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Stakeholder analysis in health innovation planning processes: A systematic scoping review

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Highlights

- Stakeholder analyses are critical for properly organise health innovation planning processes
- They are most used for planning policies and services and delivery methods
- Stakeholder analyses are conducted worldwide in countries with varied income levels
- The steps for the analysis, methods, stakeholder attributes and reporting are heterogeneous
- The RISA tool is proposed as a reporting guideline for stakeholder analysis

Abstract

Integrating health innovations into the health system is a complex endeavour that requires a well-designed planning process engaging key stakeholders. Stakeholder analyses lay the foundations to inform appropriate planning processes and undertake strategic actions. A systematic scoping review was performed to explore how stakeholder analyses are applied in health innovation planning processes and a guideline to report stakeholder analyses was developed. The literature search was conducted in PubMed, Scopus and DOAJ; grey literature was sought using Google.

Articles reporting stakeholder analyses during the planning process of health policies, systems, products and technologies, and services and delivery methods were included. Fifty-one records were incorporated in the qualitative synthesis. Stakeholder analyses were conducted worldwide, used in all types of health innovations, applied in all phases of the planning process and conducted both prospectively and retrospectively. The steps followed to perform stakeholder analysis, the methods used, the stakeholder attributes analysed and how authors reported the analyses were heterogeneous. Forty-one studies reported the identification of stakeholders, 50 differentiated/categorised them and 25 analysed stakeholder relationships. Only some authors proposed future actions based on the results obtained in their stakeholder analysis. A list of Reporting Items for Stakeholder Analysis (i.e., the RISA tool) is proposed to contribute to the reporting guidelines to enhancing the quality and transparency of health research.

Keywords

Stakeholder Analysis, Stakeholder Mapping, Health Innovation, Scoping Review, Health Planning [MeSH], Strategic Planning [MeSH]

Introduction

Since population needs and health systems are continuously evolving, integrating health innovations in such systems is essential in order to provide solutions to both existing and emerging needs. According to the WHO, “health innovation identifies new or improved health policies, systems, products and technologies, and services and delivery methods that improve people’s health and wellbeing” (1). However, modifying usual care and introducing health innovations into the health system is a complex endeavour. To enhance the integration and future success of any health innovation, comprehensive planning is required. Health innovations’ planning processes usually share an underlying structure that encompasses a set of sequential phases (2). Following a planning process allows for developing effective health innovations, but also for addressing aspects other than effectiveness that are necessary for successful scale-up (3). Additionally, to achieve successful integration, health innovation’s planning processes must include the perspectives, experiences and opinions of

stakeholders that have an interest, influence, or are affected by the innovation to be implemented (4-6).

Examples of stakeholder participation across the different phases of health innovations' planning processes can be found in the literature (7-9). However, participatory studies do not usually report why or how the stakeholders involved in such processes were selected, or whether the engaged stakeholders were appropriate (i.e., presented desirable attributes) to be involved in health innovation planning (10-12). To organise participatory planning processes that are fair and transparent, in which the right stakeholders are engaged, these processes must be designed based on the results of a stakeholder analysis (13, 14). Stakeholder analyses are key actions that help: (1) understand the context in which the innovation will be developed and implemented; (2) inform the planning process and the individuals, groups or organisations to be involved; and (3) develop strategies to both support a suitable development and implementation of the innovation and avoid potential barriers to its integration into the system (15-17).

The key steps to carry out stakeholder analyses were organised by Reed et al. (18): (1) Defining the context and boundaries for the analysis; (2) Applying stakeholder methods; and (3) Recommending future actions and stakeholder engagement. Moreover, within the second step (i.e., applying stakeholder methods) three activities should be conducted: (2a) the identification of stakeholders; (2b) the differentiation or categorization of stakeholders based on the study of stakeholder attributes (e.g. power, position, level of interest, etc.); and (2c) the investigation of stakeholder relationships. It is important to note that stakeholder attributes may change over time, due to variations in the context or the phase of the health innovation planning process, causing new stakeholders to emerge and others to fade (19-22). For this reason, stakeholder analyses must be updated over the planning process and so allow for appropriate changes in the key stakeholders to be engaged in the process (9, 19, 21).

Due to their value and interest, it would be useful to report stakeholder analyses thoroughly. Existing reviews of the literature and guidelines on stakeholder analysis provide information on different aspects of these analyses, such as: the methods to use (18, 23); the necessary steps and aspects to take into account to perform the analysis (17, 18, 24, 25); the theoretical approaches to stakeholder analysis (21); or, the uses of stakeholder analysis in the policy, healthcare management and development literature (15). However, to the best of our knowledge, there are no reviews in the literature focusing on the application of stakeholder analyses in health innovation planning processes. Understanding the applicability of stakeholder analyses in these processes

and the methods used to select the right stakeholders may help improve the design of planning processes and decision-making. Thus, addressing this topic may facilitate policy-makers, researchers and practitioners to better design and manage the processes. Scoping reviews are a useful approach, as they help understand the evidence in a field not yet widely reviewed, especially when the research question is broad and the existing literature is heterogeneous (26, 27). Scoping reviews are acknowledged for having "potential to advance healthcare practice, policy and research" (28). Therefore, the general purpose of this systematic scoping review was to provide an overview of the use and reporting of stakeholder analyses in health innovation planning processes. Specifically, it aimed to:

1) Understand what are stakeholder analyses used for
2) Identify what are the methods used to perform those analyses
3) Know what are the attributes analysed for the stakeholders
4) Develop and pilot a tool to guide future reporting of stakeholder analyses (the Reporting Items for Stakeholder Analysis –RISA– tool).

Methods

A systematic scoping review of studies reporting a stakeholder analysis carried out in a health innovation planning process was performed. The Arskey and O'Malley framework (26) and the Joanna Briggs Institute's recommendations for conducting systematic scoping reviews (27) were used.

Literature search

A search was conducted to identify original papers that included a stakeholder analysis in health. Search strategies (Figure 1) were kept sensitive to ensure breadth of coverage (26, 27) and no time or language limits were set. Different sources were explored to ensure wide access to the existing research evidence (26). A search in PubMed – which includes Medline and PubMed Central databases –, Scopus and DOAJ (Directory of Open Access Journals) was performed in June 2017. Grey literature was sought using the Google search engine, and the first 25 results were explored. Additionally, the reference lists of the included articles were also scanned to identify other relevant articles. Since no key specific journals to this topic were identified, hand searching of journals was not performed.

Eligibility criteria and study selection

Articles were included if they reported a stakeholder analysis conducted during a health innovation planning process. The terms *stakeholder analysis*, *health innovation* and *planning process* were considered, as defined below:

Stakeholder analysis, adapted from Reed et al. (18)

The process that is made in a specific context to systematically: i) identify stakeholders (individuals, groups or organisations); ii) differentiate or categorise stakeholders; or iii) investigate the relationships between the stakeholders to prioritise them and know who to involve/has been involved in a decision-making or planning process.

Health innovation (1)

“Health innovation identifies new or improved health policies, systems, products and technologies, and services and delivery methods that improve people’s health and wellbeing.”

Planning process, adapted from (2, 4, 29)

The health innovation planning process was considered here a process composed of the following phases: (1) preparatory phase, where the organisational structure and the resources for setting up the planning process are prepared; (2) needs assessment and setting objectives, where the health needs, its causes and contributing factors, the individual, organisational and community resources to tackle them are analysed (30), and the aim of the innovation defined; (3) development, where the innovation is theoretically developed, modelled and piloted for refinement; (4) impact assessment, where the clinical, economic and humanistic impact of the innovation is measured; and (5) implementation, including the adoption, implementation and sustainability of the innovation.

Articles were excluded if: (1) the procedure/methodology to perform the stakeholder analysis was not specified in the article (i.e. no methods were specified for none of the identification, categorisation or analysis of stakeholder relationships steps); (2) the article did not report original data of a stakeholder analysis; or (3) the article was written in non-Roman characters.

Titles and abstracts were reviewed against the inclusion criteria by one author. Articles meeting these criteria and those in doubt were considered for the full-text screening. At

this stage, inclusion and exclusion criteria were applied. Any uncertainty related to the study selection was resolved through discussions between two authors and, when agreement in these discussions was not achieved, a third author intervened.

Data extraction

A data extraction form was developed including general information about the study and a list of Reporting Items for Stakeholder Analysis to include in the RISA tool. The list of reporting items was initially chosen considering the "key methodological steps necessary for stakeholder analysis" proposed by Reed et al. (18), the stakeholder analysis guidelines developed by Schmeer (17), the framework for stakeholder analysis developed by Gilmour and Beilin (24), and the questions discussed by Varvasovszky and Brugha in their explanation on how to do a stakeholder analysis (25). The data extraction form was then piloted and refined with five of the included studies (27, 31). A version of the final data collection tool can be found in Supplementary appendix 1. One author carried out the data extraction; any doubts were discussed with a second author, and a third one was consulted when discrepancies between the first two authors existed. The Reporting Items for Stakeholder Analysis were used for the data extraction of all included articles and discussed by two authors to generate the final tool presented in the results.

Data analysis and synthesis

In accordance with the literature on the methodology to conduct scoping reviews (31), a qualitative content analysis of the articles included in the study was performed. A deductive, descriptive approach was used in which data was primarily coded to the pre-defined categories contained in the data extraction form and, when needed, further organised in subcategories to classify and clarify the information contained in each of the categories. Microsoft Word and Excel 2016 were used to perform the analysis.

The results of the review were organized following the structure provided by Reed et al. (18) on key methodological steps for stakeholder analysis: (1) Context of the studies; (2) Application of stakeholder methods, which involves (a) stakeholder identification; (b) stakeholder differentiation/categorisation; and (c) analysis of stakeholder relationships; and (3) Recommendation of future actions and stakeholder engagement.

Results

Characteristics and context of included studies

The literature search returned 2261 records after removing duplicates. The screening of titles and abstracts yielded 116 records for full-text eligibility, of which 51 were finally

included in the qualitative synthesis. A search and decision diagram along with the reasons for exclusion can be found in Figure 2 (based on the PRISMA flowchart (32)). Publication dates denoted a substantial increase in studies reporting stakeholder analyses for health innovation planning processes in the last three decades: from four studies published from 1990-2000, to 11 published from 2001-2010, to 36 published from 2011-search date. Stakeholder analyses were carried out in a variety of countries in Africa, America, Asia, Europe, and in Australia. Supplementary appendix 2 provides further details on the authors, year of the study, country, prospective/retrospective direction and scope of the analysis, health innovation and planning process for the included studies.

Stakeholder analyses were used in the planning processes of all types of health innovations. Policies were the innovation for which these analyses were more reported and used in all phases, followed by services and delivery methods. Table 1 classifies each stakeholder analysis according to the health innovation, the phase of the planning process in which the stakeholder analysis was conducted, and whether the study was prospective or retrospective. Prospective stakeholder analyses were more frequent in the early phases of the planning process (i.e., before implementing and evaluating the innovation). Their applications included: understanding the context where the innovation was to be implemented (33); identifying a group of people that could lead the planning process (19); knowing who to involve in the planning process (34, 35); undertaking strategic planning (36-39); or understanding whose wants and needs should be reflected in the innovation (16, 40). Stakeholder analyses were performed retrospectively in latter phases of the planning process (i.e., when the innovation was already developed). Examples of their applications were: understanding what happened in previous phases of the planning process to assess success or failure (41, 42); understanding how stakeholders shaped the planning process or the innovation (43-45); or understanding the context in which the planning process took place and the process of change (46).

Application of stakeholder analysis methods

The studies were heterogeneous in the processes and steps followed to perform the stakeholder analysis, the methods used and the way authors reported these analyses.

Stakeholder identification

The stakeholder identification methods were not reported in four studies (34, 41, 42, 47). In another 10, these methods were not clearly reported (16, 37, 44, 48-54). The

most frequent approaches used to identify stakeholders were the combination of at least two of the following methods: the review of literature/documents/media/web (used in 28 studies); individual interviews (n=20); snowballing (n=16); research team discussions/brainstorming (n=13); group interviews/meetings/brainstorming (n=10); expert or stakeholder consultation (n=8); surveys/questionnaires (n=4); and Delphi method (n=1). Table 2 shows the variability on how methods were combined for each of the studies, finding the greatest variability for prospective stakeholder analysis in policies.

The results of the stakeholder identification were usually presented in the articles in a descriptive manner, combined in tables with the information obtained in the categorisation step, or using stakeholder maps.

Stakeholder differentiation/categorisation or prioritisation

The differentiation/categorization of stakeholders was the step of the stakeholder analysis that received more attention in the literature. All the included studies, except one (39), reported the analysis of stakeholder attributes to differentiate or categorise them. A high variability was found in both the attributes analysed and attributes combinations in the analyses. The most frequent stakeholder attributes analysed were: power or influence (analysed in 39 studies); attitude or position (n=33); level of interest (n=15); the role the stakeholder played or their contribution (n=13); stakeholder knowledge or awareness (n=5); impact of the issue on the stakeholder (n=5); stakeholder legitimacy (n=4); and stakeholder urgency (n=4). Stakeholder stakes were identified in 22 of the 47 studies included. As shown in Table 3, stakeholder power and position were analysed together in 27 of the studies, and combined with stakeholder stakes (n=8), stakeholder level of interest (n=7) or both (n=4). Some tendencies for the combination of attributes were found depending on the type of innovation:

- the combination of power, position and stakeholder stakes for policy studies;
- power, position and level of interest for services and delivery methods;
- power, legitimacy and urgency for products and technologies; and
- power and position for systems.

Some authors combined the attributes to create analytical stakeholder categories, oriented towards the design of stakeholder engagement strategies. Some examples were: a) population, subjects, leaders and players (42); b) drivers, blockers, supporters, bystanders (55); c) dormant, discretionary, demanding, dominant, dangerous,

dependent, definitive, non-stakeholder (56); or d) saviour, sleeping giant, friend, observer, saboteur, trap, irritant, time-bomb (57).

Some forms of data display for the stakeholder differentiation/categorisation were also distinctive, such as: power vs interest matrix (41, 42, 58), influence maps (33, 59), forcefield analysis or position map (16, 50, 53, 60, 61), stakeholder support vs resources (62), and importance vs influence matrix (63).

The most common data collection methods for the stakeholder categorisation were individual interviews (n=37), literature/documents/media review (n=20), surveys/questionnaires (n=13), focus groups (n=10), workshops (n=6), expert consultations (n=5), group consensus (n=4) and observations (n=4). In prospective studies, the variability in data collection methods and how they are combined is higher than in retrospective studies (see Table 3).

Investigation of the relationships between stakeholders

The relationships between stakeholders were analysed in 25 of the 51 studies, two of which reported analysing the relationships but not the results of these analyses (64, 65). Most of these studies performed a qualitative analysis of stakeholders' relationships, except for six that analysed relationships using social network analysis (38, 66-70). The most common approach to analyse relationships was to gather stakeholders' interactions, with no specific interaction defined, six studies (33, 43, 52, 60, 65, 71-74); followed by collaboration or cooperation between stakeholders, four studies (34, 46, 59), and stakeholder coalitions or partnerships, three studies (64, 75, 76). Studies performing Social Network Analysis clearly defined the type of relationship to analyse, and identified communication, involvement in public health actions and strategic collaboration networks (67); information, position and action networks (38); financial resources flows, cooperation and information sharing (68); funding flows (70); research and advocacy networks (66); and stakeholder exchanges –information, resources-, and type of interactions –cooperation, conflict- (69). Moreover, two of the included studies analysed future potential relationships, such as willingness to form alliances (62), and links that needed to be built (77).

The relationships were mostly reported in a descriptive manner. The exceptions to this were two articles representing the relationships as lines in an influence map (33, 59); and the articles that performed Social Network Analysis reporting relationships in sociograms (38, 66-70). In terms of the data collection methods, those most commonly

used to perform this step of the analysis were: individual interviews; questionnaires; literature/document review; Net Map participatory interview; and direct communication.

Future actions and stakeholder engagement

Although the implications of the stakeholder analyses and their results were generally discussed in the included studies, only some authors made explicit the future actions based on the results obtained in the stakeholder analysis. Examples of these actions included: developing strategic approaches to achieve the desired change (54); select and implement policy measures to foster the adoption of an intervention (61); reach identified stakeholders with a communication intervention that addressed barriers and facilitators to support the implementation of the desired strategy (39); carry out stakeholder interviews to cross-verify the stakeholder network identified (66); or approach stakeholders to organise a workshop to develop a shared vision (19). Only six studies explicitly commented on strategies to engage or deal with stakeholders based on the results obtained (34, 53-55, 68, 78). Additionally, two more studies provided recommendations related to specific stakeholders: activities to secure decision makers' support (75), or to adequately represent and empower the public (51). Other type of recommendations were also provided: recommendations on performing stakeholder analysis (9), on how to use the results of a prospective stakeholder analysis (16); lessons identified by stakeholders for successful policy processes (46), or lessons for stakeholder engagement in health-sector reforms (60). Finally, some studies reported reflections on how to address complexity, such as addressing health issues in fragmented environments (79) or addressing "wicked problems" co-creating with stakeholders (56).

Reporting Items for Stakeholder Analysis (the RISA tool)

As a result of reviewing the literature, the experience of data extraction for this review and discussions between two authors, a comprehensive list of Reporting Items for Stakeholder Analysis was summarised in a tool (i.e., RISA; Table 4) to guide future systematic reporting of stakeholder analyses. The items in the RISA tool are structured in three main domains, corresponding to the steps for stakeholder analysis by Reed et al. (18) that were used to present the results of this review. Next to the items, three columns were created. The first column provides clarifications on the items. The second was created to introduce the page in which the information in each of the items is reported in a manuscript. The third column allows introducing the page of the manuscript stating why the information corresponding to a specific item is considered not necessary in a particular case.

Discussion

This systematic scoping review provides valuable insights on how stakeholder analyses have been used in practice across all phases of health innovation planning processes. It also shows the different applications of stakeholder analyses, which can vary from assessing the feasibility of an innovation, to understand the key stakeholders to involve in health planning, to design specific strategies to support the design or implementation of an innovation or to understand how interventions were developed or implemented. This review allows for easily locate practical examples of stakeholder analysis for inspiration and so may assist policy-makers, researchers or health planners to better understand the interest and usefulness of these analyses to enhance health innovation planning. Moreover, the review highlights shortcomings in the report of stakeholder analysis and the existing room for methodological improvement in this area. In this regard, the information in this article was organized following the key steps for stakeholder analysis (18) and a new guideline (i.e., the RISA tool) has been proposed to enhance the quality and transparency of stakeholder analysis.

Context of stakeholder analyses

The exponential growth in stakeholder analysis reports in the last three decades may indicate that these analyses are increasingly being recognised as an intrinsic part of health innovation planning processes. It also highlights the fact that stakeholders are inherent to health innovation planning processes. Moreover, the variety of countries across the world in which stakeholder analyses were performed show that their usefulness has no geographical restrictions and that they are applicable in different contexts and countries with highly disparate income levels and cultures. The stakeholder analysis information gathered in this paper for each of the phases of any health innovation planning process contributes to advance the overall knowledge of these processes. Looking at the results, the fact that stakeholder analyses are more used in the policy arena, both with a prospective and a retrospective direction, could be related to the existence of the seminal works published by Brugha and Varvasovszky (15, 25) in this area. In general, given stakeholder analysis usefulness and despite the growth in reports, there is still room for improvement in the use of these analyses in health innovation planning processes.

Methodological considerations for stakeholder analyses

Out of the three activities comprising the application of stakeholder analysis methods, the categorisation and differentiation of stakeholders is the one in which more emphasis was placed. It is somewhat surprising, that the identification of stakeholders

was at times overlooked, when stakeholders were going to be classified or categorised, fact that has previously been called to the attention of other authors (9, 18). The identification of stakeholders is critical and avoiding it may lead to the omission of stakeholders that could be important for the process (21, 24). On the other hand, the analysis of stakeholder relationships provides information on stakeholder dynamics that helps to better explain the complexity of the context in which the innovation takes place, and provides direction to develop and apply stakeholder management strategies (21). Although the extent and the thoroughness of the stakeholder analysis may be influenced by external circumstances, such as time, funding and human resources (19, 25), an effort should be made to ensure access to the information needed for the planning process.

The array of methods found in the studies and their multiple combinations highlight the flexibility of stakeholder analyses. At the same time, this variability also points out the challenge of deciding how many and which methods to use when planning for a stakeholder analysis. Conducting methodological research jointly assessing the methods and the usefulness of the results they yield for the planning process would be helpful to guide the future selection of methods. On the other hand, the heterogeneity also applies to the stakeholder attributes used in the analyses. Although power is the attribute that is first thought about and the most used in stakeholder analyses, the most powerful stakeholders are not always the most interested or the ones that need more attention (80). This may explain why several stakeholder attributes are usually combined in the studies. Therefore, it is helpful to decide upfront on the most useful information for a specific situation when choosing the right attributes to analyse. It is also necessary to consider who is going to carry out the analysis (i.e., experts vs stakeholders), since some of the attributes may be more complex to understand for a lay audience (e.g., stakeholder salience approach (20) analysing power, urgency and legitimacy) (9). Besides, it is important to clearly define the attributes that will be used and make them understandable to all participants to enable consistency throughout the analysis. This is illustrated by examples on how the same attribute can be used with different meanings, such as: the use of power and influence interchangeably (60) or as different attributes (48); or the use of impact both to refer to the impact the stakeholder has on the project (37, 49) or the impact the project has on the stakeholder (53, 81).

Future actions and stakeholder engagement

It would be useful that future actions and stakeholder engagement strategies based on the results of stakeholder analyses be recommended more often in papers. It is true

that not all processes are similar, and that reality makes it necessary sometimes to consider a balance between the information released and that which is kept internal (25). In addition, stakeholder engagement is broad and complex enough to be considered on its own. However, providing some recommendations, even if these cannot delve into the specifics, would complete the analyses, as well as increase the knowledge in the area and the understanding of stakeholder analyses applications. A good example is provided by Thomas and Gilson (22) on proposals to manage stakeholders based on the results of a stakeholder analysis. Although excluded from the review because the methods for the stakeholder analysis were not specified, this article may serve as inspiration, along with the examples provided in the results of this review.

Reporting stakeholder analyses and the RISA tool

The systematic reporting of studies is being promoted internationally by the Equator Network to enhance the quality and transparency of health research (82). As per the information in this study, stakeholder analyses have enough entity to be reported independently. Therefore, the RISA tool is proposed as a reporting guideline for stakeholder analyses. The items composing this tool come from the existing literature and have been piloted by their application to the 51 studies included in this scoping review. This tool may assist in providing solutions to different issues affecting the reporting of stakeholder analyses, as encountered in the conduct of this systematic scoping review. For example, in some of the articles assessed throughout the selection process, the authors declared doing a stakeholder analysis as part of their studies but did not report the methodology or results of this analysis (83-85). Besides, the heterogeneity found on the reporting of stakeholder analysis among those studies included in the review makes it a challenge to compare or even reproduce studies. Although confidentiality, or even strategy, could be reason to argue the level of detail or how the findings of a stakeholder analysis should be presented, there is no excuse to not clearly report the definitions, the context, and the methods used during the analysis. If this effort is undertaken, these analyses could be reproduced, evaluated and improved. At this stage, the RISA tool could also assist in defining future criteria to assess the quality of stakeholder analyses. Finally, the availability of systematic reports of stakeholder analyses may enhance the possibilities to compare studies and carry out systematic reviews in the future. This would, in turn, allow for improvement of the quality and transparency of the processes in which stakeholder analyses are used.

Limitations and strengths

Some limitations should be considered together with the results of this systematic scoping review. First, the terminology in this area is not clear. The term “stakeholder analysis” is used in the literature with two different meanings: analysing stakeholders’ characteristics vs having stakeholders analysing something. Moreover, some studies conducted a stakeholder analysis, although the term “stakeholder analysis” is not mentioned as part of the article; one study identified key stakeholders, their roles, incentives and power (44); another identified and categorised stakeholders (74); and yet another studied the actors and their interactions (69). To retrieve these articles, a combination of different terms and a sensitive search strategy was used. Creating MeSH terms for “stakeholder”, “stakeholder analysis” and “stakeholder mapping” would contribute to use consistent terminology, and thus ease the identification of literature related to this topic in the future. Second, the heterogeneity in the methods and reporting of stakeholder analyses precluded the synthesis of the results. To offset this inconvenience, detailed results are organised in tables that readers could easily consult. Third, excluding studies written in non-Roman characters could have introduced some language bias; however, this is a broadly used exclusion criteria in systematic reviews. Finally, it is considered that only one author extracted data, which was compensated by discussions of any uncertainty with a second author, and when no agreement was achieved between the two authors, a third one joined the discussion. The main strength of this scoping review is its comprehensiveness. The information compiled about stakeholder analyses in health innovation planning processes can be applied to future processes. In addition, the organisation of the results, following the key methodological steps for stakeholder analysis (18), provides structure to the heterogeneity found in the literature and makes the results easier to find and apply in practice.

Conclusion

Stakeholder analyses are used throughout the entire planning process of health innovations, more frequently for policies and services and delivery methods. They are used in a variety of countries with disparate income levels. There is great heterogeneity on how stakeholder analyses are carried out, and the attributes analysed for the stakeholders. This heterogeneity suggests that stakeholder analyses are a flexible technique and so it is important to report them thoroughly. It also highlights the need for methodological research in this area jointly assessing the methods and the usefulness of the results they yield for the planning process. The information gathered in this

review may help policy makers, practitioners and researchers improve their understanding of stakeholder analyses and their application in planning processes; it provides them with practical information on the methods, attributes and relationships used so far in stakeholder analyses. The RISA tool is provided to guide and foster the systematic reporting of stakeholder analysis. This, in turn, would enhance the quality and transparency of the research and planning processes in which stakeholder analyses are used.

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Conflict of interest

The authors declare no conflict of interest

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Tables

Table 1. Included studies, considering the health innovation and the phase of the planning process in which the stakeholder analysis was conducted
See Word file Table 1

Table 2. Methods used for stakeholder analysis identification
See Word file Table 2

Table 3. Stakeholder attributes and data collection methods for stakeholder categorisation/prioritisation
See Word file Table 3

Table 4. Reporting Items for Stakeholder Analysis: the RISA tool
See Word file Table 4

Figures

Figure1. Search Strategies

See Word file Figure 1

PubMed (02/06/2017)

"stakeholder theory" OR “stakeholder interviews” OR “stakeholder involvement” OR “stakeholder engagement” OR “stakeholder analysis” OR “stakeholder mapping” OR “actor analysis” OR “stakeholder identification”
OR
((“stakeholder groups” OR “stakeholder group”)
AND
(identification OR involvement OR engagement OR analysis OR mapping))
OR
((stakeholder[TIAB] OR actor[TIAB]) AND "network analysis"[TIAB])

Scopus (02/06/2017)

(TITLE-ABS-KEY((“health” OR “healthcare”))) AND (TITLE-ABS-KEY((“stakeholder involvement” OR “stakeholder engagement” OR “stakeholder analysis” OR “stakeholder mapping” OR “stakeholder theory”)))

DOAJ (02a/06/2017)

“stakeholder analysis” OR “stakeholder mapping”

Google (19/02/2018)

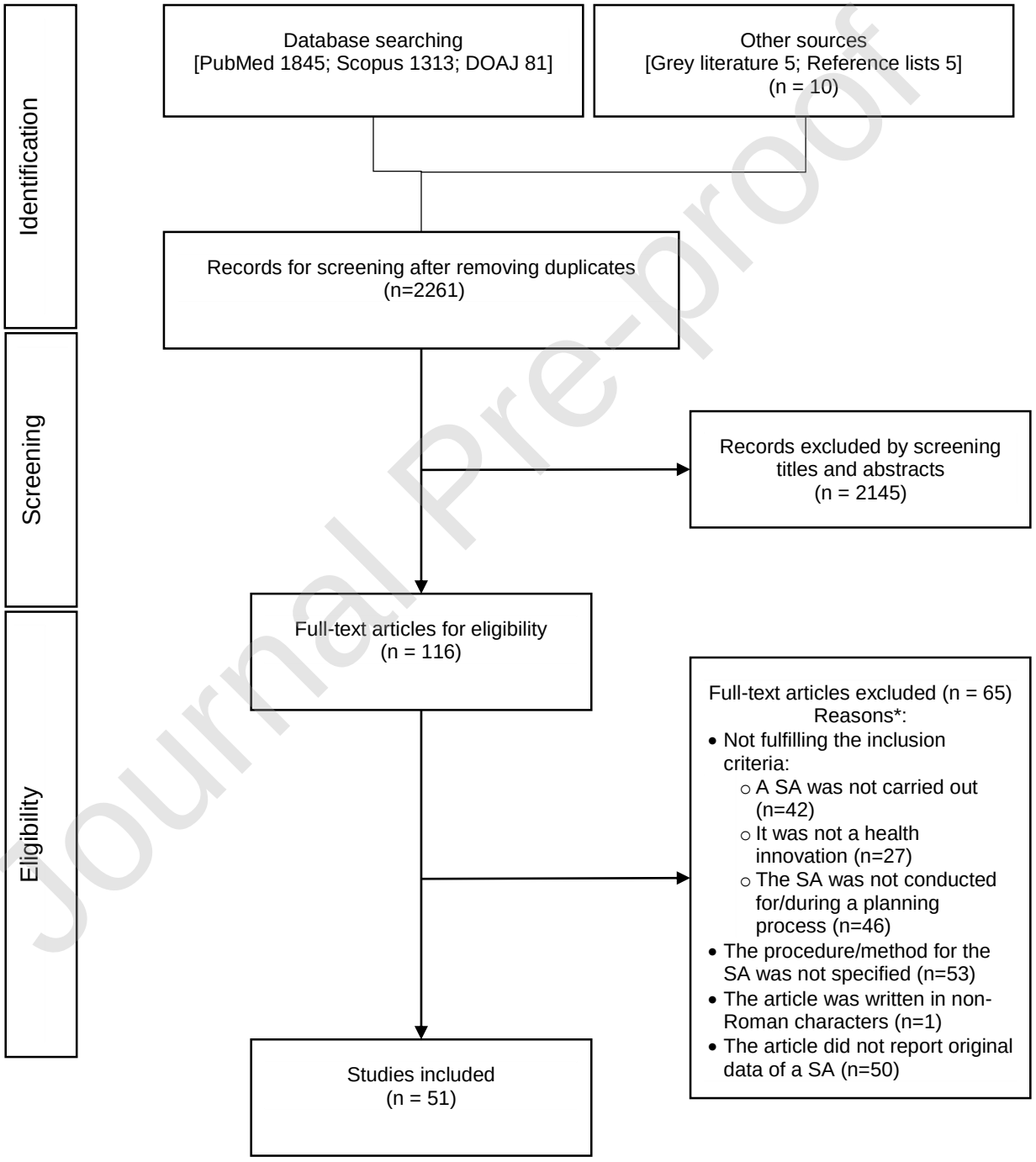
“stakeholder analysis” AND health filetype:pdf
“stakeholder mapping” AND health filetype:pdf

Figure 2. Study selection, based on the PRISMA flowchart [32]

*More than one reason may apply simultaneously

SA: stakeholder analysis

See Word file Figure 2



Supplementary material

Supplementary appendix 1. Data extraction form

Supplementary appendix 2. Characteristics of included studies