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A scoping review of public involvement methods

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Title:

Public involvement in the planning, development, and implementation of community health services: A scoping review of public involvement methods

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Public involvement in the planning, development, and implementation of community health services: A scoping review of public involvement methods

Abstract

Services have improved due to public involvement in the planning, development, and implementation of health services. A wide range of public involvement methods, based on highly diversified methodological approaches and conceptualizations, have been developed. However, the extensive growth of new and different involvement methods lacks consistency and promotes uncertainty about which methods to apply when, how, and why. Aiming to identify, chart, and summarize public involvement methods in the planning, development, and implementation of community health services, we conducted a systematic search in April 2021. Seven databases were searched: CINAHL, Cochrane, Embase, PsycINFO, PubMed, ProQuest, and Scopus. The systematic facet search corresponded with the PCC framework: *Patient (P)*, *Concept (C)*, and *Context (C)*. A descriptive synthesis and a thematic analysis of included studies were conducted. Thirty-nine studies met the inclusion criteria. Two main categories of public involvement methods were identified: multiple methods approaches and single method approaches involving a variety of involvement activities. The characteristics of the two categories of methods were coded in accordance with methodological approach, activity, and facilitation technique. The majority of the studies' methodological approach was either participatory or community-based. A variety of techniques to facilitate group discussions, sharing of ideas, and group processes were used. The results provide an overview of the characteristics of different public involvement methods, which may inform agencies and practitioners in choosing appropriate methods to qualify the public involvement in planning, developing, and implementing community health services. Further research is needed on how to manage public involvement in the implementation of community

health services. In addition, rigorous evaluation studies of the impact of public involvement methods are needed.

Keywords: Public Participation, Community Participation, Community Involvement, Community Health Services, Community Health Care, Review, Methods

What is known about this topic:

- Public involvement is highlighted as meaningful and beneficial for the people involved and for the quality of services
- Heterogeneity and conceptual vagueness in the rapidly expanding involvement methods has resulted in poor comparability and uncertainty about which methods to apply and how

What this paper adds:

- Multiple methods approaches and single method approaches are the two main categories of public involvement methods identified, including a variety of different methodological approaches, involvement activities and facilitating techniques
- An overview of the body of empirical research on public involvement methods, primarily in planning and development of community health services
- Future research should focus on evaluating public involvement methods and on public involvement in service implementation

Introduction

The past decade has brought increasing interest in public involvement in the planning, development, and implementation of community health services as a mean to improve services and health outcomes. The selection and adaption of appropriate methods are however, hampered by a highly heterogeneous conceptualization of public involvement in the rapidly growing body of literature (Mockford, Staniszewska, Griffiths, & Herron-Marx, 2012). This has resulted in a confusing array of public involvement methods.

Public involvement refers to how the lay communities and individuals can participate in decisions about the development and planning of health services (Coulter, 2012). The involvement in organizational decision-making seeks to shape the development and planning of health services (Coulter, 2012). Involvement of the public in the planning and development of community health services ranges from information giving to direct decision-making (Coulter, 2012; Florin & Dixon, 2004; Mockford et al., 2012). There is no consensus on the desired level of influence on decisions offered to the public through the different involvement methods.

While public involvement is believed to offer a promising pathway for improving the quality and efficiency of public healthcare (Sarrami-Foroushani, Travaglia, Debono, & Braithwaite, 2014), we have seen an extensive growth in the number of methods to involve service users in the planning and development of health services. Because of the heterogeneity and conceptual vagueness of the present involvement methods a high degree of variance is shown (Sarrami-Foroushani et al., 2014), resulting in poor comparability and uncertainty (Staniszewska et al., 2011). In addition, the literature suggests a risk of unintended negative consequences of public involvement, which may harm some individuals (Attree et al., 2011). These consequences include

exhaustion and stress (Attree et al., 2011). At This may create challenges for those working in the field.

A first step to remedy this is to identify and bringing together existing knowledge from primary empirical studies and provide a systematic overview and examination of the characteristics of public involvement methods in the planning, development, and implementation of community health services. Hereby, this review seeks to produce new insights that may inform local agencies in decisions concerning identification of appropriate methods for involvement in planning, development, and implementation of community health services.

Aim

The aim is to identify, chart and summarize public involvement methods for the planning, development, and implementation of community health services.

Methods

Our systematic scoping review of public involvement methods was inspired by the framework developed by Arksey and O'Malley (2005) and advanced by Levac et al. (2010). We followed the first five steps in the framework: 1) identifying the research question 2) identifying studies 3) selecting studies 4) charting data 5) collating and summarizing the results. The PRISMA extension for Scoping Reviews reporting guideline has been followed throughout the study (Tricco et al., 2018).

The aim of the study was first operationalized into two research questions (RQ) to guide our search.

RQ 1: *Which public involvement methods are used in the planning, development, and implementation of community health services?*

RQ 2: *What characterizes these public involvement methods?*

Search strategy

From October 15 to November 13, 2019, and updated on April 7, 2021, a systematic search was conducted in seven databases: CINAHL, Cochrane Library, Embase, PsycINFO, PubMed, ProQuest, and Scopus. Prior to the search, several preliminary searches were conducted in PubMed and Embase to specify terms for the concept of the research question (Peters, Micah D. J. et al., 2015). Using both thesaurus terms and text searches, a comprehensive literature search was conducted in accordance with a search strategy developed in collaboration with three information specialists. Guided and directed by the scope of the RQ's the systematic facet search corresponded with the PCC framework: *Patient (P)*, *Concept (C)*, and *Context (C)*, which is particularly useful for bringing together existing knowledge on a specific topic (Peters et al., 2015; Peters, Micah DJ et al., 2020). Following Livoreil et al. (2017) the first facet included the study subject: public involvement. We thus modified the model for this review by substituting Briggs' *Patient* with *Subject* to allow for eligibility of studies involving a variety of public involvement methods in community health services. The overall terms representing the concepts were: (1) Public involvement, (2) Public involvement methods, and (3) Community health services. An example of a full electronic search is presented in Table 1. As search terms differ across databases, we operationalized terms related to the three facets into specific thesaurus terms and text searches suitable for each database and to ensure for optimal coverage in the knowledge base. Truncation (*) accommodated word

inflection, while phrase searching (“...”) was used for specific word strings, e.g., “Health care planning”.

INSERT TABLE 1 about here

Criteria for inclusion

We included peer-reviewed qualitative and quantitative empirical studies and full-length articles according to the following criteria: 1) focus on the involvement of service users/citizens/public, 2) a description of the public involvement methods used must be provided, and 3) focus on involvement in the planning, development, and implementation of community health services.

Criteria for exclusion

Reviews, dissertations, book chapters, and commentaries were excluded, as the studies had to be peer-reviewed, primary empirical studies. As well were studies of shared decision-making in healthcare or rehabilitation conducted in hospital settings and shared decision-making in individual health care planning.

The process of inclusion and selection of studies

In the three-step inclusion process (Levac et al., 2010; Peters et al., 2015) two independent reviewers first assessed titles and abstracts according to the outlined criteria. All authors met during the beginning, middle, and final stages of the process to discuss challenges and questions concerning study selection criteria. The identified studies were subsequently shared among three

independent reviewers, each of whom screened two thirds of the identified studies, so that each article was handled by at least two authors. The three reviewers initially met to test the full-text screening process and minimize processual variance, thus enabling an iterative process of refinement of criteria. Disagreement among the reviewers during the screening process was discussed, and, if required, a fourth reviewer was involved to make a final decision regarding eligibility (Levac et al., 2010). All the identified studies were transmitted to EndNote X9 and screened for duplicates.

Appraisal of adequacy of the reported public involvement methods

To inform practitioners on how informative the descriptions of the public involvement methods appeared in the included studies, the adequacy in reporting was appraised by the first author, who used a simple checklist. The checklist was developed with inspiration from a review by Movsisyan et al. (2019). The appraisal focussed on criteria regarding practicality and legitimacy (Movsisyan et al., 2019).

Practicality addressed two issues: 1) adequacy and rigour of the study's understandability and clarity of key constructs, and 2) ease of use and operationalizability of the applied public involvement method.

Legitimacy was assessed on basis of the adequacy of the study's description of the rationale or underlying theory of the applied public involvement method. A rating score on 0-2 points per part of the appraisal (- : "not described at all"; + : "partially described"; ++ : "fully described") were assigned (see Table 3). All studies were included, independent of their rating score, as the scoping

review aimed to identify, chart and summarize existing literature and thereby provide an overview of methods of public involvement and not identify and assess the most efficient methods.

Charting the included studies

The team collectively developed the data charting form concerning extraction on variables answering the research question (Levac et al., 2010). Extracted variables were refined to secure that all relevant results were extracted from the identified studies (Peters et al., 2015). The extracted materials were charted about the public involvement methods focussed on the methodological approach, activity, and facilitating technique, the stated aim of public involvement and the participants involved (Table 5). To strengthen the systematics in charting the data of public involvement methods these were operationalized into the variables methodological approach, activity, and facilitating technique: The *methodological approach* is characterized by the underlying assumptions and set of values of the given method. *Activity* refers to the practical aspects in terms of the planning, development, and implementation of community health services. *Facilitating technique* describes the facilitation of the involvement process.

Collating, summarizing, and reporting of results

The results were summarized and reported in a three-step process: 1) data analysis 2) reporting of results, and 3) conclusion and implications for practice (Levac et al., 2010; Peters et al., 2015).

In the first step, the analysis of data was divided into three sub-steps:

1a) descriptive numerical summary, covering the total number of included studies, type of study design, aim of the study, involvement activity, and evaluation of the activity if any (Table 2).

1b) thematic analysis based on Braun and Clarke's thematic analysis (2006), involving a line-by-line coding of relevant data from the included studies and a thematic structuring of the coded data

1c) refining themes to identify their essential characteristics (Braun & Clarke, 2006).

Step two summarized the results of the analysis, addressing the overall purpose of the study (Levac et al., 2010). Following Peters et al. (2015) the results of our systematic scoping review were represented in a mapping of data and in a description that aligned to the aim and scope of the review, as represented in Table 5.

In the third and final step, conclusions and implications for research and practice were formulated (Levac et al., 2010; Peters et al., 2015). Our conclusion offers a summary of the results, while the discussion considers the significance of the review and its broader implications for future research and practice.

Results

The systematic literature search identified 7,401 studies of which 39 met the outlined criteria (Figure 1).

INSERT Figure 1 PRISMA flow diagram about here

The 39 included studies

INSERT Table 2 Characteristics of the 39 included studies about here.

Over the past three decades, a large number of articles describing public involvement methods have been published. As Table 2 shows, only three of the included studies were published during

the 1990s. Fifteen studies were published in the first decade of this millennium, while eleven studies emerged between 2010 and 2021 (end of search). The majority of the 39 studies were conducted in English-speaking countries (twelve in the UK, thirteen in the USA, five in Australia, two in Canada, two in Italy, and one in Spain, Norway, Sweden and Finland. One study was transnational).

The 39 studies pursued very different aims, which were categorized as follows: 1) public involvement in the design and/or planning of health services (Carlisle, Farmer, Taylor, Larkins, & Evans, 2018; Clark, 1997; Crowley, Green, Freake, & Drinkwater, 2002; Farmer & Nimegeer, 2014; Green, Considine, Parkinson, & Bonevski, 2004; Katzburg et al., 2009; Khodyakov et al., 2014; Lee, Thompson, & Amorin-Woods, 2009; Myers et al., 2020; Nimegeer, Farmer, Munoz, & Currie, 2016; Twible, 1992; Valaitis et al., 2019; Woods, 2009), 2) public involvement in the development of existing or new health services (Díez et al., 2018; Jeffery & Ervin, 2011; Katzburg et al., 2009; LaNoue, Mills, Cunningham, & Sharbaugh, 2016; Lazenbatt, Lynch, & O'Neill, 2001; Munoz, 2013; Muurinen, 2019; Nancarrow, Johns, & Vernon, 2004; Owens et al., 2010; Rains & Ray, 1995; Risisky et al., 2008; Rosén, 2006; Rowa-Dewar et al., 2008; Seim & Slettebø, 2011; Timotijevic & Raats, 2007; Uding, Kieckhefer, & Trahms, 2009; Winter et al., 2016; Yankeelov, Faul, D'Ambrosio, Gordon, & McGeeney, 2019), 3) evaluation of one or several public involvement methods (Carlisle et al., 2018; Goold, Biddle, Klipp, Hall, & Danios, 2005; Khodyakov et al., 2014; Lamb et al., 2014; Lee et al., 2009; Serapioni & Duxbury, 2012; Timotijevic & Raats, 2007), or 4) descriptions of the application of public involvement methods (Morain, Whicher, Kass, & Faden, 2017; Velonis et al., 2018; Wainwright, Boichat, & McCracken, 2014; Wang, 2006).

A single study was designed as a quantitative intervention study, another as a survey, while eight used a mixed-methods design. The remaining 28 studies used various approaches and qualitative designs: 10 studies applied community-based or participatory approaches, seven studies were designed as evaluations, seven as case studies, four were qualitative studies and one a feasibility study (Table 2).

Twenty-two of the 39 studies contributed with knowledge on the applied public involvement methods. Among the 22 studies, seven contributed with knowledge based on evaluative design studies, 14 studies contributed with knowledge gleaned from non-experimental and qualitative study designs, while one study contributed with knowledge extracted from surveys (Table 2).

INSERT Table 3 Appraisal of the applied public involvement methods about here

Inspired by Movsisyan et al. (2019), the applied public involvement methods were appraised with regard to practicality and legitimacy.

Practicality

Twenty-one studies (Díez et al., 2018; Goold et al., 2005; Green et al., 2004; Lamb et al., 2014; LaNoue et al., 2016; Morain et al., 2017; Munoz, 2013; Myers et al., 2020; Owens et al., 2010; Rains & Ray, 1995; Risisky et al., 2008; Rowa-Dewar et al., 2008; Timotijevic & Raats, 2007; Twible, 1992; Valaitis et al., 2019; Velonis et al., 2018; Wainwright et al., 2014; Wang, 2006; Winter et al., 2016; Woods, 2009; Yankeelov et al., 2019) provided a fully *understandable and clear* description of the key constructs of the public involvement method, including stepwise instructions for a

replication of the public involvement method. Seventeen studies (Carlisle et al., 2018; Clark, 1997; Farmer & Nimegeer, 2014; Iyer, Pancake, Dandino, & Wells, 2015; Jeffery & Ervin, 2011; Katzburg et al., 2009; Khodyakov et al., 2014; Lazenbatt et al., 2001; Lee et al., 2009; Muurinen, 2019; Nancarrow et al., 2004; Nimegeer et al., 2016; Rosén, 2006; Seim & Slettebø, 2011; Serapioni & Duxbury, 2012; Uding et al., 2009; Zani & Cicognani, 2009) provided a partial description of the key constructs and procedures, but provided inadequate instructions on replication. One study (Crowley et al., 2002) failed to describe the key constructs of the public involvement method in a clear and understandable way (Table 3).

With respect to the *ease of use and operationalizability*, 18 studies (Díez et al., 2018; Goold et al., 2005; Green et al., 2004; Khodyakov et al., 2014; LaNoue et al., 2016; Myers et al., 2020; Owens et al., 2010; Rains & Ray, 1995; Risisky et al., 2008; Rowa-Dewar et al., 2008; Timotijevic & Raats, 2007; Valaitis et al., 2019; Velonis et al., 2018; Wainwright et al., 2014; Wang, 2006; Winter et al., 2016; Woods, 2009; Yankeelov et al., 2019) gave full descriptions of the operationalization of their public involvement method. A further 16 studies (Carlisle et al., 2018; Farmer & Nimegeer, 2014; Jeffery & Ervin, 2011; Lamb et al., 2014; Lazenbatt et al., 2001; Morain et al., 2017; Munoz, 2013; Muurinen, 2019; Nancarrow et al., 2004; Nimegeer et al., 2016; Rosén, 2006; Seim & Slettebø, 2011; Serapioni & Duxbury, 2012; Twible, 1992; Uding et al., 2009; Zani & Cicognani, 2009) provided a partial description the operationalization of the key constructs and procedures. In five studies (Clark, 1997; Crowley et al., 2002; Iyer et al., 2015; Katzburg et al., 2009; Lee et al., 2009) there was no description of the operationalization of the key constructs and procedures (Table 3).

Legitimacy

Eighteen studies (Carlisle et al., 2018; Díez et al., 2018; Goold et al., 2005; Khodyakov et al., 2014; Lamb et al., 2014; Lazenbatt et al., 2001; Muurinen, 2019; Myers et al., 2020; Rains & Ray, 1995; Rowa-Dewar et al., 2008; Seim & Slettebø, 2011; Serapioni & Duxbury, 2012; Valaitis et al., 2019; Velonis et al., 2018; Wainwright et al., 2014; Winter et al., 2016; Woods, 2009; Zani & Cicognani, 2009) offered an adequate description of the underlying theory and/or principles on which the public involvement method was based. These studies were typically based on the participatory action research and community-based research approach. Fourteen of the studies (Farmer & Nimegeer, 2014; Iyer et al., 2015; Jeffery & Ervin, 2011; LaNoue et al., 2016; Morain et al., 2017; Munoz, 2013; Nimegeer et al., 2016; Owens et al., 2010; Rosén, 2006; Timotijevic & Raats, 2007; Twible, 1992; Uding et al., 2009; Wang, 2006; Yankeelov et al., 2019) this aspect was partially addressed. Seven studies (Clark, 1997; Crowley et al., 2002; Green et al., 2004; Katzburg et al., 2009; Lee et al., 2009; Nancarrow et al., 2004; Risisky et al., 2008) failed to report on underlying theory or principals (Table 3).

INSERT Table 4 Identification of the different involvement activities about here

As seen in Table 4, the identified involvement activities have been categorized in seven different involvement activities. The far majority of the included studies applied a multiple methods approach, while fewer studies has applied either workshops, user panels and committees, user groups, nominal group technique, focus groups or photovoice separately.

We identified two main categories of public involvement methods (Figure 2): 1) a multiple methods approach (n = 23) and 2) single method approach organized as: workshops (n=4), user

panels and committees (n = 3), user groups (n = 5), using nominal group technique (n = 2), or photo voice (n = 1) or focus group (n = 1) (Table 2).

INSERT Figure 2: A conceptual model of key findings

Multiple methods approach

Twenty-three of the 39 studies applied a multiple methods approach based on various methodological approaches and facilitating techniques to involve the public in the planning, development, and implementation of community health services (Table 5).

INSERT Table 5 Analytic table of the 39 included studies about here

We identified nine approaches of primarily theoretic orientation, which were linking the applied involvement activity. Participatory and community-based methodological approaches were used to explain the links between the applied involvement activity and a set of values and overall conceptual understandings of the meaning and purpose of encouraging public involvement in the planning, development, and implementation of services. The nine methodological approaches identified were:

- 1) Participatory Research Approaches (Carlisle et al., 2018; Lamb et al., 2014; LaNoue et al., 2016; Munoz, 2013; Rains & Ray, 1995; Risisky et al., 2008; Velonis et al., 2018; Zani & Cicognani, 2009),
- 2) Community Based Research Approaches (Clark, 1997; Crowley et al., 2002; Díez et al., 2018; Khodyakov et al., 2014; Morain et al., 2017; Winter et al., 2016; Woods, 2009),
- 3) Community Health needs assessment (Green et al., 2004),
- 4) Political dialogue (Rosén, 2006),
- 5) Collaborative approach (Jeffery & Ervin, 2011) and
- 6) Deliberative Engagement Methods (Timotijevic & Raats,

2007), 7) Experiment-driven Innovation Approach (Muurinen, 2019), 8) Patient-centred programme (Katzburg et al., 2009), and 9) Appraisal Approaches (Lazenbatt et al., 2001; Rowa-Dewar et al., 2008).

Characteristic of the multiple methods approaches were the application of various involvement activities during the involvement process. From identifying needs through survey, as done in the study by Green et al. (2004), to arranging dialogues through focus group activities as reported in the study by Clark (1997). Other studies such as LaNoue et al. (2016), Risisky et al. (2008) and Velonis et al. (2018) help prioritize future services and invited the public in decision-making.

Various activities and research methods were used to collect information about user needs and preferences for services. These methods included surveying (Green et al., 2004; Lazenbatt et al., 2001; Morain et al., 2017; Munoz, 2013; Rains & Ray, 1995; Rosén, 2006; Woods, 2009) or interviewing (Clark, 1997; Lazenbatt et al., 2001; Morain et al., 2017; Munoz, 2013) and a variety of group activities to collect information about the target groups' perception of needs and wishes. In other cases, focus groups (Clark, 1997; Green et al., 2004; Katzburg et al., 2009; Lamb et al., 2014; Lazenbatt et al., 2001; Woods, 2009; Zani & Cicognani, 2009), seminars (Muurinen, 2019), workshops, workgroups and peer groups (Carlisle et al., 2018; Clark, 1997; Lamb et al., 2014; Muurinen, 2019; Timotijevic & Raats, 2007; Woods, 2009) were used. Still, other studies used meetings of juries, panels, committees, or forums (Crowley et al., 2002; Jeffery & Ervin, 2011; Katzburg et al., 2009; Rains & Ray, 1995; Timotijevic & Raats, 2007; Woods, 2009), meetings in general (Green et al., 2004; Jeffery & Ervin, 2011; Khodyakov et al., 2014; Munoz, 2013; Rosén,

2006; Rowa-Dewar et al., 2008), or series of meetings using concept mapping (LaNoue et al., 2016; Risisky et al., 2008; Velonis et al., 2018).

Eleven studies reported using various techniques to facilitate the involvement process, including nominal group techniques (Díez et al., 2018; Green et al., 2004; Zani & Cicognani, 2009), rapid appraisal methods (Rowa-Dewar et al., 2008), strategic planning action (Woods, 2009), information gathering and champions (Lamb et al., 2014), brainstorming (Muurinen, 2019), deliberative engagement methods (Morain et al., 2017), information-sharing, mapping, prioritizing (Munoz, 2013), or concept mapping (involving brainstorming, sorting, grouping and prioritizing statements) (LaNoue et al., 2016; Risisky et al., 2008; Velonis et al., 2018).

Overall, a range of involvement activities were applied, e.g., generating data for needs assessment of individuals and groups or involving users in decisions relating to the provided services, including the design and delivery of services to influence future services and political priorities (Table 5).

The participants, individuals or communities, participating in the activities and facilitation processes had particular need for support. In some studies, a variety of stakeholders were involved, e.g., social and health professionals/specialists, politicians, managers of services and schools, and sports representatives (Table 5).

Single method approach

Sixteen of the 39 studies used a single method approach as an overall method to involve the public in the planning, development, and implementation of community health services. In line with the multiple methods approaches to public involvement, single method approaches were

based on different methodological approaches, involvement activities, and facilitating techniques. The involvement activities were organized as either workshops, user panels and committees, user groups, focus groups, or meetings using nominal group techniques and photovoice (Table 5). Some of these involvement activities were also seen used in the multiple methods approach, but in the 16 studies presented here, only one involvement activity was applied. The single method approach allowed for different types of group discussions among the invited participants. E.g., in the study by Owens et al. (2010) workshops were arranged inviting service users with lived experience and clinicians in the development of a text-messaging intervention to reduce repetition of self-harm.

Workshops

Four of the 39 studies used workshops as the involvement activity (Farmer & Nimegeer, 2014; Nimegeer et al., 2016; Owens et al., 2010; Valaitis et al., 2019). Various approaches to conducting workshops were taken, such as community-based participatory action research (Farmer & Nimegeer, 2014; Nimegeer et al., 2016), developmental evaluation, or participatory design methods (Valaitis et al., 2019). For one study, no methodological approach was reported (Owens et al., 2010). The studies used a number of different facilitating techniques, including pair work, group or plenary discussions, and note-taking by organizers, using practical tools such as flipcharts and post-it notes, community meetings, and giving feedback on the process (Table 5). A number of aims of the activities were observed: involving the public in a reconfiguration of services (Nimegeer et al., 2016), inviting users to take a key role in the development of interventions (Owens et al., 2010), engaging users in co-designing interventions (Valaitis et al., 2019), encouraging communities to ask questions about local health and health services, informing policy-makers about priority and design of services, including health practitioners and managers in

discussions and evidence-sharing (Farmer & Nimegeer, 2014). The aims of involving the public therefor varied from inviting to participation in developing interventions to more comprehensive multi-component aims (Table 5).

User Panels and Committees

Three of the 39 included studies established user panels and committees as involvement activity (Iyer et al., 2015; Nancarrow et al., 2004; Serapioni & Duxbury, 2012). This was done through community-partnered participatory research (Iyer et al., 2015) or a deliberative approach (Serapioni & Duxbury, 2012). No methodological approach was reported for the study of Nancarrow et al. (2004). The single method approach was used to activate discussion among participants (Iyer et al., 2015; Nancarrow et al., 2004; Serapioni & Duxbury, 2012). The techniques applied were facilitation using guidelines as a tool to lead the single method approach (Nancarrow et al., 2004) as well as community-building narratives with a focus on general medical health and wellbeing from the perspective of user and practitioners' experiences (Iyer et al., 2015). Serapioni & Duxbury's (2012) study reported no facilitation technique. Two studies reported the aim of their public involvement method, viz. to address the identified barriers in order to develop successful and sustainable general medical interventions (Iyer et al., 2015) or to include users in decision-making in healthcare (Serapioni & Duxbury, 2012).

User Groups

Five of the 39 studies applied various of user groups as involvement activity (Goold et al., 2005; Lee et al., 2009; Myers et al., 2020; Seim & Slettebø, 2011; Yankeelov et al., 2019). Their methodological approaches were: the participatory approach (Goold et al., 2005), the participatory action research approach (Seim & Slettebø, 2011), or the community-based

approach (Lee et al., 2009; Myers et al., 2020; Yankeelov et al., 2019). The activities undertaken were CHAT (Choosing Healthplans All Together) involving a group exercise in participatory decision-making to engage the public in healthcare priority setting (Goold et al., 2005; Myers et al., 2020), World Cafés (Yankeelov et al., 2019), a dialogue-based participation group (Seim & Slettebø, 2011), and a consumer reference group (Lee et al., 2009). The group techniques for facilitation of the involvement activity included engagement in priority settings, sharing of experiences and ideas, and dialogue. Where user groups were engaged, the aims of public involvement spanned from advancing individual and collective understandings of resource allocation (Goold et al., 2005; Myers et al., 2020), to knowledge production, to promoting pathways for collective user participation (Seim & Slettebø, 2011) to planning and improving prevention programmes and access (Lee et al., 2009; Yankeelov et al., 2019).

Nominal Group Technique

Two studies applied nominal group techniques as the involvement activity (Twible, 1992; Wainwright et al., 2014). One of the two studies that applied nominal group technique characterized their approach as contextual cognitive behavioural therapy (Wainwright et al., 2014). The studies by Twible and Wainwright reported several techniques to facilitate the public involvement process. The study of Wainwright et al. (2014) reported a thorough 10-stage description of the conduct of the single method approach, which involved the silent generation of ideas by listing ideas on flipcharts and clarification of issues, choosing and prioritizing individual top 10 lists, determining the collective top 10 issues, followed by their re-ranking and rating. The facilitation of meetings and help in ranking responses to questions also appeared in the study by

Twible (1992). Involving the public aimed at synthesizing user's preferences (Wainwright et al., 2014) or planning content or strategies of health promotion programmes (Twible, 1992).

Focus Groups

One study used focus groups with a family-centred care approach as an involvement activity to involve the public in the revision of an existing programme (Uding et al., 2009). To facilitate the process, a moderator and a note-taker were present, discussions were held, and questionnaires were used to evaluate the public involvement process. The aim of the study was to obtain comments on the revision of an intervention and focus groups was defined as the applied method for involving users (Uding et al., 2009).

Photovoice

Another study used photovoice as an activity to involve the public in developing a strategy for community change (Wang, 2006). Several techniques to facilitate the involvement activity were used: brainstorming, group discussions, and the presence of a facilitator of photovoice rounds followed by photo exhibitions.

The aim of involving the public by using photovoice as an involvement activity was three-fold: to record and represent their everyday realities, to promote critical dialogue and knowledge about personal and community strengths and concerns, and to the participants were heard by policymakers (Wang, 2006).

Participants across different single method approaches

Participants in the group meeting were: community members, service users, relatives of users, volunteers, service providers, professionals, researchers, service managers, and local politicians (Table 5).

Summary and final synthesis of findings

Two categories of public involvement methods are outlined above: multiple methods approach and single method approach. They appeared to differ mainly in the application of their involvement activities. The multiple methods approach used a combination of different activities over a longer period to involve users. Not only to identify needs but also in an involvement process in making priorities and recommendation for future services. Whereas the single method approach only appeared as single events with a narrower aim, e.g., to identify the needs of those involved.

Despite the variety in the public involvement methods, the majority of the included studies used either participatory or community-based methodological approaches, which involved a variety of facilitation techniques.

Across the multiple methods approaches and single method approaches, the reported methodological approaches appeared to serve as a fundamental base with a decisive influence on the aim of the public involvement and the combination of involvement activities. The aim of the public involvement across all included studies mainly covered engaging and involving the public in planning, development, and implementation of health services such as; empower participants, promote knowledge production and enhance individual and collective understanding of health services; encourage to take leadership, negotiate matters concerning health services, ask questions and promote critical dialogue and identify needs, barriers and facilitators. Connections

were identified between the aim and the methodological approach taken to public involvement. The analysis identified five types of aims of public involvement with participatory or community-based approaches: 1) empowerment, 2) facilitation of critical dialogue between public citizens and policymakers, 3) identifying and understanding participants' needs, 4) ranking and negotiation of the needs, and 5) participation in development, design, implementation, and evaluation to ensure that interventions are feasible and acceptable.

Several facilitating techniques to achieve these aims were reported. The chosen facilitation techniques appeared to be closely connected with the methodological approaches. This was evident as the applied facilitation techniques focused on the involvement processes, which indicates a focus on collective involvement (in contrast to individual involvement), dialogue, supporting relationships, listening to the participants, and empowerment. Consequently, the most frequently used techniques were facilitation and moderation of the group processes during dialogue and sharing ideas.

Throughout the examined studies, it appeared that all studies were based on group activity with collective rather than an individual focus. Although the content of the single method approaches was sparsely described, the organization of involvement activities seemed to support the facilitation of dialogue (Table 3).

Discussion

This systematic scoping review identified two main categories of public involvement methods. The characteristics of these methods provide an inventory of applicable methods that may inform local agencies in decision makings concerning appropriate involvement methods. The first category of public involvement methods encompasses multiple methods approaches, while the defining

feature of the second category is a single method approach. The two categories cover a range of seven different involvement activities (Table 4). The multiple methods approach apply a thorough, stepwise approach, using involvement activities from planning to development and implementation with a description of facilitation techniques, which enhances the practicality and usability. The transparency of these multiple methods approaches was improved by performing an evaluation.

In contrast to the highly varied multiple methods approach, the single method approach included single involvement activities with a narrow aim. Single method approaches were often applied as an overarching organizing structure. Thus, the opaque reporting of the involvement activity and facilitation technique makes it less transparent. Hence, the findings concerning the single method approach as a method to involve the public are in line with previous research (Sarrami-Foroushani et al., 2014; Staniszezwska et al., 2011) that has found conceptual vagueness and uncertainty concerning the optimal involvement of the public in community health services. Involvement of the public can vary greatly as noted by the Engagement Spectrum framework developed by the International Association for Public Participation (2014). This Spectrum is helpful in clarification of the role of the public in planning processes and delineates five levels of engagement, spanning from the lowest levels of participation informing the public to the highest levels of participation empowering the public by placing final decisions among the involved (ref.). The two main categories of involvement methods identified in this review differs in the level of participation. Our findings show that multiple methods approaches are not only applied to identify needs but also to involve users in making priorities and recommendation for future services. Single method approaches on the other hand mainly appear as single events with a narrower aim, e.g., to identify needs. Among the included studies, an inherent desired level of

influence on decisions offered to the public, appears. Awareness of the aim of the involvement can help inform local agencies to reflect on the connection between the aim, the desired level of influence offered and the choice of appropriate involvement methods and activities.

The two identified categories of involvement methods share some facilitation techniques. Our review has identified common elements in the involvement activities such as facilitation, discussion, and the sharing of ideas mainly through group processes. We have also found that activities to promote involvement, such as in the nominal group, may occasionally also serve as facilitating techniques.

By far the majority of the 37 studies included here focus on involving the public in either the design and/or planning of health services or in the development of existing or new community health services. As already noted by other studies, the scarcity of empirical research on public involvement in the implementation of health services hampers the upscaling of interventions and adaption of health interventions in other contexts (Glandon, Paina, Alonge, Peters, & Bennett, 2017; Movsisyan et al., 2019). Especially on a community level, public involvement in the implementation of health services has proved a challenge (Glandon et al., 2017). Due to the limited empirical study on public involvement methods in implementation of services, we are unable to conclude whether public involvement methods gleaned from planning and development processes are easily adapted to implementation processes. However, a randomized trial process evaluation by Boivin et al. (2014) has shown that legitimacy, credibility, and power are potential key ingredients in public involvement processes in relation to both the development and implementation of health services. We therefore find it likely that public involvement methods concerning the planning, development, and implementation of health

services have common characteristics. However, further research is needed, to guide public involvement in the implementation of community health services and the benefits of using research methods as an involvement activity.

The majority of studies applied involvement activities based on either participatory or community-based approaches (Table 5). According to Branom (2012) the aim of a community-based participatory approach is to be participatory, cooperative, empowering and justice-oriented. The community-based participatory approach thus reveals an ideal of strong involvement of the public through planning, development, and implementation processes, which can be achieved through listening to community members in order to understand their needs. The facilitation of dialogue among community members to address these needs and involving the community to resolve problems and promote growth are other means. Such practices match the aim of the identified involvement activities identified in our study, viz. to identify and rank local health needs, empower the participants, and engage the general public in service development and improvement. The chosen methodological approach to public involvement supports the aim of public involvement, e.g., the participatory and community-based approaches provided an explanation of why the applied involvement activity was used and for what purpose.

Community-based participatory approaches are supported by various theoretical orientations such as critical theory, feminist theories, and ecological theories (Branom, 2012). Their emphasis on the strengths of the community positions them in contrast to traditional methods of social work with a focus on medical problems and deficits (Branom, 2012).

Our review elucidates several facilitating techniques applied across the different methods for facilitation of the involvement processes. The techniques range from supporting

users to share and identify their lived experiences and individual needs to prioritizing and formulating ideas for future services. The most widely used technique involves the presence of a facilitator or moderator to lead the involvement activities. Boivin et al. (2014) has outlined the role of a professional moderator, focusing on facilitating effective group processes, their settings, and ground rules in order to promote equality among the participants and create a comfortable space for expressing divergent opinions. As the moderator promotes a sense of security, groups of citizens with little experience of public involvement are enabled to make themselves heard and encouraged to participate (Boivin et al., 2014). Our findings show that the presence of a facilitator substantiates the social processes during the involvement process. More than merely applying a specific involvement method, the stimulation of public involvement seems to require someone to facilitate the process and ensure that people are being heard. Attention to social processes is essential to achieving more than a shallow involvement process, and it is evident that the facilitator plays an important role in promoting efficient processes.

The evaluations of the applied public involvement methods took various forms, from quasi-experimental evaluations to brief exchanges of experiences. Almost half of the included studies did not evaluate the public involvement method (Table 2), a finding that corroborates that of Abelson et al. (2007). As it appears that a rigorous evaluation of methods continues to attract only limited attention, it remains an important focus point for future study. However, the limited attention to rigorous evaluation should be seen in the context of the contrast between community-based participatory approaches and traditional research and evaluation methods that focus on community problems and deficits. In line with Rifkin et al. (2014) evaluation designs based on randomized controlled trials are traditionally seen as the most robust but are not feasible

for evaluating public involvement methods based on community-based participatory approaches as several factors have an impact on the involvement process, e.g., the role of the facilitator.

Depending on the chosen evaluation design, evaluation of the involvement activities may help us interpret the outcomes of public involvement, the key mechanisms and processes, and contextual factors behind these outcomes. For the most robust method for assessing intervention outcomes (in this case, public involvement in the planning, development, or implementation of community health services), a randomized evaluation design is to be recommended, as it prevents bias and confounding (Craig et al., 2008). Realist evaluation, on the other hand, is valuable to understand processes and unanticipated consequences of public involvement and possible impacts on individuals, groups of citizens, and services.

Limitations

The chosen framework for conducting scoping reviews, inspired by Arksey and O'Malley (2005) and Levac et al. (2010), guided us during the review of the current body of empirical research on public involvement methods, their methodological approach, involvement activity, and facilitation technique. However, the review process revealed a variety of methodological and conceptual challenges, which we addressed by ensuring a high degree of transparency in our reporting of methods and results. We did not apply the optional sixth stage (consultation) of the chosen framework, as we did not involve stakeholders in the review. However, this may have contributed to a critical discussion of the results (Levac et al., 2010; Munn et al., 2018).

According to Colquhoun et al. (2014), scoping reviews provide a synthesis of knowledge that addresses exploratory research aimed at mapping key concepts, types of

evidence, and gaps in research. In our approach to the synthesis, we chose a thematic analysis based on Braun and Clarke's thematic analysis (2006) that proved helpful in identifying patterns in the characteristics of the involvement methods.

We formulated a broad review question in order to identify public involvement methods. In the chosen search strategy, we aimed to identify involvement methods and their characteristics rather than identifying co-production as a methodological approach to the development of services. Meanwhile, as co-production encompasses a growing body of research it may be relevant to address in another review. Aware of the variation in public involvement terminology used in the literature methods, we chose *public involvement* as the concept for operationalization into synonyms during the database search. This involved a risk that the chosen concepts would not identify all studies of relevance. To address this limitation, we conducted several initial searches, thereby identifying the most relevant thesaurus terms. Because of the high sensitivity, more than 7000 studies were retrieved, which increased the possibility of capturing all relevant studies.

It may also be considered as a limitation of our study that we did not outline any exclusion criteria with respect to the quality of studies. Nor did we assign more interpretive weight to those studies with clearer concepts and more comprehensive guidance in the summary of findings or in the presentation of public involvement methods. However, this is common research practice within scoping review, as scoping reviews provide an overview of the existing knowledge regardless of quality (Peters et al., 2020). Future research could aim at assessing the quality of the existing literature on methods of public involvement.

Although an appraisal of quality is not a mandatory feature of scoping reviews, we prioritized to conduct an appraisal of the adequacy of the reporting of the applied public involvement method to offer readers a systematic overview of how informative the descriptions of the public involvement methods appeared in the included studies. This information may be useful to help guide decisions on which public involvement activities to choose e.g. some of the well-described single or multiple approaches.

Implications for practice and research

This overview of public involvement methods has demonstrated the usefulness of packages of public involvement methods throughout the entire value chain from planning to implementation of services (Bovaird, 2007). As mentioned earlier, our knowledge of public involvement in service implementation is limited. The identified characteristics of public involvement methods demonstrate how a variety of aims can be addressed by different involvement activities as well as facilitation techniques. This may be helpful for agencies and practitioners to inform decisions on appropriate methods to qualify the public involvement in planning, developing, and implementation in community health services. Further evaluation research on public involvement methods is needed, in order to identify positive as well as negative impacts of the various public involvement methods. Particularly, a deeper exploration of the impact of different group meeting formats on health services could help qualify the development of community health services.

Conclusion

This systematic scoping review included 39 studies using public involvement methods in the planning, development, and implementation of community health services. Two categories of

public involvement methods were identified: the multiple methods approach and the single method approach. The identified studies provide an overview of public involvement methods, including their respective methodological approaches, involvement activities, and facilitating techniques. The evaluations of multiple methods approaches in planning and developing community health services are indicative of their promise. The results of the review may inform agencies and practitioners in choosing appropriate methods to qualify public involvement in developing community health services. Further research is needed to help define and characterize the content of involvement activities e.g., when using different single method approaches. Public involvement particularly in the implementation of community health services and rigorous evaluation of the impact of public involvement is sparsely investigated and should also be given priority in future studies.

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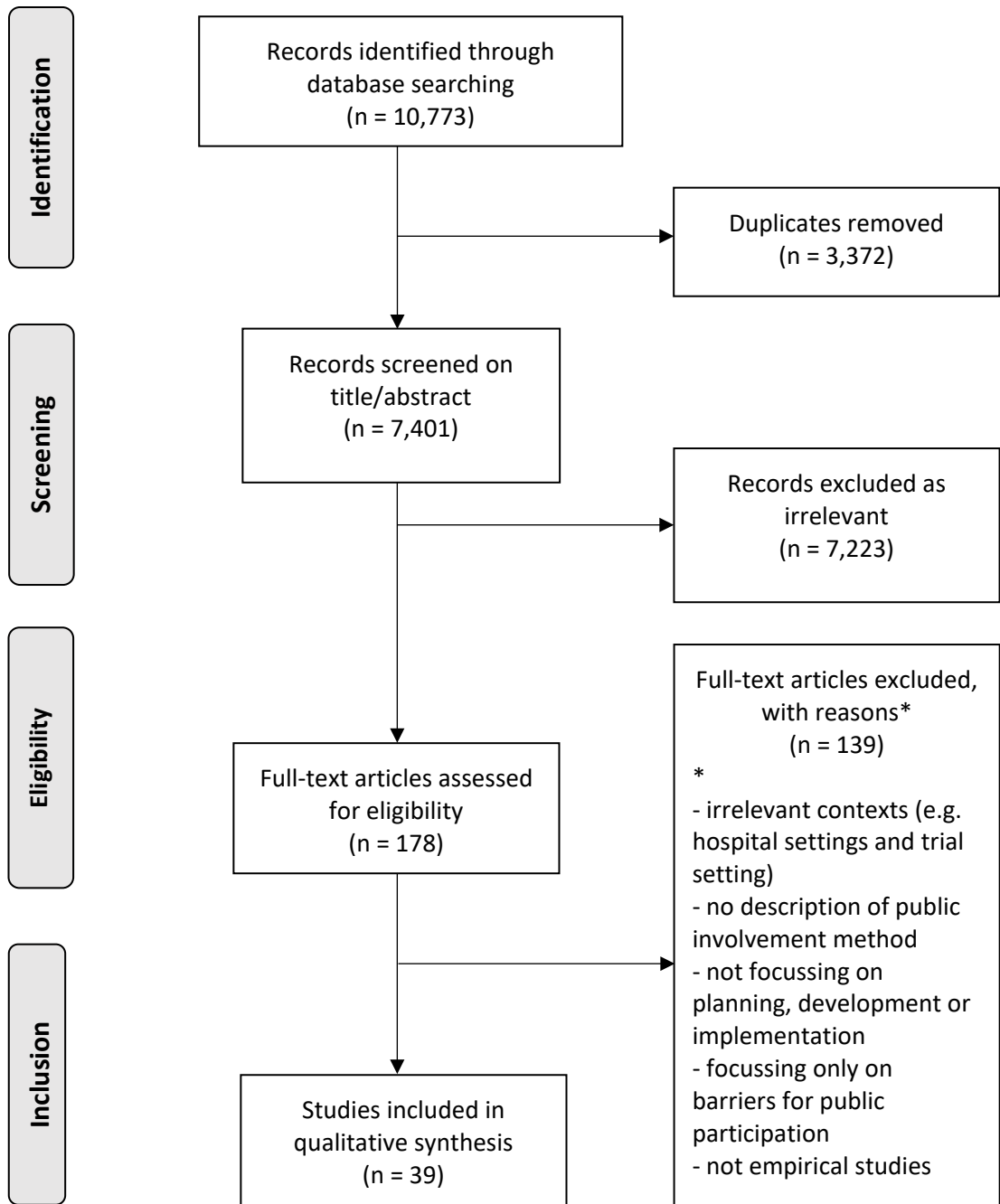


Figure 1: PRISMA flow diagram of the search strategy and results

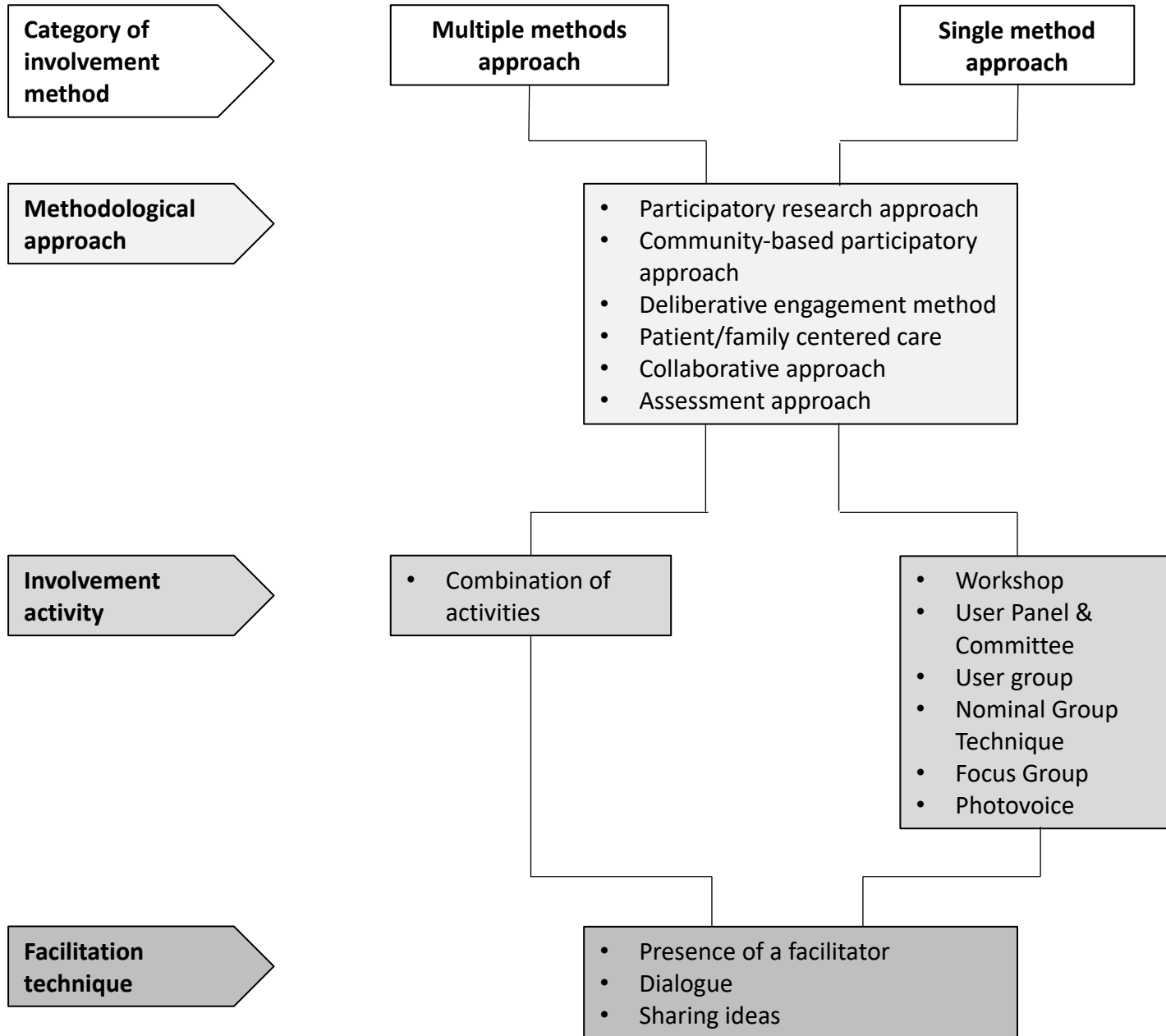


Figure 2: A conceptual model of the key findings

Facet 1 (subject)	Facet 2 (concept)	Facet 3 (context)
Public involvement	Public involvement methods	Community health services
<p>Thesaurus terms:</p> <p>Patient Participation (expl.)</p> <p>Community Participation (expl.)</p> <p>Text searches:</p> <p>“Patient Participation” (ti:ab)</p> <p>“Community Participation” (ti:ab)</p> <p>“User Involvement” (ti:ab)</p>	<p>Thesaurus terms:</p> <p>Tool (expl.)</p> <p>Focus Group (expl.)</p> <p>Workshop (expl.)</p> <p>Shared decision-making (expl.)</p> <p>Text searches:</p> <p>“Tool*” (ti:ab)</p> <p>“Focus Group*” (ti:ab)</p> <p>“Workshop*” (ti:ab)</p> <p>“Shared decision-making” (ti:ab)</p> <p>“User panel” (ti:ab)</p>	<p>Thesaurus terms:</p> <p>Health care planning (expl.)</p> <p>Program development (expl.)</p> <p>Community care (expl.)</p> <p>Text searches:</p> <p>“Health care planning” (ti:ab)</p> <p>“Health care delivery” (ti:ab)</p> <p>“Health planning” (ti:ab)</p> <p>“Health service*” (ti:ab)</p> <p>“Program development” (ti:ab)</p> <p>“Program implementation” (ti:ab)</p> <p>“Intervention development” (ti:ab)</p> <p>“Intervention implementation” (ti:ab)</p> <p>“Health plan implementation” (ti:ab)</p> <p>“Community health planning” (ti:ab)</p> <p>“Community health program*” (ti:ab)</p> <p>“community health intervention*” (ti:ab)</p> <p>“Community health service*” (ti:ab)</p> <p>“Community care” (ti:ab)</p> <p>“Community service*” (ti:ab)</p>

Table 1: Example of the search strategy, built in Embase, illustrating all facets searched

Author (year) Country	Study design	Aim of the study	Involvement activity	Evaluation of the public involvement activity yes/no
Muurinen (2019) Finland	Case study	As the purpose of this case study is to develop practice, it connects with the pragmatist research tradition in social work	Combination of activities	No
Carlisle et al. (2018) Australia	Evaluation study	The aim of this paper is to compare 2 approaches to community participation as part of planning and implementation of primary health service programs within rural settings in north Queensland, Australia	Combination of activities	Yes
Díez et al. (2018) Spain	Community-based research approach	Aiming to develop environmental recommendations for obesity prevention in a low-income area in Madrid by using an innovative community-driven process	Combination of activities	No
Velonis et al. (2018) Canada	Mixed methods	This paper describes how concept mapping processes were integrated into a health and social services needs assessment to conduct a rapid yet participatory assessment of the needs within a geographically broad and demographically diverse area of Toronto, Ontario	Combination of activities	No
Morain et al. (2017) USA	Mixed methods	In this paper, we describe the DES method and its contemporary relevance for health policy research, illustrate how to conduct a DES using an example of a recent patient-centered outcomes research (PCOR) study with which we were involved, and discuss strengths and challenges of using this approach	Combination of activities	Yes
LaNoue et al. (2016) USA	Mixed methods	In this article, we present a method of “structured conceptualization” called group concept mapping, a promising method to engage patients in primary care practice improvement	Combination of activities	No
Winter et al. (2016) USA	Community Engagement Approach	This paper describes the Nuestra Voz (Our Voice) pilot study in which low-income, technology naïve Latino adolescent and older adult participants used the Stanford Healthy Neighborhood Discovery Tool (the Discovery Tool) to conduct assessments of built environment features in their neighborhood that help or hinder physical activity	Combination of activities	No
Khodyakov et al. (2014) USA	Mixed methods	This article reports results of an implementation evaluation of the community planning process within the CEP arm of the randomized trial phase. The two overarching goals of this planning process were to (1) engage a diverse group of community agencies around depression care and (2) design a collaborative approach or plan for treating it in their community	Combination of activities	Yes
Lamb et al. (2014) UK	Evaluation study	The main focus of this paper is on the relationships between stakeholders, their engagement with the issue of access to mental health and with the program through the CE model between 2010 and 2012	Combination of activities	Yes
Munoz (2013) Scotland	Case study	The objective of the project was to investigate the implications of service co-production for home care in a remote and rural community context	Combination of activities	No
Jeffery & Ervin (2011) Australia	Participatory Rural Appraisal	The main objectives of the project were to: Identify consumer needs; Develop future Community Health Plans; Improve collaborative approaches to service delivery within the health service	Combination of activities	No
Katzburg et al. (2009) USA	Mixed methods	The goal of this research was to design a new tailored smoking cessation program, informed by the preferences of women smokers and experts in the fields of women’s health, smoking cessation, and program development	Combination of activities	Yes
Woods (2009) USA	Mixed methods	This article describes how a local Black population in San Bernardino County (SBC), California, engaged in a health planning project utilizing CBPR method	Combination of activities	No
Zani & Cicognani (2009) Italy	Evaluation study	This article presents and discusses the evaluation of the participatory process involved in the Local Plans for Health (LPH)	Combination of activities	Yes
Risisky et al. (2008) USA	Mixed methods	To engage a community to critically examine local health disparities	Combination of activities	No
Rowa-Dewar et al. (2008)	Qualitative study	This article is a contribution to the discussion on the methodological approaches used to meaningfully engage the public in discussions about health-related issues.	Combination of activities	Yes

Scotland		It also addresses the concern that RA studies are akin to “bad science” or lack reflective awareness of the limitations of the approach		
Timotijevic & Raats (2007)	Evaluation study	The current paper aims to evaluate and identify methods of involvement of the “hard-to-reach” in public health development. The objective of the current paper is to evaluate two deliberative methods of public participation: citizens’ workshop and citizens’ jury	Combination of activities	Yes
UK Rosén (2006)	Intervention study	The aims of the intervention study were: (a) to study the effects in terms of attitude changes; (b) to analyse which component in the intervention influenced the respondents most; (c) to draw some conclusions for the continuous dialogue process	Combination of activities	No
Sweden				
Green et al. (2004)	Mixed methods	The aims of this paper are to describe a four-step process for community health needs assessment used in one community, to discuss satisfaction with the community consultation processes, and to examine the cost and usefulness of the process for guiding health service planning	Combination of activities	Yes
Australia				
Crowley et al. (2002)	Case study	The case study presented in this paper describes a local initiative set up in Newcastle upon Tyne to promote community participation in decision-making about local health services.	Combination of activities	Yes
UK Lazenbatt et al. (2001)	Case study	The case study aims were to demonstrate the use of participatory rapid appraisal in: Gaining insights into women’s health and social needs which are based on their own and other agencies perspectives over a short period of time. Assessing any gaps in existing services. Assessing barriers that prevent certain groups from accessing services. The translation of these findings into action. Establishing partnerships between service providers, voluntary organizations and local communities	Combination of activities	No
Northern Ireland				
Clark (1997)	Qualitative study	Our aim was to devise techniques suitable for involving local people in rural areas in needs assessment and thereby enabling them to have a strategic influence on the planning and delivery of community care services	Combination of activities	No
Scotland Rains & Ray (1995)	Case study	This article describes the process and outcomes of participatory action research conducted by one Healthy City in partnership with public health nurse researchers toward the goal of promoting community health	Combination of activities	No
USA				
Valaitis et al. (2019)	Developmental evaluation and participatory design methods	This purpose of this paper is to report on how the persona-scenario method was used to co-design a complex primary health care intervention (Health TAPESTRY) by and for older adults and providers and the value added of this approach	Workshop	No
Canada Nimegeer et al. (2016)	Community-based participatory action research (CBPAR)	The purpose of this paper is to present a method for undertaking rural community participation to design health services, to overview how it was derived and to critique it	Workshop	Yes
Scotland Farmer & Nimegeer (2014)	Community based participatory action research (CBPAR)	This paper explores the outcomes from inviting community members to participate in designing primary healthcare services for remote rural places	Workshop	Yes
Scotland Owens et al. (2010)	Participatory approach	In this paper we report on the challenge of working with a group of people with relevant lived experience to develop a text-messaging intervention to reduce repetition of self-harm	Workshop	Yes
UK				
Iyer et al. (2015)	Community-partnered participatory research (CPR)	??	User panel and Committee	Yes
USA Serapioni & Duxbury (2012)	Qualitative evaluation	The article aims to contribute to knowledge on the effectiveness and failings of contemporary public participation approaches within the health system	User panel and Committee	Yes

Italy				
Nancarrow et al. (2004)	Case study	This paper discusses the practicalities and limitations of establishing a service user consultation group to guide service developments, based on the evaluation of a 'Podiatry Patient Panel' in South Yorkshire	User panel and Committee	Yes
UK				
Myers et al. (2020)	Survey	This article, argues that deliberative public engagement can be a useful tool for involving communities in setting medicaid priorities	User group	Yes
USA				
Yankeelov et al. (2019)	Qualitative study	This article examines the process, outcomes, and impact associated with the community engagement method of the world café, used with rural older adults living with diabetes and the organizations that support them, to develop a multiyear strategic plan focused on their community's vision of health	User group	Yes
USA				
Seim & Slettebø (2011)	Action research	This article explores how collective participation can help involve service users in the improvement of child protection services	User group	Yes
Norway				
Lee et al. (2009)	Evaluation study	This article describes the decision making and practical steps of a primary care organization in achieving consumer participation of culturally heterogeneous client groups into primary health programme planning and services	User group	Yes
Australia				
Goold et al. (2005)	Evaluation study	This article presents the rationale for the design of the CHAT exercise and describe a project in which it was used to learn about public priorities for health benefits. As part of a larger project and body of work, we also aimed to address a subset of questions about the value of the tool as a deliberative procedure. We focused on evaluating the tool's feasibility and how it was judged by lay participants, especially participants from disadvantaged groups such as those with low incomes and the uninsured	User group)	Yes
USA				
Wainwright et al. (2014)	Qualitative, pragmatic and descriptive design	Our purpose is to assess the methodology as a means of articulating patient voices in which the distorting influence of power are minimized and to provide a practical guide to using the technique for this purpose	Nominal group technique	No
UK				
Twible (1992)	Case study	The purpose of this paper is to describe a consumer participation technique, the Nominal Group Technique (NGT). This technique was used as an integral component of needs assessment to plan a health promotion program for the elderly	Nominal Group Technique	No
Australia				
Uding et al. (2009)	Feasibility study	The purpose of this article is to report the major feedback received from parents who collaborated in the development of the BFS (Building on Family Strengths) curriculum through parent focus groups, as community cultural contacts, and in a parent pilot class	Focus group	Yes
USA				
Wang (2006)	Participatory Action Research (PAR)	The purpose of this article is to take a modest step toward examining youth participation in photovoice	Photovoice	No
Various countries				

Table 2: characteristics of the 39 included studies arranged by year of publication within the involvement activities

Author	Involvement activity	Practicality -understandability and clarity	Practicality – ease of use and operationalizability	Legitimacy	Total points
Myers et al., 2020	User group	++	++	++	6
Valaitis et al., 2019	Workshop	++	++	++	6
Diez et al., 2018	Combination of activities	++	++	++	6
Velonis et al., 2018	Combination of activities	++	++	++	6
Winter et al., 2016	Combination of activities	++	++	++	6
Wainwright et al., 2014	Nominal group technique	++	++	++	6
Woods, 2009	Combination of activities	++	++	++	6
Rowa-Dewar et al., 2008	Combination of activities	++	++	++	6
Goold et al., 2005	User group	++	++	++	6
Rains & Ray, 1995	Combination of activities	++	++	++	6
Yankeelov et al., 2019	User group	++	++	+	5
LaNoue et al., 2016	Combination of activities	++	++	+	5
Khodyakov et al., 2014	Combination of activities	+	++	++	5
Lamb et al., 2014	Combination of activities	++	+	++	5
Owens et al., 2010	Workshop	++	++	+	5
Timotjevic & Raats, 2007	Combination of activities	++	++	+	5
Wang, 2006	Photovoice	++	++	+	5
Muurinen, 2019	Combination of activities	+	+	++	4
Carlisle et al., 2018	Combination of activities	+	+	++	4
Morain et al., 2017	Combination of activities	++	+	+	4
Munoz, 2013	Combination of activities	++	+	+	4
Serapioni & Duxbury, 2012	User panel and committee	+	+	++	4
Jeffery & Ervin, 2011	Combination of activities	+	+	+	4
Seim & Slettebø, 2011	User group	+	+	++	4

Zani & Cicognani, 2009	Combination of activities	+	+	++	4
Risky et al., 2008	Combination of activities	++	++	-	4
Green et al., 2004	Combination of activities	++	++	-	4
Lazenbatt et al. 2001	Combination of activities	+	+	++	4
Twible, 1992	Nominal group technique	++	+	+	4
Nimegeer et al., 2016	Workshop	+	+	+	3
Farmer & Nimegeer, 2014	Workshop	+	+	+	3
Uding et al., 2009	Focus group	+	+	+	3
Rosén, 2006	Combination of activities	+	+	+	3
Iyer et al., 2015	User panel and Committee	+	-	+	2
Nancarrow et al., 2004	User panel and Committee	+	+	-	2
Clark, 1997	Combination of activities	+	-	-	1
Lee et al., 2009	User group	+	-	-	1
Katzburg et al., 2009	Combination of activities	+	-	-	1
Crowley et al., 2002	Combination of activities	-	-	-	0

Table 3: appraisal of the 39 included studies on involvement activity regarding practicality and legitimacy. Ranked by appraisal score (0-2 point per part of the appraisal) from 6 to 0.

- : "not described at all"; + : "partially described"; ++ : "fully described"

Author, year	Combination of activities	Workshop	User panel and Committee	User group	Nominal group technique	Focus group	Photovoice
Muurinen, 2019	*						
Carlisle et al., 2018	*						
Diez et al., 2018	*						
Velonis et al., 2018	*						
Morain et al., 2017	*						
LaNoue et al., 2016	*						
Winter et al., 2016	*						
Khodyakov et al., 2014	*						
Lamb et al., 2014	*						
Munoz, 2013	*						
Jeffery & Ervin, 2011	*						
Katzburg et al., 2009	*						
Woods, 2009	*						
Zani & Cicognani, 2009	*						
Risisky et al., 2008	*						
Rowa-Dewar et al., 2008	*						
Timotjevic & Raats, 2007	*						
Rosén, 2006	*						
Green et al., 2004	*						
Crowley et al., 2002	*						
Lazenbatt et al., 2001	*						
Clark, 1997	*						
Rains & Ray, 1995	*						
Valaitis et al., 2019		*					
Nimegeer et al., 2016		*					
Farmer & Nimegeer, 2014		*					
Owens et al., 2010		*					
Iyer et al., 2015			*				
Serapioni & Duxbury, 2012			*				
Nancarrow et al., 2004			*				
Myers et al., 2020				*			
Yankeelov et al., 2019				*			
Seim & Slettbo, 2011				*			
Lee et al., 2009				*			
Goold et al., 2005				*			
Wainwright, 2014					*		
Twible, 1992					*		
Uding et al., 2009						*	
Wang, 2006							*

Table 4: Identification of the different involvement activities within the 39 included studies arranged by year of publication and involvement activity

Author, year	Public involvement method			Aim of the public involvement	Participants
	Approach	Activity	Techniques		
Muurinen, 2019	Experiment-driven Innovation Approach	Seminar Workshop, Peer groups	Brainstorming	To strengthening service users' experience of participation and sense of having agency.	Service users
Carlisle et al., 2018	Community Participatory Approach	Workshops Consultations	Discussions Assessing needs	To identify local problems, potential solutions and facilitate change. Furthermore, to empower the community members.	Community members Service providers Service users
Diez et al., 2018	Community Based Research Approach	Nominal group technique Photovoice	Meetings	To identify both environmental facilitators and barriers to residents' food choices and physical activity. To allow participants to rank and rate the list of obesity policy recommendations; provide a means to aggregate individual findings; and allow for multiple individual inputs at a single session.	Citizens Researchers Public health practitioners Policymakers
Velonis et al., 2018	Mixed method participatory approach	Concept mapping	Brainstorming Prioritizing ideas Group statement priorities	To identify the needs, gaps and possible discrepancy within subgroups using health and social services.	Residents from the neighborhoods Members of the priority populations Health care providers Representatives of social service organizations
Morain et al., 2017	Community Based Research Approach	Survey Interview	Deliberative Engagement Methods	To elicit informed preferences from patients and other stakeholders on policy issues	A representative sample of 500 patients
LaNoue et al., 2016	Mixed method participatory approach	Concept mapping including Preparation Generation of statements Structuring statements Representation Interpretation Use of the statements	Identifying stakeholders Brainstorm based on individual task Scoring and rating priorities and individual tasks Statistical methods to organize priorities Dialog group between researchers and users	Engage patients in primary care practice improvement	Patients Health professionals
Winter et al., 2016	Community Engagement Approach	Online meetings	Discovery Tool: a neighborhood environmental assessment mobile application	To empower adolescent and older adult citizen scientists in gathering data about local built environment; to review data; to identify neighborhood barriers and facilitators to active living; and engage with community partners to improve the neighborhood environment.	Citizen scientists
Khodyakov et al., 2014	Community-Partnered Participatory Research framework, based on Community Based Research	Collaborative intervention planning led by a community partner and an academic facilitator Engaging and building trust via Ice-breaker-exercise	Meetings	To have the participants taking leadership in the initiative; and building relationship among CEP council members. Developing community-oriented training in collaborative depression care; and developing community networks and resources to provide depression care.	Community members Agency representatives Council members

Lamb et al., 2014	Community Engagement Model based on Action Research	Focus groups Work groups	Information gathering Champions	To negotiate and implement the aims and agenda of the intervention.	Health professionals Service providers Policymakers Members of voluntary organizations Community police Business representatives Councilors Faith leaders
Munoz, 2013	Participatory Research Approach & Co-production of services	Interview Survey Meetings	Sharing information Mapping Prioritizing	To involve community members in the design and delivery of home care services	Community members
Jeffery & Ervin, 2011	Collaborative Approach	Meetings Community Forums		To identify consumer needs; develop future Community Health Plans; improve collaborative approaches to service delivery within the health service.	Community members.
Katzburg et al., 2009	Multi-step Approach	Focus groups Panels	Concept development Concept testing Pilot testing	To identify patient preferences for components in creating a smoking cessation program and to evaluate the program.	Veteran women smokers Clinicians Researchers Educators Policymakers.
Woods, 2009	Community based participatory research framework	Work groups Questionnaire Focus groups Survey Public Forum	Strategic Planning Action	To identify solutions for disparate health outcomes from the target population.	Individual stakeholders Residents of the community Health care providers
Zani & Cicognani, 2009	Participatory Action Research (PAR)	Health needs assessment Focus groups	Descriptive, statistical data Nominal group technique Present facilitators Discussion Presentation of results Project working groups Periodic system of monitoring	To identify the health needs; to try to involve the local community in the development of intervention projects to satisfy such needs; and to enhance the relationship between citizens and institutions	General practitioners and pediatricians Immigrant citizens Social and health personnel Members of voluntary organizations Mayors of local municipalities High school and university students Representatives of local work, cultural, and sport organizations
Risky et al., 2008	Mixed method participatory approach	Concept mapping including four steps 1) Preparation 2) Generation of statements 3) Structuring statements 4) representation	Identifying stakeholders Brainstorming Scoring and rating priorities Statistical methods to organize priorities	To enhance the capacity of the community to participate as effective partners with various stakeholders to develop, implement or evaluate interventions and strategies to eliminate the social determinants underlying health disparities.	Community members Researchers Advocates Social service providers Medical providers Public health practitioners

Rowa-Dewar et al., 2008	Rapid Appraisal Approach	Meetings	Rapid appraisal method	To gather the views of members of the public in relation to cancer and cancer care.	The lead cancer clinician Political representatives Specialist cancer nurses Local health professionals Local social care/community workers The general public
Timotjevic & Raats, 2007	Deliberative Participation Methods	Citizens jury workshops	Group deliberate participation methods	To evaluate the methodologies of participation.	Citizens
Rosén, 2006	Democratic Approach	Surveys Information booklets Public meetings	Political dialogue	To vitalize the political dialogue and to educate the political representatives as well as the involved citizens.	Citizens
Green et al., 2004	Community Health needs assessment	Survey Focus groups Meetings	Nominal group techniques	To identify and rank health needs	Key informants in each target sector Households
Crowley et al., 2002	Community development approach	Conferences Committees Community groups	Consultations Discussions Decision-making	To identify key local concerns and issues.	Local residents Professional workers Service managers Project staff Funders
Lazenbatt et al., 2001	Participatory Rapid Appraisal Approach	Interviews Focus-groups Survey	Review of existing data Joint decision-making	To elicit the community views and opinions of the locality and obtaining an understanding of the community's priority of health and social need issues.	Community members
Clark, 1997	Community participation	Interviews Focus groups Workshops		To identify participants views and to generate key issues for interviewguides	Users Carers
Rains & Ray, 1995	Participant Action Research	Survey Committees	Co-operative experiential Inquiry Discussions	To empower and develop group members leadership potential. To identify the problem, the needed information, preferable methods, and procedures to obtain data, analysis of data, and desired action.	Community members Professional researchers
Valaitis et al., 2019	Persona-scenario method grounded in developmental evaluation and participatory design methods	Workshops	Present facilitators Present note takers Working in pairs Presenting the created scenarios Group discussion Community meeting	To engage the users in co-designing an intervention for a randomized controlled trial.	Patients Primary care clinicians Volunteers Community service providers
Nimegeer et al., 2016	Community-based participatory action research (CBPAR)	Workshops	Advertisement in the local community Interviews Flipcharts/notes/post-it notes Feedback via questionnaires Identifying gatekeepers Establishment of a core group	To reconfigure and design service provision.	Local citizens Health and social care workers Service managers Local politicians

Farmer & Nimegeer, 2014	Community-based participatory action research (CBPAR)	Workshops	Introductory meetings Interactive researchers attending the workshops Summary notes reported to the wider community Flipcharts Interviews Feedback via questionnaires	To encourage community members to ask questions about local health and health services, to provide evidence in response, to inform priority-setting and service design, and to include health practitioners and managers as part of the discussion and sharing of evidence.	Community members
Owens et al., 2010	Not reported	Workshops	Initiating, introductory workshop Generating a catalogue of potential content of the intervention Working in pairs Focus groups Discussion	To ensure the intervention being usable, acceptable, clinically viable, affordable and likely to achieve health benefits.	Mental health services users with histories of self-harm Carers working with self-harm Clinicians working with self-harm
Iyer et al., 2015	A community-partnered participatory research approach	Group meeting	Narratives	To address identified barriers in order to develop successful and sustainable CMH general medical interventions	Staff members Consumers
Serapioni & Duxbury, 2012	A deliberative approach	Group meeting	Not reported	To include users in decision-making in healthcare	User representatives Professionals Managers
Nancarrow et al., 2004	No approach is reported	Group meeting	Present facilitator A guideline to direct the group meeting	No aim reported	Representatives with a range of different perspectives
Myers et al., 2020	Community Based Participatory Research (CBPR)	CHAT (CHOosing All Together)	Present facilitator CHAT game board Feedback via questionnaires	To promote priority setting based on informed, reasoned dialogue among ordinary citizens about complex and value-laden allocation decisions	Steering committee Community groups Individual community members
Yankeelov et al., 2019	Community Participatory Approach	World Cafés	Present facilitator Fact sheets Paper table clothes Dialogue Feedback via questionnaires	To generate ideas and consider preferred strategies for the implementation of a strategic plan focused on the community members' vision of health.	Community members Government representatives Business entities For-profit organization representatives
Seim & Slettebø, 2011	Participatory Action Research Approach	Dialogue-based participation group	Dialogue	Knowledge production and to promote channels for collective user participation for the service users.	Young people Parents Child protection personnel
Lee et al., 2009	Community based Approach	Consumer reference group	Sharing experiences and ideas	To plan education and prevention programmes, improve service access, and improve alcohol and other drug information for migrant and refugee women and their families.	Consumers with multicultural diversity Staff members

Goold et al., 2005	Participatory Approach	CHAT (Choosing Health plans All Together) an exercise in participatory decision making	Engage the public in health care priority setting	To provide an opportunity for advancing both individual and collective understanding of allocating resources. To promote communal values while preserving individual autonomy.	Community residents Volunteers
Wainwright et al., 2014	Contextual cognitive behavioral therapy (CCBT)	Nominal group technique	Individual generation of ideas Individual prioritizing of health issues Focus groups Present facilitator Group discussions Ranking health issues Weighting health issues	To synthesize the users' preferences within a pre-existing framework of scientific expertise and structural constraints relating to what we felt the NHS would be willing or able to commission.	People with chronic pain
Twible, 1992	Not reported	Nominal group technique	A series of meetings Present facilitators Ranking responses to questions	To plan health promotion programs content and strategies for a Veterans Quality of Life Project	Veterans Spouses of veterans War widows
Uding et al., 2009	Family-centered care	Focus groups	Trained moderator Note taker Structured series of questions Discussion	To provide comment on revision of the BFS (Building on Family Strengths) program prior to its use in a parent pilot class.	Parents or other primary caregivers of children with chronic illness
Wang, 2006	Participatory action research (PAR)	Photovoice	Present facilitator Brainstorming Group discussion Photovoice rounds Exhibition of photographs	To enable people to record and represent their everyday realities; promote critical dialogue and knowledge about personal and community strengths and concerns; and reach policymakers.	Young people

Table 5: Analytic table of the 39 included studies arranged by year of publication within each public involvement activity.