Do we need systematic reviews of research priority setting? A proposal for a new concept on conducting systematic reviews of research priority setting exercises

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Abstract:

With the increasing number of research priority setting (RPS) exercises, systematic reviews synthesising their findings have also grown in prevalence. While these reviews offer a structured way to compare methodologies, identify underrepresented stakeholder groups, and guide funding decisions, conventional systematic review methodologies—designed primarily for clinical and health research—often fail to capture the complexity, contextual nuances, and participatory nature of RPS. In this commentary, we critically examine these limitations and propose methodological adaptations to enhance the relevance and utility of systematic

reviews of RPS. Beyond knowledge generation, we highlight the broader implications of RPS, including its role in stakeholder engagement, research funding allocation, and policy translation, as well as its impact on how these exercises are synthesised. By re-evaluating how systematic reviews of RPS are conducted, we advocate for context-sensitive methodologies that better reflect the dynamic and iterative nature of research priority setting.

Key words: *Research Priority Setting (RPS), Systematic Reviews, Evidence Synthesis, Stakeholder Engagement, Research Agenda*

A research priority setting exercise (RPS) is a collective activity that involves stakeholders in deciding how to allocate resources to a group of people, often incorporating different ways of processing and managing various sets of data, as well as wider engagement with participants. The goal is to decide how resources—whether financial or otherwise —might be allocated to specific research topics, questions, or projects. Sometimes these decisions are made with resources already in play, while other groups and stakeholders run the priority setting exercises hoping that entities with resources will adopt their priorities. There are occasions that the priority setting exercise is used as a knowledge acquisition and advocacy tool to understand the priorities of certain groups e.g. patients or make them more visible. Overall the knowledge ecosystem has evolved where RPS is being recognised as a key tool to set priorities (1,2). Decisions on research priorities define what research questions get supported, however, important research questions stay unanswered for years that raises questions whether we need to rethink how we do research. This mismatch can result in research waste—where priorities either fail to address real-world needs or duplicate previous studies unnecessarily. (3-5).

Although there have been no formal studies, a quick search in PubMed reveals that in 2024, 57 papers were published in PubMed under the tags "research priority setting," "research prioritisation," or "research prioritisation." Between 1994-2024 the highest number of research priority published was in 2022 a total of 80. The increasing conduct of RPS has meant that increasingly researchers are publishing systematic reviews of research priority setting (RPS) (6-23) . These reviews have diverse objectives—some aim to understand the methodological approaches used and compare them, while others identify gaps, such as which stakeholder groups have been underrepresented in priority setting exercises or identifying priorities for resource allocation of a certain research group.

RPS can significantly influence resource allocation decisions, making them highly political processes. They do not just provide knowledge on what is ranked research priorities, these exercises foster stakeholder engagement; they also offer opportunities to engage with stakeholders, build partnerships and trust, and secure buy-in from participants that extends beyond the exercise into the conduct of the research process itself and it subsequent translation in policy and practice. RPS exercises are underpinned by various methodologies, such as the Delphi method and the nominal group technique, each influencing the outcomes in distinct ways. For instance, the Delphi method's iterative nature may lead to more refined priorities, while the nominal group technique could promote immediate consensus among stakeholders.

In some systematic reviews, the topics that emerge from these priority setting exercises are explored. However, applying the conventional framework of systematic reviews in health research directly to RPS exercises is overly simplistic and may not adequately capture the complexity, contextuality and varying scope of RPS. For the purposes of a systematic review of RPS is typically treated as all research priority settings as a knowledge acquisition exercise as we use the results as a new result/knowledge. There is only one exception that we will highlight later.

While RPS exercises are becoming increasingly prevalent, there is no consensus on the best way to synthesise them through systematic reviews. Many current approaches adapt methods from health research frameworks, which may not be suitable due to the inherently participatory nature of RPS exercises. In this paper, we rationalise for and discuss the need for tailored guidance for systematic reviews of RPS which can capture adequately the unique complexities it navigates.

The questions we need to ask are: why do we need to synthesise these exercises, and if so how can such

synthesis adequately capture what the RPS process entails? For example, imagine a research group in the UK decides to run a research priority setting exercise involving patients and other stakeholders to support their decisions on which research projects are most likely to impact patient health. Now, let's imagine that this group primarily receives funding from UK-based research funders and organisations. If they run a systematic review of RPS in their clinical focus and identify 10 priority setting exercises, but all 10 were conducted in countries with vastly different cultural and economic contexts from the UK, how could a summary of these exercises provide meaningful support to the UK-based research group, which focuses on local contexts and funders? One could argue that the processes used in other contexts might offer insights into what could work or not work for the group.

In this paper, we suggest a few conceptual adjustments on how to conduct systematic reviews of RPS, to make them more relevant and useful for the groups that conduct them.

Screening question: One key question the group should ask is whether they need a systematic review of research priority setting exercises. If the group or organisation has a very specific scope that requires engagement with local stakeholders—and the buy-in of those stakeholders is crucial for ensuring the success of the priority setting process, securing funding, and recruiting participants—then the group needs to consider whether the systematic review would add any value. It is helpful to check whether a similar review was recently conducted with a comparable group of patients, and they might find the results useful. However, this alone does not help build the partnership, trust, and buy-in that the process requires. It is possible that the group could adopt the priorities from another group while finding alternative ways to build partnerships and trust.

Structure for the research question:

The framework recommended as part of the REPRISE reporting checklist (24). The REPRISE checklist suggested the GhePoR(T) framework for structuring the questions for research priority setting exercises.

- **G** eographical scope

- **he** alth area, field, focus

- **Po** pulation

- **R** esearch Area and Question

–**T** arget audience of the priorities (this is optional)

We would recommend a similar framework for systematic reviews of RPS. We realise on some cases, the framework might not have the flexibility to adjust when the focus is not a geographical area or clinical area so we have a suggested more concise framework as an alternative available - PROFS framework.

- **P (Perspective):** What types of research priority setting are you focusing on?
- **R (Restrictions):** What are restrictions of the priority setting exercise? These are usually driven by the values and scope of the organisation conducting the priority setting, such as only focusing on priorities within the UK. This could be place, population or data or resources?
- **O (Outcome):** Are there any specific findings the review aims to uncover, such as mapping and scoping the priorities or specific factors that facilitate the engagement of individuals in the priority setting process, or identifying the most common priorities among certain stakeholder groups?
- **F (Focus):** Is the focus on the process of priority setting, the outcomes, evaluation of the success of the exercise or a combination of them?
- **S (Stakeholders / interest holders):** If stakeholders are involved, are there specific stakeholders you are focusing on?

For instance, in a systematic review focusing on mental health research priorities in the UK, the Population could be defined as stakeholders including patients, clinicians, and policymakers, with Restrictions being limited to studies conducted within the UK context.

Search Strategy:

Currently, there is no validated search filter for identifying RPS studies in bibliographic databases. We suggested a few search strategies (Table 1) based on common terminology found in published RPS studies; however, further validation is required to ensure its accuracy and completeness. Future research should focus on developing a standardised, high-sensitivity filter for RPS studies.

Depending on how extensive the search is intended to be, it should ideally involve a survey for informal research priority setting exercises or an evaluation of websites of funding bodies or other organisations for reports. This helps balance any biases toward complex, formal publications (meta-bias). Funding organisations hold several panel sessions every year, and most countries have some form of a research organisation or department that allocates resources for research. Therefore, hundreds of prioritisation exercises happen each year. It would be useful for reviewers to consider this when searching additional resources or drawing conclusions from the studies.

Critical appraisal of studies

There are different types of aims and remit that systematic reviews of research priority setting have that can influence whether and how the reviewers appraise the studies. These types could include, amongst others:

- Systematic review of priority setting, and focus is on quality of reporting of the priority setting
- Systematic reviews of priority setting and focus on the quality of implementation of certain steps of the priority setting exercise e.g. the quality stakeholder engagement or the ethical integration in the process
- Systematic review of studies that evaluate priority setting exercise - then you have two levels of potential quality assessment depending on what's your focus - the quality of the design of the evaluation and the quality of the conduct of priority setting- examples
- Systematic review of research priority setting focusing on the priorities only - then the quality issue is the level of clarity around the details of the priorities and the underlying nuances or narratives integrated with it and the detail and quality of the methods around translation the discussion into the question (25).

The reviewer should first differentiate whether they are appraising the studies that contributed to the design or evaluation of priority setting exercise or looking at the quality of the priority setting exercise itself. The latter is a complicated issue as the "quality assessment" implies that there is a concept what is a good priority setting and what is not, however, there is currently not enough studies to actually judge that so usually the evaluation is focused on issues like quality of reporting that you could do for example with the REPRISE tool (24). There are elements in the priority setting exercise that we can evaluate their quality like for example the stakeholder engagement process, the economic evaluation underneath the priorities setting or the quality of evidence reviews that contributed to it.

If the systematic review focuses on the priorities or outcomes of research priority setting, we could assess the clarity of the priorities based on their ability to be accepted by researchers or implemented. For example, consider the two priorities below – one from Armstrong (2020) (26), which involved individuals with dementia and their carers, and one from a James Lind Alliance's Priority Setting Partnership with affected individuals, their carers, and service providers (27). The one from Bethel (2018) demonstrates much more clarity and focus for researchers to follow. In contrast, the one from Armstrong is vague and general, allowing researchers to adapt the question in ways that may deviate significantly from what the stakeholders involved in the process initially intended or hoped for (27).

Priority 1 (Need for therapist to prevent, cure or slow Dementia with Lewdy bodies)

Priority 2 (from Bethel 2018) "*Among persons with dementia, what are the effects of non-pharmacological treatments compared to pharmacological treatments on behavioural and psychological symptoms of dementia? Can non-pharmacological treatments replace, reduce or be used in conjunction with pharmacological treatments for managing behavioural and psychological symptoms of dementia? (* 27)"

Our suggested approach is that you rank the topics as high level of clarity similar to priority 2 that provides details on the direction of research that the stakeholders intend to go, medium level of clarity similar to priority 1 that gives some details but provides a lot of room and interpretation. We would have a third level of low level of clarity that would apply for priority setting that general would say dementia research is a priority.

Synthesis of the studies:

There are two approaches to synthesising RPS exercises: (1) synthesising evaluation studies of RPS exercises, or (2) synthesising the characteristics and outcomes of RPS themselves.

For the former, depending on the nature of the evaluation, the synthesis could be qualitative or quantitative and depends on what outcomes measured are analysis. For example, if you are looking at the impact of research priority setting with regard to identifying more research projects that can impact health inequalities. You will look at priority setting exercises that have long term evaluation attached to them and look at what priority setting exercise with what characteristic is more likely to result in studies that have an impact. In this speculative scenario, you might for example find out that involving stakeholders in meetings is more likely than the survey.

However, we currently cannot do these types of systematic reviews, as there are not enough studies focusing on this area.

Most currently evaluation studies focus on the process of the priority setting (28, 29).

The other type of synthesis focuses mainly to understand the characteristics of priority setting or understand the nature of the identified priorities itself. These two other types of reviews are as follow:

Focus on the "process" of the priority setting exercise: This would partially depend on the focus of the findings. For example, if the focus is on understanding what facilitates or creates barriers in stakeholder engagement during the priority setting process, well-recognized qualitative evidence synthesis approaches or realist review approaches might be used. However, if the question focuses on why and how certain stakeholders agree to participate in the process (or not), a different approach, such as a realist review, would be more appropriate.

Focus on the "priorities" at the end of a research priority setting exercise: Current systematic reviews typically take a simplified approach that involves outlining counting priorities or trying to find mutual themes across them. We propose an alternative method, termed "meta-priorities synthesis." The approach begins by identifying primary l themes that encompass several priorities but tagged with their characteristics. Then, a second level of themes would be identified that cover multiple first-level themes, and so on, until you reach a top level of priorities. Any themes beyond the third level are considered meta-priorities.

The nature of the meta-priorities depends on the sources of the priority setting exercise. For example, if you have a series of research priority setting exercises conducted in Brazil, Germany, and China, and the meta-priority is mental health, this would be considered a cross-country meta-priority. If the series of research priority setting exercises focuses on different stakeholder groups—some engaging only with patients, others with clinicians—the meta-priorities would be cross-stakeholder meta-priorities. We suggest that authors repeat the thematic analysis for different cross- groups until they find a series of meta-priorities across different "characteristics" that provide them an overview how priorities are expressed in different clusters and where there are similar value judgements made. This then can become a useful tool for policy makers to make decisions on priorities building activities of smaller or regional organisations or making global decisions based on national or regional priorities. The grouping of themes and the selection of meta-priorities will depend on the structure of the question as outlined before.

In both of these synthesis approaches, we considered research priority setting as a knowledge acquisition exercise, where the priorities are the results and new knowledge is created. However, there is one instance where a different approach to synthesis is appropriate. If the focus of the review is to understand the

historical development of research priorities in a certain field or community and its implications for research infrastructure, we recommend using established methods from the historical sciences to analyse or synthesise these data. In these cases, all included research priority-setting exercises are treated as political interactions, explored in the context of how they have influenced and shifted the allocation of resources and affected the research agenda.

Conclusion:

Systematic reviews of RPS must evolve beyond traditional evidence synthesis methods to fully capture the participatory and contextual nature of these exercises. We propose the PROFS framework as a step toward refining these reviews. Future research should focus on: (1) validating search filters for RPS studies, (2) refining quality assessment criteria, and (3) testing the PROFS framework in real-world systematic reviews. By adapting our approach, we can ensure that systematic reviews of RPS provide meaningful insights that support better research agenda-setting and funding decisions.

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