How does participatory research work: protocol for a realist synthesis

Louba Belaid, Iván Sarmiento, Anna Dion, Juan Pablo Pimentel, Andrés Rojas-Cárdenas, Anne Cockcroft, Neil Andersson

ABSTRACT

Introduction  Participatory research science deals with partnerships underlying research, governance and ownership of research products. It is concerned with relationships behind research objectives and methods. Participatory research has gained significant traction in design of health interventions, contextualising these to local settings and stakeholder groups. Despite a massive increase in participatory research exercises, the field remains undertheorised, and the mechanisms for improving health outcomes remain unclear. This realist review seeks to understand how and under what circumstances participatory research impacts health and social outcomes.

Methods and analysis  The review will follow four steps: (1) searching for and selecting evidence, (2) assessing the quality of evidence, (3) extracting and categorising data and (4) synthesising the data in the form of context–mechanism–outcomes configurations. The review will follow the Realist And Meta Narrative Evidence Syntheses: Evolving Standards (RAMESES) II guidelines for reporting realist evaluations. We categorise and synthesise data in four steps: (1) identifying outcomes, (2) identifying contextual components of outcomes, (3) theoretical redescription (abduction) and (4) identifying mechanisms. A retroductive analysis will identify mechanisms by moving between empirical data and theories, using inductive and deductive reasoning to explain the outcomes–context matches. The output will generate middle-range theories on how participatory research works, for whom and under what circumstances.

Ethics and dissemination  This study is a review of a published literature. It does not involve human participants. We will convene a workshop to share and discuss the preliminary results with partners and key stakeholders involved in participatory health research. We will publish the review results in peer-reviewed journals and academic conferences.

INTRODUCTION

Participatory research is ‘the science of partnerships underlying research, concerned with research governance, ownership of research products and relationships behind research objectives and methods’.1

Over the last two decades, a massive increase in interest and publications about participatory research has raised questions about how participatory research may improve health and well-being outcomes. Participatory research goes by several different names with slightly different overlapping meanings. The number of publications using the search term ‘action research’ in Google Scholar leapt from 208 in 2000 to 1639 by 2017. The number of publications for ‘community-based participatory research’ (CBPR) went from 1 in 2000 to 116 in 2017. And the publications for ‘participatory action research’ increased from 38 in 2000 to 455 in 2017.2 These figures included only articles published in the USA from 1994 to 2018.2

Evidence suggests that participatory research affects personal, health and social outcomes.3,5 An umbrella review reported a reduction in neonatal mortality through women’s groups using participatory learning action cycles, a decrease in HIV/Sexual transmitted diseases (STIs) with empowerment and mobilisation interventions and a decrease in infant diarrhoea through mobilisation of community health workers.4 A recent study reported increased well-being, self-care and self-efficacy scores after a codesigned participatory psychosocial intervention with indigenous Maya women in Guatemala. Women who attended more sessions had higher well-being, self-care and infant care self-efficacy scores.3

There is a growing literature examining the mechanisms underlying participatory research.6,7
A 2015 systematic review of 24 studies focused on the CBPR approach identified key components of community engagement associated with positive health and social outcomes: (1) genuine power-sharing between communities and research teams, (2) collaborative partnerships, (3) bidirectional learning, (4) incorporating the voice and agency of participants in research protocols and (5) using bicultural health workers for intervention delivery.7

The review authors used the International Association for Public Participation spectrum (informing, consulting, involving, collaborating, empowering) to assess the level of community engagement achieved.8 The level of community engagement achieved was moderate in 15, good in 6 and low in 3 studies.9

A 2019 mixed methods systematic review on community mobilisation for improving reproductive, maternal and child health in African and South Asian countries identified 15 mechanisms for impact (examples: critical consciousness, attitudes/norms and collective action) and 12 contextual factors (such as pre-existing poverty, power hierarchies, social cohesion). The authors did not have high confidence in any mechanism, enabler or barrier. Few studies provided direct evidence about the proposed mechanisms, enablers or barriers to health behaviours or outcomes.6 The authors concluded that more work is needed to identify evidence-based mechanisms and contextual factors for the effects of participatory research.6

The body of evidence on participatory research concludes that the field is seriously undertheorised, and actionable mechanisms for health improvement are unclear.9 An important challenge is distinguishing between the impact of participating and the specific intervention.10 The explanation that could overcome this is that participatory research embraces multiple paradigms and methods applied in various interventions.10 The lack of clarity, however, on what participatory research is, who participates are, and its optimal implementation can make it more difficult to design the most effective participatory research interventions.7

This realist review aims to identify the mechanisms underpinning participatory research in health interventions and highlight the role of context in optimising outcomes. It will ‘unpack the mechanism of how complex programmes work (or why they fail) in particular contexts and settings’.15

METHODS
With roots in realism and critical realism, several philosophical principles underlie realist review.14 First, social phenomena result from the actions of social agents and how these agents understand social phenomena. Second, actions from these social agents are constrained or enabled by social structures (policies, institutions, social and cultural norms). Third, the interaction between social agents and structures influences social phenomena’ processes and outcomes. Fourth, science should seek to understand how agent–structure interactions generate change.15

In realist synthesis, an outcome is the product of a mechanism triggered by the intervention and the context in which the intervention is implemented.

A mechanism can be understood as a combination of resources offered by the intervention and stakeholders’ reasoning in response.16 Mechanisms can only be activated in the right conditions.16

In this type of systematic review, theories are tested and refined through the identification of contextual factors (abbreviated as C) that influence outcomes (abbreviated as O) by mechanisms (abbreviated as M).13 For this review, we will look at how context and mechanisms affect the outcomes of participatory research.

Objective and research questions
The objective is to understand how and under what circumstances participatory research impacts health and social outcomes positively or negatively. The research questions are:

► How does participatory research produce these outcomes?
► How do contextual factors trigger the activation of mechanisms?

Study design
The realist review will follow four steps: (1) searching for and selecting evidence, (2) assessing the quality of evidence, (3) extracting and categorising data and (4) synthesising the data in the form of context–mechanism–outcomes configurations. The output will be middle-range theories of how participatory research works, for whom and under what circumstances. The search strategy was designed in April 2023 and the full review is expected to be completed by April 2024.

Searching for and selecting evidence
With the support of a specialised librarian, we will design a search strategy using key terms in English, French, Spanish and their truncations with Boolean operators (And/OR). Previous systematic reviews on participatory research and community engagement included only English studies and acknowledged that this was a limitation.24

The key concept is participatory research. This review defines participatory research as ‘the science of partnerships underlying research, concerned with research governance, ownership of research products and relationships behind research objectives and methods’.1

The participatory research literature has no agreed-upon distinction between participation, engagement and partnership. This review distinguishes between these terms since they affect the understanding of mechanisms—how participatory research works. In this review, participation means simply taking part. This is less stringent than the fuller sense of participation, which means participating through specific dynamics. Engagement...
means, literally, an arrangement. Engaging someone may mean employing them or interesting them in something. Engagement does not require partnership, but partnership does require engagement. One might engage people to participate, join a focus group, fill out a questionnaire, or address their issues innovatively. In the above framework, coproduction and user- led research increases partners’ capacity to identify and address their issues innovatively. In the above framework, our participatory research approach resonates with the two last components: collaboration and coproduction and user- led research. We will include papers that fit with collaboration and coproduction and user- led research.

Papers should report partnerships between researchers, patients and communities. A community is ‘a group of people who share an interest, a neighbourhood or a common set of circumstances. They may or may not acknowledge membership of a particular community’.

### Table 1  Inclusion and exclusion criteria for screening references

<table>
<thead>
<tr>
<th>First stage screening: titles and abstracts</th>
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<tbody>
<tr>
<td><strong>Inclusion criteria</strong></td>
<td><strong>Exclusion criteria</strong></td>
</tr>
<tr>
<td>Report primary empirical research including quantitative, qualitative and mixed methods research.</td>
<td>Commentaries.</td>
</tr>
<tr>
<td>Include terms such as participatory research, action research, community-based participatory research, involvement, collaboration, participation mentioned either in titles or abstracts.</td>
<td>Theoretical/conceptual papers.</td>
</tr>
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</table>

<table>
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<tr>
<th>Second stage screening: full articles</th>
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<tbody>
<tr>
<td><strong>Inclusion</strong></td>
<td><strong>Exclusion</strong></td>
</tr>
<tr>
<td>Significant level of participation based on the conceptual framework. Include papers that fit with collaboration and coproduction and user-led research types.</td>
<td>Papers where there was no involvement in the planning, design, or conduct of the research or intervention or where the claim of involvement was not explained or evaluated.</td>
</tr>
<tr>
<td>Report partnerships between researchers, patients and communities.</td>
<td></td>
</tr>
<tr>
<td>Provide information on context, proposed mechanisms and intended (or unintended) outcomes.</td>
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</table>

We will use a two-stage approach to screen literature (table 1). In stage 1, two research assistants independently will screen the titles and abstract against the following criteria: (1) report health outcomes (eg, mortality, morbidity, prevalence or incidence of diseases); (2) report primary empirical research including quantitative, qualitative and mixed methods research; (3) include terms such as participatory research, action research, CBPR, involvement, collaboration, participation mentioned either in titles or abstract and (4) be published between 2017 and 2023. We focus on the most recent articles to overview how participatory research is conducted. The exclusion criteria are (1) papers published before 2017, (2) commentaries, (3) theoretical/conceptual papers, (4) editorials and letters of correspondence.

In stage 2, the two research assistants independently will read the full articles and include only the papers which report a significant level of participation at each stage of the study. To assess the level of participation, we will classify the studies based on a recent conceptual analysis of involvement to classify projects by types of involvement (table 2). This conceptual framework was used successfully in a realist review on diabetes. As some authors reported, involvement reporting is poor and scattered in several articles. To address this challenge, we will use a cluster searching method, which consists of using project names and members of the author team to identify additional papers describing a particular project. This method is particularly useful for a realist review that collates evidence from thick and rich data on contexts and theories. Authors have been used successfully in a realist review of diabetes research.
Articles should provide information on context, proposed mechanisms and intended (or unintended) outcomes. We will include data inferred by authors or postulated by the research team.

To examine the process and impact of participation, we will follow the guidelines suggested by Harris et al.\(^{21}\) The authors oversee impact as a continuum where different effects are achieved at various levels over different lengths of time.\(^{18}\) We will consider short-term and long-term impacts. We will include the impact of individual, organisational and system levels. We will consider the following examples of short-term outcomes (morbidity, prevalence, incidence of diseases) and long-term outcomes such as mortality, psychological outcomes (self-confidence, self-efficacy, empowerment), health disparities, equity and social outcomes (social capital, transformative learning, resilience, power relations, social justice). The cluster searching method described above will allow us to collate these different stages of outcomes.

We will not restrict by geographic area. We will exclude papers where there was no involvement in the planning, design or conduct of the research or intervention or where the claim of involvement was not explained or evaluated.\(^{18}\) We will search the following electronic databases: PubMed, CINAHL, Web of Sciences and SCOPUS (online supplemental appendix 1). COVIDENCE software will facilitate the screening and selection processes.\(^{22}\) The research team will discuss disagreements and refer to a team research member if required. We will use the reference management software EndNote V.X20 to manage the references.

### Assessing the quality of evidence

Realist reviews do not assess the quality of evidence in the same terms as conventional systematic reviews. Our appraisal will focus primarily on relevance and rigour. Relevance will reflect whether the article contributes to understanding how participatory research works in health interventions.\(^{13,25}\) We will use the realist and meta-review evidence synthesis standard: Evolving standard (RAMSES) guidelines on quality and reporting.\(^{24}\)

### Data extraction and categorisation

We will use the stepwise approach for realist review synthesis designed by Abimbola et al (table 3).\(^{23}\) Two reviewers will pilot the first extraction using a random sample of five articles. A spreadsheet will collate descriptive and analytical information (study objectives, methods, settings, intervention, community/patient role, mechanisms, outcomes and contexts). We will also extract information on how each study’s results were measured or assessed. The pilot will determine the categories for data extraction and ensure the consistency of the extraction process across reviewers. Pilot results will generate a sense of the actions, behaviours, social phenomena and reasoning that could be potentially linked with outcomes in contexts. When data on effects, mechanisms and contexts are not apparent in the results and introduction sections, we will rely on the interpretation and explanation of the authors in the discussion section.\(^{25}\)

When the extraction form is finalised by reviewer consensus, we will look at outcomes and factors that enabled or constrained them. We will label these factors: context. We will then match the outcome-context with an individual or group behaviour that explains them. We will link these sets of behaviour with theories that might explain them. We will draft a list of potential theories as the coding process occurs. We will then refine and adjust the list until we reach a coherent scheme that accounts for the outcomes.\(^{25}\) We, the researchers, will discuss coding disagreements and interpretation discrepancies until we reach a consensus.
Synthesising data in C–M–O configurations
To identify mechanisms, a retroduction exercise will move back and forth from empirical data and theory using inductive and deductive reasoning to explain the outcomes–context matches. Based on our experience with participatory research in a wide range of health interventions and from identifying outcome–context matches in the articles, we will build on existing theories to inform our analysis (online supplemental appendix 2). The recognised theories will allow building the C–M–O configurations. As we better understand the contextual factors that influence the mechanisms and the mechanisms linked to the outcomes that link them to outcomes become clearer, we expect to develop an understanding of how participatory research influences outcomes between contexts and mechanisms. Grounded by C–M–O configurations, we will describe one or more candidate middle-range theories highlighting the links among contextual factors, mechanisms and outcomes.

Internal and external validity
We will ensure internal validity through a coherent and in-depth articulation between theories and empirical data. A generalisation of explanations will enhance external validity. Developing middle-range theories will support the generalisability of explanations for how participatory health research can benefit populations and in what contexts.

The heterogeneity of definitions and applications of participatory research will present a challenge. While participatory research advocates equitable partnerships, we expect the full spectrum of participation, from consultation to determining authorship of the research process and intervention. Classifying the studies within the conceptual framework of involvement will allow us to include only those in which the participation was significant. We expect to modify the scope of the review through initial search and extraction exercises in a random of papers and discussion with the research team.

We expect challenges in fitting evidence in the C–M–O categories in the synthesis stage. We will adopt the approach used by another realist review on the benefits of participatory research to ensure that we do not miss any participatory research outcomes regardless of where an evidence item is placed.

Patient and public involvement
This study is a realist review, including only published literature. However, this study aims to improve participatory health research designs. The results will be disseminated to stakeholders engaged in participatory research through meetings.

CONCLUSION
We anticipate four contributions from this realist review. By highlighting the main mechanisms associated with impact, this review will allow participatory researchers to focus on these mechanisms to increase the effectiveness of their interventions.

Health and social outcomes have complex aetiology. Many processes and structural causal relationships remain unclear. Participatory research triggers psychological and cognitive functions such as self-efficacy, self-esteem, innovation and ownership. The review will provide a better understanding of these cognitive psychological processes and other neurobiological structural relationships in health and social outcomes by exploring mechanisms triggered by participatory research.

Clarifying mechanisms will allow a more explicit definition of stakeholder participation. Ensuring participation in health research and interventions remains a significant challenge. Although participation is highly recommended for different health topics and populations, several systematic reviews concluded that participation remains limited throughout the research process and knowledge translation outputs. This review will

Table 3  Key steps in realist synthesis

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<th>Step</th>
<th>Description</th>
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<tr>
<td>Step 1</td>
<td>Identifying outcomes (description)</td>
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<td>Step 2</td>
<td>Identifying contextual components of outcomes (resolution)</td>
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<td>Step 3</td>
<td>Theoretical redescription (abduction)</td>
</tr>
<tr>
<td>Step 4</td>
<td>Identifying mechanisms (retroduction)</td>
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</table>
shed light on how to engage stakeholders meaningfully in the research process and knowledge translation.

This review could be relevant to academics, non-governmental organisations, community-based organisations and government staff using participatory research to develop, implement and evaluate health interventions.

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**Competing interests**

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**REFERENCES**

is non-terminology, drug names and drug dosages), and is not responsible for any error responsibility arising from any reliance placed on the content. Where the content of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and

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**Not a**

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8. International Association for Public Participation. Spectrum of Public Participation.  

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**Contributors** LB designed the realist review protocol. AR-C and IS developed the search strategy. LB, IS and JPP developed the inclusion/exclusion criteria and contributed to the review’s screening and article selection sections. AD and IS provided expertise in the realist review approach, data extraction and synthesis steps sections. NA and AC contributed to the overall participatory approach of the protocol. LB and NA drafted the manuscript. All authors read, provided feedback on the several drafts and approved the final manuscript.

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Correction: ‘how does participatory research work: protocol for a realist synthesis’


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PUBMED (3,433 results)


SCOPUS (1.503 results)

TITLE-ABS-KEY ("participatory research") OR TITLE-ABS-KEY ("capacity building") OR TITLE-ABS-KEY ("participatory action research") OR TITLE-ABS-KEY ("PAR") OR TITLE-ABS-KEY ("action research") OR TITLE-ABS-KEY ("community-based participatory research") OR TITLE-ABS-KEY ("CBPR") OR TITLE-ABS ("participatory health research") OR TITLE-ABS ("community-engaged research") OR TITLE-ABS ("Community Participation") OR TITLE-ABS ("community members") OR TITLE-ABS ("participatory learning and action") OR TITLE-ABS ("research-to-practice partnerships") OR TITLE-ABS ("transformative research") AND TITLE-ABS-KEY ("health outcome")

CINAHL – EBSCO (2,556 results)

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<td>3,816</td>
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**Web of Science (605 results)**

( TI = ("community-based participatory research" OR "Capacity Building" OR "participatory research" OR "participatory action research" OR PAR OR "action research" OR "community-based participatory research" OR CBPR OR "participatory health research" OR "community-engaged research" OR "Community Participation" OR "community members" OR "participatory learning and action" OR "research-to-practice partnerships" OR "transformative research" OR partnership)) AND ( TS = ("health research") AND LA=("ENGLISH" OR "FRENCH"))
Appendix 2. Potential theories to be used for step 3: Theoretical redescription.

- **Freire’s critical pedagogy**: a philosophy in education and social movements. Teaching and learning are not different from social justice and democracy in this philosophy. In Freire’s work, the education system helps the dominant groups keep their position over the oppressed and uses knowledge to reproduce social injustice. Freire’s work encourages deprived students, communities, and populations to analyze the structural factors for their oppression and make significant changes in societal power structures. Thus, the goal of education must be emancipation from oppression through awakening the **critical consciousness** defined as an understanding of political forces, contradictions, and social and economic inequalities. When critical consciousness is achieved, individuals can intervene in their social reality to make changes.

- **The Italian labour’s movement’s alternative operaia or worker’s management approach**: The labour movement significantly transformed productivity processes and management practices in the 1950-1960s in Italy. The main goal was to create effective collaboration between management and workers. Their *modus operandi* focused on (i) increasing workers’ skills and competence in measurement and tools, (ii) establishing workers’ committees, (iii) valuing workers’ subjectivity, experiences, and perceptions, (iv) discussion and validation of evidence by workers (v) the engagement of “experts” only when workers led the process. Key lessons can be drawn from this approach to participatory research: (i) Participants’ knowledge, experience, and perceptions are valued. Their skills and competence are not fixed and can evolve through training. The more participants gain skills, the more sense of ownership they feel and can use to address issues that affect them. (ii) Evidence is contextualized to participants’ lives and social realities. Evidence needs to make sense to participants. (iii) Problem-solving results from collective actions and (iv) Knowledge is produced collectively.

- **Theories on power in participatory research**: Power dynamics shape decision-making processes and relations between academics and community partners. The social ecology of power framework in participatory research offers a lens on how power can operate synergistically at the micro, meso, and macro levels. The micro-level involves an investigation of individual attitudes and values through self-reflexivity and cultural humility. The meso level examines power dynamics in a multi-stakeholder team through effective dialogue and project governance structures. The macro-level highlights power dynamics within socio-political systems, historical factors, power distribution, resources, governance, and laws. Participatory research operates within these power dynamics through these three levels. Successful participatory research acknowledges these power dynamics and aims to build equitable partnerships and co-governance in the decision-making process through cultural safety and inter-cultural dialogue.