care, de-implementation of unnecessary cesarean deliveries, and equity in frameworks and measures. These two examples illustrate some of the typical characteristics in current publications within the field. Powell et al. focused on the scientific dimensions of implementation science in determining their priorities, whereas Hamm et al. placed greater emphasis on the practice side. Powell et al. did not specify an explicit method for priority setting, while Hamm et al. employed a modified Delphi technique for their formulations.

Despite the abundance of publications on research priority setting in implementation science and practice, an overview of these efforts is noticeably lacking. A systematic review of this topic is essential to pinpoint research gaps and hotspots and inform the direction of its ongoing development. As such, this systematic review aims to examine existing research priority-setting activities conducted in the fields of implementation science and practice. Specifically, our objectives are to determine the extent of research, examine the methodologies employed in establishing research priorities, synthesize the range of research priorities, and identify strategies for evaluating and implementing these priorities.

Methods

We will conduct a living systematic review following the Cochrane guidance [48]. The "living" systematic review was defined by the Cochrane Handbook as a systematic review that will be updated regularly to include new evidence via continual and active monitoring [48]. We reported the study protocol followed the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) Protocols (see Supplemental Table for details) [49]. This systematic review protocol has been registered with the Open Science Framework (https://osf.io/sr69k). The findings of the systematic review will be reported based on the PRISMA 2020 checklist [50].

Search strategy

The literature search includes two major steps: a pilot search to determine the search strategies and a comprehensive search to identify relevant literature. The pilot search, which has been performed by two reviewers (XZ and WB), involved a raw search of systematic reviews relating to priority setting [51–54] and implementation science [55, 56] respectively, and the identification of search terms for both. An initial search strategy was then developed, and a literature search was performed and iteratively refined in Ovid MEDLINE to ensure the comprehensiveness and sensitivity of the search strategy. Specifically, we documented various versions of the search strategy by adding, removing, or modifying certain search terms and compared the results. For example, when the term "evidence-based practice" was included, a large number of irrelevant papers were retrieved. However, excluding this term was not appropriate, so we modified it to "evidence-based practice implement*" to improve the relevance of the results. The search strategy was then finalized based on a discussion among team members (JZ, WC, XZ, and WB) with the consultation of an academic librarian at the University of Toronto (see Additional file 1 for the search strategy in Ovid MEDLINE).

For the comprehensive search, two reviewers (XZ and WB) will search the literature for five sources: (1) six databases will be searched from their inception to June 1st, 2025, including Medline (Ovid), Embase (Ovid), Web of Science, Scopus, PsychINFO (EBSCO), CINAHL(EBSCO); (2) the website of James Lind Alliance—an organization that is internationally known for advising and conducting research priority setting exercises; (3) five implementation science-focused journals, including *Implementation Science*, *Implementation Science Communications*, *Implementation Research and Practice*, *JBI Evidence Implementation* and *Global Implementation Research and Application,* and several implementation science-related journals including *BMJ Quality and Safety, BMC Health Services Research, BMJ Evidence-Based Medicine, Worldviews on Evidence-Based Nursing, frontiers in health services—implementation science section*; (4) Google Scholar (https://scholar.google.com/) will be searched for grey literature; (5) the reference lists of included studies will also be reviewed to identify additional relevant papers. The literature search results will be uploaded into Endnote to remove duplicates. A PRISMA 2020 flow diagram will be completed to record the number of articles identified, screened, and included for full-text review [50]. We will report the

literature search following the extension to the PRISMA statement for reporting literature searches in systematic reviews [57].

Study screening and selection

All retrieved documents will be screened for eligibility against the inclusion and exclusion criteria described as follows. To be included in the review, documents should have described a process of conducting a research prioritization exercise in implementation science or practice. Specifically, documents should have outlined participants' characteristics and stated explicit research prioritization methods. Methods of identifying priorities include, but are not limited to, surveys, qualitative studies, consensus methods (e.g., Delphi survey, nominal group technique), or workshops. We will include documents focusing on either implementation science or implementation practice as defined above. There will be no restrictions on language or publication time. We will exclude non-empirical studies (such as commentaries, editorials, discussion papers, and opinions), secondary studies, guidelines, books, and book chapters. We recognize that some priority-setting activities may not have used an explicit method to develop the prioritization list but offer potentially rich information for our research question, these studies will be tracked and analyzed separately and will be compared with the findings of this review.

Six researchers (WC, JZ, WB, XZ, RH, and SC) will participate in the study screening and selection. We will hold a group meeting to discuss and familiarize the eligibility criteria and conduct a pilot screening of 15 papers to reach a consensus on the criteria. We will perform the title/abstract and full-text screening independently by two reviewers afterward using Covidence (https://www.covidence.org/). Any disagreement between the two reviewers will be resolved through discussion with WC or JZ.

Data extraction

We developed a preliminary data extraction form referring to the ten domains in REporting guideline for PRIority SEtting of health research (REPRISE) [42] and through team discussion (see Additional file 2). This form will undergo adjustments following a pilot extraction with three included studies. The following information will be considered to extract: (1) basic characteristics of the included documents, including year of publication, journal, language, countries, organization/settings, disciplines, intended beneficiaries (populations who would benefit from the research priority setting outputs and their implementation, such as patients, caregivers, or the general community), target audience (populations who are likely to implement or influence the implementation of those priorities, such as researchers and practitioners), research areas, time frame for the research priorities to be valid or relevant and plans for update, source of funding, conflict of interests; (2) methodological process: priorities setting leadership team (including structure, types, numbers, affiliations, relevant training or experience), prioritization framework/method (e.g., Child Health and Nutrition Research Initiative method, James Lind Alliance method, Delphi, etc.), prioritization process or stages, year of priority setting (taken as the year of publication if not given in the text), stakeholder involvement (including the inclusion criteria, type and numbers of different types of stakeholders, methods of engaging with stakeholders), and methods for identifying and collecting research priorities; (3) outcomes: numbers and specific items of priority list, and rationale for the selected items; (4) evaluation and implementation strategies: evaluation of the prioritization process/results (e.g., acceptability, reliability, and usefulness), approaches to receiving feedback, and strategies used or intend to use to implement these priorities.

All team members will participate in the data extraction. Each article will be extracted independently by one reviewer and verified for accuracy by a second reviewer. Any discrepancies will be resolved via discussion with a third reviewer. Authors of reviewed papers will be contacted if any missing details about their studies are needed.

Quality appraisal

We will assess the methodological quality of the included studies referring to the nine common themes for good practice in health research priority setting by Viergever et al. [41]. The nine themes have been widely used to guide or evaluate research prioritization exercises. However, there have been challenges to operationalizing them in critical appraisal practice due to the broadness of the theme statements and lack of instructions. Lqbal et al. further developed 20 detailed criteria to operationalize the nine common themes which include the following: context ($n=7$ criteria), comprehensive approach ($n=1$), inclusiveness ($n=5$), information gathering ($n=1$), planning for implementation ($n=2$), criteria on deciding priorities ($n=1$), methods ($n=1$), evaluation ($n=1$) and transparency ($n=1$) [51].

We will appraise the study quality using Lqbal et al.'s approach [51]. We will rate studies against each of the 20 criteria with yes (1) or no (0) and employ a scoring system for quality assessment that has been utilized in prior systematic reviews [58, 59]. A rating score will be assigned to each study, calculated by dividing the achieved quality rating points by the highest attainable points. Study

quality will then be categorized as follows: low quality (0–0.25), low to moderate quality (0.26–0.50), moderate quality (0.51–0.75), or high quality (0.76–1.0). All team members will participate in the appraisal process and each study will be independently assessed by two reviewers. Any disagreements were resolved through discussion with a third reviewer (JZ or WC).

Data analysis and synthesis

To examine the extent of research priorities setting in implementation science and practice, we will tabulate the study characteristics (e.g., year of publication, settings, disciplines, intended beneficiaries, target audience, source of funding) using frequencies and proportions. The year range will be applied to describe the time frame of priorities.

To determine how the research priorities in implementation science and practice were set, we will narratively synthesize data on the prioritization method, prioritization process or stages, and criteria for setting the priorities. We will also calculate the type and number of leadership team members, and stakeholders involved in the priority-setting process and synthesize involvement methods.

For prioritization outcomes, we will calculate the numbers of these research priorities identified, and narratively synthesize and compare them. We will summarize and calculate the number and percentage of studies that focus on different aspects (science versus practice) and stages (map them into the knowledge-to-action framework [60]) of implementation science.

For research priority evaluation and implementation, we will narratively synthesize the evaluation methods for the prioritization process/results, approaches to collect and address stakeholder feedback, and strategies applied (or intend to apply) to implement research priorities. We will report the number and percentage of studies that reported each item in the REPRISE reporting guideline [42].

Plan for the living systematic review

We will apply the living systematic review approach as we hope to monitor and examine the research trend and dynamics in implementation science and practice. Following the guidelines from Cochrane on living systematic reviews [48], we will re-run our search strategy 12 months after the original search date to examine new literature in this field and determine the appropriate time for a review update. We (WB and XZ) will perform quarterly literature searches across the same databases and grey literature sources, importing selected papers into a Cloud Disk which allows team members to have simultaneous access to papers and perform data extraction and analysis work. Two researchers (RH and SC) will conduct data extraction using the same extraction form and subsequent statistical analysis. We will initiate an updated systematic review and submit it to a peer-reviewed journal when newly identified evidence is likely to substantially impact the conclusions of the review (e.g., more than five new research priorities have been identified). The decision to maintain the living review approach will be evaluated annually, with a minimum of one update planned. However, the number of subsequent updates will depend on the team's capacity to complete the work.

Discussion

This will be the first living systematic review to comprehensively examine research priority setting in implementation science and practice. The findings of this review will benefit the implementation science community by shedding light on the evolution of research priorities and the development trajectory of this field. Implementation researchers, policymakers, and practitioners will be able to identify emerging trends, persistent challenges, and areas where further investigation is warranted.

While research priority setting holds the potential to advance implementation science and practice, it is essential to recognize that without effective implementation, these research priorities are unlikely to yield a significant impact. Therefore, the successful execution of these research priorities collectively by funding agencies, implementation researchers, and practitioners, guided by the implementation science theories and methods, is crucial for advancing the field.

Furthermore, research priority setting carries the risk of inadvertently marginalizing or excluding minority voices, resulting in a skewed prioritization of topics that may not fully address the diverse needs of communities. The dynamics of power at play can significantly influence the formulation of research inquiries, favoring those aligned with prevailing or mainstream ideologies and yielding research outcomes that benefit specific populations. In light of this, our study remains attuned to the intricate interplay between power and knowledge dynamics. Following the completion of the systematic review, we will conduct a mixed methods study with our team members and a broader range of participants, including implementation scientists, practitioners, policymakers, and healthcare and social service providers, to investigate their perceptions of these priorities and identify research areas that may have been overlooked. We will employ a purposive sampling approach based on the PROGRESS-Plus framework [61] to recruit participants to ensure the inclusivity and relevance of our research efforts. Furthermore, we plan to undertake another formal research priority setting study, building upon the

findings from the review and the aforementioned mixed methods study. This study will aim to provide a holistic view of the field and contribute to the advancement of implementation science.

In conclusion, this systematic review represents a significant step forward in advancing the field of implementation science. The knowledge generated from this review has the potential to drive positive change, inform decision-making, and inspire further exploration in the dynamic field of implementation science.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s13643-025-02786-3.

Supplementary Material 1.

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Authors' contributions
JZ and WC conceptualized the research project and wrote, revised, and finalized the manuscript. WB and XZ conducted an initial literature search and search strategy revision. All the co-authors have critically reviewed and revised the protocol. All co-authors have agreed to the submission.

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Data availability
Not applicable for the protocol.

Declarations

Ethics approval and consent to participate
Not applicable.

Consent for publication
Not applicable for the protocol.

Competing interests
The authors declare that they have no competing interests.

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