Invisible health participation research networks in the americas: bibliometric analysis of informal collaborations

Redes invisíveis de pesquisa sobre participação em saúde nas americas: análise bibliométrica de colaborações informais

Rodrigo Silveira Pinto
PhD in Pharmaceutical Sciences from the Universidade Federal do Rio Grande do Sul
Institution: Centro de Educação e Assessoramento Popular
Address: R. Aníbal Bilhar, 865, Vila Lucas Araujo, Passo Fundo - RS,
CEP: 99074-470
E-mail: rodrigospinto@gmail.com

Gabriele Carvalho de Freitas
Doctor in Collective Health
Institution: Universidade do Estado do Rio de Janeiro
Address: R. São Francisco Xavier, 524, Maracanã, Rio de Janeiro - RJ,
CEP: 20550-013
E-mail: gabi.cfreitas28@gmail.com

Carla Michele Rech
PhD in Sociology, Post-doctoral student in the Graduate Program in Collective Health
Institution: Universidade Federal do Rio Grande do Sul
Address: Farroupilha, Porto Alegre - RS, CEP: 90010-150
E-mail: carlatsul@yahoo.com.br

Henrique Kujawa
Doctor of Social Sciences from the Universidade do Rio dos Sinos
Institution: Università degli Studi di Perugia, Centro de Educação e Assessoramento Popular
Address: R. Aníbal Bilhar, 865, Vila Lucas Araujo, Passo Fundo - RS,
CEP: 99074-470
E-mail: henriquekujawa@gmail.com

Frederico Viana Machado
Doutor em Psicologia pela Universidade Federal de Minas Gerais
Institution: Universidade Federal do Rio Grande do Sul
Address: Farroupilha, Porto Alegre - RS, CEP: 90010-150
E-mail: frederico.viana@ufrgs.br

ABSTRACT
Studies on participation in health are based on different theoretical and methodological approaches and dialogue with different contexts and local problems, producing formal and informal collaboration networks that contribute...
to the development of the theme. This article analyzes informal collaboration networks on the topic of participation in health through the analysis of citations in common by authors who have published on the topic. To this end, a bibliometric analysis of articles in English, Spanish and Portuguese was carried out based on searches carried out in VHL, PubMed, SCOPUS, WOS and SciELO, consolidating a database with 641 references. With the help of the VOSviewer software, we analyzed patterns of bibliographic coupling and co-citation of references. Bibliographic coupling represents the indirect interaction between pairs of documents, authors, organizations or countries in a given area of research and occurs when two of the aforementioned subjects share at least one bibliographic reference in their publications and the co-citation comprises the frequency in which two authors are mentioned. The analysis offers an overview of what has been studied and applied in the field of health in terms of participatory methodologies, which points to the importance of comparisons and syntheses at an international level to renew research fronts and practices related to participation in health.

**Keywords:** public health, community engagement, social participation, bibliometrics.

**RESUMO**

Os estudos sobre participação em saúde se fundamentam em diversas abordagens teóricas e metodológicas e dialogam com os diferentes contextos e problemas locais, produzindo redes de colaboração formais e informais que contribuem para desenvolvimento do tema. Este artigo analisa as redes informais de colaboração sobre o tema da participação em saúde por meio da análise de citações em comum de autores que publicaram sobre o tema. Para tanto, foi realizada uma análise bibliométrica de artigos em inglês, espanhol e português a partir de buscas realizadas na BVS, PubMed, SCOPUS, WOS e SciELO, consolidando uma base de dados com 641 referências. Com auxílio do software VOSviewer, analisamos padrões de acoplamento bibliográfico e cocitação de referências. O acoplamento bibliográfico representa a interação indireta entre pares de documentos, autores, organizações ou países em determinada área de pesquisa e ocorre quando dois dos sujeitos anteriormente citados compartilham ao menos uma referência bibliográfica em suas publicações e a cocitação compreende a frequência em que dois autores são citados concomitantemente em um trabalho. A análise oferece um panorama sobre o que vem sendo estudado e aplicado no campo da saúde em termos de metodologias participativas, o que aponta para a importância de comparações e sínteses em âmbito internacional para renovarmos as frentes de pesquisa e as práticas relacionadas à participação em saúde.

**Palavras-chave:** saúde pública, engajamento comunitário, participação social, bibliometria.
1 INTRODUCTION

The construction of Health Care Systems (HAS) involves the implementation of several policies, which deal with aspects related to ensuring rational access to resources to prevent, protect and recover from diseases and diseases, as well as promoting habits of quality of life. Among the health policies needed to sustain the system, we have governance, which is the capacity of managers, service providers and society to interact among themselves for the construction and revision of strategies implemented in the territories. Since the beginning of the 19th century, the inclusion of society in health actions occupies an important place in management, being a recurrent theme of government research and enterprises, thus producing a large number of publications around the world. With the publication of the Sustainable Development Goals, this item gained more prominence, in particular to increasingly include society in decision-making, through organized social movements, non-governmental organizations, companies and the individual action itself as a volunteer work.

When we observed the historical construction of the SAS, the inclusion of the people who used the health service in the decision making was heterogeneous. Morgan (2001), reviewing how participatory policies developed in Latin American countries, perceived two distinct strategies. The first, focused on utilitarianism, understands society as a receiver of the guidelines coming from the health services, and its main role is in the dissemination and fulfillment of these actions. The second, focused on empowerment, aims to transfer decision-making power to society, providing it with sufficient information to understand the network of influences that determine the health-disease process, to jointly with health professionals and managers think emancipatory strategies to deal with these problems.

This paradigm proposed by Morgan (2001) is based on the scientific productions that existed at that time. However, it seems important to us to know whether this interpretation remains current, in view of the volume of work published on the subject, especially in the last two decades (YUAN ET AL., 2021; MACHADO et al., 2023a). Participation in Health, in its various research
frameworks, is an object of interest of several disciplines and areas of knowledge. The behavior of the academic field established around this theme involves journals, institutions and researchers that are located at the interface between health sciences and social sciences, producing complex interaction patterns that are difficult to delimit. Currently there are strategies to understand the interactions in a field of research, considering publications, authors, periodicals and countries, by means of software that analyzes large databases of publications. One of them is carrying out bibliometric and scientometric reviews of the scientific literature. Generally speaking, bibliometry quantifies, by means of metadata, the production, dissemination and use of information and scientific analysis relates these quantitative aspects to social and economic contexts to discuss scientific development in a given field of knowledge (GRÁCIO, 2020).

Yuan et al. (2021) built the first bibliometric and scientific review on Participation in Health in the world, reporting the trends of this field in world literature and proposing a model for understanding this concept. However, an important limitation of his work was precisely the search strategy of scientific studies, where he used the term "community engagement" and its synonyms to portray the scientific field. This term has a recent coinage (CENTERS OF DISEASE CONTROL AND PREVENTION, 1997) and does not cover all strategies for including society as a decision maker. Furthermore, as it has a global vision, it does not cover the particularities of the American continent, which have several models of SAS and indexing terms specific to reporting scientific studies on Participation in Health.

To broaden the scope of understanding of studies on participation in health, the Center for Education and Popular Advice (CEAP), through a letter agreement with the Pan-American Health Organization and the National Health Council proposed to study the field of research on Participation in Health in the Americas (CEAP, 2022). To do so, it set up a research group that conducted a bibliometric and scientific review of the scientific literature, selecting search terms in Portuguese, English and Spanish, and in different indexing databases that reflected the evolution of this field over time. The studies published until August
12, 2021 were included for inclusion analysis and further processing for production of the general picture of this field on the continent, which resulted in 641 works selected as per the revision protocol.

In relation to the results obtained, Machado et al. (2023a) presented the formal relations of the field of research, characterizing the publications as to the frequency, temporality, language and country of origin of the first author, authors and articles most cited by the analyzed works, and the co-authoring relationships, which help to understand the construction of formal networks of collaboration between institutions and countries. In addition, there is a paper in the press (MACHADO et al, 2023b) in which the cooccurrence of words is presented, quantifying and relating the terms that appear in the titles and abstracts of the 641 works over time, showing the research themes and the theoretical and methodological approaches and distances of the field.

In this article, informal networks of collaboration will be presented and discussed. The work of Machado et al. (2023a) demonstrated this impact of the 641 works among themselves, but not with regard to citations of studies and other documents outside this database. Within a field of research, the number of times a reference is cited demonstrates its influence on the way the researcher understands the theme of the research problem, draws up the methodological strategy to carry out his work and debates the data obtained. Therefore, different researchers, when citing the same studies, are receiving similar influence, creating an invisible research network, but which can now be detected by the scientific analysis of scientific literature. In other words, the objective of this chapter is to present the invisible network of research on Participation in Health in the Americas, identified in the bibliometric analysis by means of the verification of bibliographic coupling and by cocitation.

It is important to note that in this text, we will use the term "Participation in Health" to identify all forms of inclusion of the users of health services in the diagnosis, planning, execution, monitoring and evaluation of health policies, with reference to this construction the work of Rifkin (1996) and Silva et al (2017). Although this generalization conceals conceptual specificities, it will be useful for
us to understand the extent of the networks that study participation in health and, consequently, the presence of this theme in world scientific production. This seems especially relevant at a time when participation has been discussed in the Brazilian public arena in a polarized way, between those who defend and those who attack the participatory framework of public policies built on constitutional bases after the period of redemocratization.

2 METHOD

The detailed method of this work can be found in CEAP (2022). It is a bibliometric and scientific review comprising scientific articles in English, Spanish and Portuguese on Participation in Health in the American continent published until August 12, 2021. Metric studies of scientific publications allow us to understand the content analyzed and its structure, identifying schools of thought and its evolution. The bibliographic searches were performed on the Portal of the Virtual Library on Health, Medical Literature Analysis and Retrieval System Online (MEDLINE) through Pubmed; SCOPUS, Web of Science (WOS) and Scientific Electronic Library Online (SciELO). For the processing and analysis of the data, ENDNOTE X20, Microsoft Excel 365, Google Spreadsheets and VOSviewer software were used.

VOSviewer is software used to process and view bibliometric information and build maps with nearby networks and supports a large volume of data (VAN ECK, WALTMAN, 2021). When the software is launched to perform some analysis, the first generated file is a Table that presents the data that will be visually demonstrated. This Table presents the data disposition per unit of analysis (Countries, Institutions, Authors, Documents and Sources where the documents were published) along with the quantitative data (number of publications and citations) and the "strength of the connection" that that unit of analysis has. ‘Binding strength’ means the number of associations that the unit of analysis has with the others. The second file is an image depicting the relationship of the Units of Analysis to each other, which is demonstrated by the binding force, i.e. the number of connections each Unit of Analysis has with the
others. Nearby Analysis Units generate a cluster, which is a grouping with common characteristics. When a cluster was detected, the researchers observed the studies, authors, journals and related countries for the construction of reflections on the field of research.

In this paper, we will discuss the analyzes of Bibliographic Coupling and Cocitation. As explained above, citation, co-authorship and co-occurrence analyzes demonstrate the "visible" networks of the field researched (MACHADO et al., 2023a), while bibliographic coupling and cocitation demonstrate the invisible networks. Bibliographic coupling is a citation relational analysis that represents the indirect interaction between pairs of documents, authors, organizations or countries in a given research area and occurs when two of the previously cited subjects share at least one bibliographic reference in their publications (GRÁCIO, 2020). In this way, it presents an informal relationship between the analyzed peers, presenting a common intellectual environment, and may have a theoretical and methodological approach. The strength of the bibliographic coupling is measured by the number of references in common between the pairs of data analyzed, which makes it possible to measure the methodological and thematic proximity of the scientific community as a whole.

The cocitation analysis, on the other hand, includes the frequency at which two authors are cited concurrently in a work, which allows a thematic analysis, since the fact that they are cocited presupposes an approximation and dialog between research fields (GRÁCIO, 2020). Thus, while the bibliographic coupling presents an approximation between the units of analysis, the cocitation presents the terms of this approximation.

3 RESULTS AND DISCUSSION

The analysis of bibliographic coupling between the articles presented a relationship between 308 (48.05%) documents, presented in Figure 1, where four main clusters were highlighted. Table 1 shows the documents with the most matchings. It is observed that the production in this area does not present a bibliographical basis shared among all the authors (344 documents did not
present any relation) presenting complementary research fronts that stood out most in the sample by the volume of common citations.

Figure 1: Bibliographic Coupling between Documents and Main Clusters on Participation in Health in the Americas

Table 1: Articles with greater Bibliographic Coupling on Social Participation in the Americas

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Author(Year)</th>
<th>Title</th>
<th>Total binding force</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Paiva et al. (2014)</td>
<td>Social participation and health in Brazil: a systematic review</td>
<td>85</td>
</tr>
<tr>
<td>1.</td>
<td>Santos et al. (2020)</td>
<td>Health councils and dissemination of SUS management instruments: an analysis of portals</td>
<td>76</td>
</tr>
<tr>
<td>1.</td>
<td>Serapioni (2014)</td>
<td>Citizenship and participation in the health systems</td>
<td>75</td>
</tr>
<tr>
<td>2.</td>
<td>Chung et al. (2012)</td>
<td>Residents’ perceptions of effective community representation in local health decision-making</td>
<td>61</td>
</tr>
<tr>
<td>3.</td>
<td>Thurston et al. (2005)</td>
<td>Public participation in regional health policy: a theoretical framework</td>
<td>61</td>
</tr>
</tbody>
</table>

Source: authors' development based on the database, 2023


Source: authors’ development based on the database, 2023

There is a predominance of Cluster 1, with review studies, as well as studies published in the Revista Ciência e Saúde Coletiva, located in Brazil. One notices an effort in synthesizing evidence from this field, especially from Brazil, since the system of Social Participation and Control in this country was inserted as the constitutional principle of the Unified Health System through a movement known as Brazilian Health Reform that emerged in the 1970s postulating the democratization of access and the participation of the community in health decisions (PAIM, 2008). This Participation was operationalized through Health Councils and Conferences, deliberative and supervisory instances of health policy existing in all Brazilian federal units, where 50% of its members are representatives of civil society. This need to expose the knowledge about the form of participation and social control in that country was evidenced by Silva e Lima (2021), which also presents a low theoretical density and a need to evaluate the impact of participation.

Cluster 2, on the other hand, shows the production relationship related to Latin American and Caribbean countries. The work of Chung and collaborators (2012) dialogues with the same theoretical basis of this Cluster, but speaking of the United States. It is perceived in this Cluster productions that report the challenges of social participation in the countries, which can be justified by the Health Reform that occurred in these in the late 1980s onwards, pressed by a neoliberal logic (HOMÈDES AND UGALDE, 2005) in which Social Participation was occurring in a specific way in each territory (INFANTE et al., 2000), causing the need to discuss strategies and experiences.

In Cluster 3 and 4 we find more propositive articles, which present theoretical models, intervention studies and case studies in communities, with the...
objective of seeking concrete and measurable results in health. In these works, Participation and Social Control are seen as the means to achieve these results. In the United States, the evaluative focus of health promotion policies at the community level was demonstrated by Merzel and D’Afflitti (2003), relying on work since the 1980s.

The most cited references among the articles analyzed are expressed in Table 2 and in Figure 2.

Table 2: Documents most cited among the documents that deal with Social Participation in Health in the Americas

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Authorship (Year)</th>
<th>Title</th>
<th>Total binding force</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Wallerstein et al. (2010)</td>
<td>Community-based participatory research contributions to intervention research: the intersection of science</td>
<td>437</td>
</tr>
<tr>
<td>1.</td>
<td>Wendhausen et al. (2002)</td>
<td>Dialog and participation in a local health council in the State of Santa Catarina, Brazil</td>
<td>397</td>
</tr>
<tr>
<td>3 and 4</td>
<td>Wallerstein (1992)</td>
<td>Powerlessness, empowerment, and health: implications for health promotion programs</td>
<td>395</td>
</tr>
</tbody>
</table>

a= This is the only document that is not a scientific article.
Source: authors’ development based on the database, 2023

Looking at the information inserted in Figure 2 and Table 2, there is a direct association between the most cited texts and the docking clusters of the database.
documents. The works of Wendhausen and Caponi (2002) and Gerschman (2004) exemplify the search found in Cluster 1, to understand the workings of the dynamics of participation in health in Brazil. Observing the most cited articles in that country, one can find studies such as that of Oliveira (2004) and Bispo Júnior and Sampaio (2008) that also seek to understand the functioning dynamics of these deliberative instances of participation, as well as works that make reviews and positions on the status of participation at the time they were published.

Cluster 2, depicted by the most cited work (MORGAN, 2001), rescues production related to Social Participation in Health with a focus on Latin American experiences. It also presents quotes that portray experiences of different countries in the dynamics of Participation and Social Control in Health, when one observes only works published in Countries of Latin and Central America, excluding Brazil. A strong influence of Colombian publications (MOSQUERA et al., 2001; DELGADO-GALLEGØ & VÁZQUEZ-NAVARRETE, 2002), Brazilian publications (WENDHAUSEN, 2006) and literature reviews on the subject with a more propositional focus, seeking action points for strengthening Participation and Social Control in health (BRONFMAN & GLEIZER, 1994; ZAKUS & LYSACK, 1998).

Cluster 3 presents a focus of practical proposals for health intervention together with the participation, essentially of work coming from Canada. The great influence of the articles is in relation to Health Promotion, since the First International Conference on Health Promotion was held in the city of Ottawa, one of the efforts to achieve the goals proposed in the Alma-Ata Declaration (WHO, 1978). Different strategies for the implementation of Health Promotion are perceived, such as knowledge of the different forms of local Social Participation and Control (GODBOUT, 1981; ABELSON, 2001) as well as methodologies for participation classification (ARNSTEIN, 1969).

Cluster 4, on the other hand, has a direct focus on publications in the USA. Looking only at publications originating from that country, the most cited ones have a focus on participatory research methodologies, in particular the use of Community-Based Participatory Research, a research methodology where
researchers and research subjects dialog and build together all stages of a research with a focus on social change (WALLERSTEIN ET AL., 2018). In addition, there is a positioning on the importance of Social Capital, where Putnam (2001) showed the change in social relationships of the American population over decades and its impacts on family life, community life, and participation in decision-making institutions.

The citation of authors helps us to understand the intellectual scientific structure created around Social Participation and Control in Health in the Americas. Grácio (2020) points out that the complete work of an author best represents his position in the scientific network built in a given scientific field. Thus, besides showing the influence of each author in the network, the relationships built up between them show the theoretical and methodological approaches and oppositions that arise in the scientific articles researched. Among the 10,164 authors cited in the articles of this analysis, 297 (2.92%) are cited five or more times, and their five interaction clusters are presented in Figure 2.

Figure 2 - Quote from the main authors on Participation and Social Control in the Americas

Source: authors’ development based on the database, 2023. The interactive version of the figure can be accessed at: https://tinyurl.com/2jky9zzd
The red cluster presents the intellectual structure of the studies that evaluated Brazil. The greatest concentration of authors is observed, in addition to the presence of many authors with high binding forces between the other clusters, presenting the main lines of thought of this cluster. Leonardo Avritzer, who researches in the area of political science and participatory and deliberative democracy, with a focus on Latin America and participatory arrangements in Brazil. Other authors, such as, Soraya Maria Vargas Cortes, Silvia Victoria Gerschman de Leis, Sarah Escorel, Cornelis Johannes van Stralen, Sonia Fleury, Francini Lube Guizardi, among others, present a similar thought, with studies that portray from the line of the Brazilian Health Reform (PAIM, 2008) its reflections on the dynamics of the country's participation. In addition, one can also see the interest of authors from other countries about this context and its application in other realities, which can be evidenced by the presence of authors such as Andrea Cornwall and Marian Barnes. It is noticeable that the works of Jürgen Habermas are cocited with the majority of the authors in this cluster, presenting a theoretical approximation of his thinking for the construction of the intellectual network of Social Participation and Control in Brazil. The presence of authors such as Maria Cecilia de Souza Minayo and Laurence Bardin also points out that the methodological focus of this research is of a qualitative nature.

A Brazilian educator and philosopher who appears with cocitation relations in all clusters is Paulo Freire, considered one of the most notable Brazilian thinkers in the area of pedagogy and his book "Pedagogy of the Oppressed", written in 1968, is the third most cited in academic works in the area of humanities worldwide (VEIGA, 2019). Among his numerous contributions, Freire proposes that the educator always have a critical and transformative posture, going from a mere transmitter of knowledge to an inducing agent of self-reflection on the act of learning and seeing reality, being a catalyst for the liberation of peoples (SANTOS & TAVARES, 2020).

Besides connecting with Brazilian researchers, one can note Freire's influence on foreign researchers, such as Nina Wallerstein, one of the leading global authors in the field of studies on community engagement in public health.
and community-based participatory research, whose publications figure among the top 20 publications in literature on community engagement in public health found by Yuan et al. (2021), one of them being Wallerstein and Duran (2010) ‘Community based participatory research contributions to intervention research: The intersection of science and practice to improve health equity’, the most cited publication according to the authors. Wallerstein is also a prominent author in terms of formal collaborations, forming one of the main clusters in the co-authorship analysis among the most relevant authors who publish on social participation and control in health in the Americas (MACHADO et al., 2023a), both by composing the cluster that brings together the most relevant researchers whose focus is community-based participatory research and community empowerment in health, and by connecting this cluster to the cluster that brings together researchers dedicated to research and development of health interventions targeting chronic patients, as well as making connections with the cluster of authors dedicated to research and development of health interventions targeting social minorities and ethnic groups. Since its research, developed since the 1980s, has been predominantly focused on work with indigenous tribes and Latino and Hispanic communities in New Mexico and the United States. According to Wallerstein, his thirty-year experience in community-based participatory research is firmly grounded in the beginning of his career with adult education in the USA, based on Paulo Freire's philosophy "of "reading the world" and his call to have faith in people's knowledge to take control over the conditions that affect their lives and their communities", with which he had contact in the mid-1970s, during his stay in Brazil, and which since then has sought to maintain these principles, applying the ideas of co-building knowledge with participatory partners.

The green cluster presents the World Health Organization's pole and publications focusing on Latin America. It presents in this group institutions such as the Pan-American Health Organization, the World Bank and Latin American government agencies, as well as authors who wrote documents at the request of these institutions, like Barbara Starfield, who had her book that discusses the
capabilities of Primary Health Care reprinted at the request of the Brazilian Ministry of Health (STARFIELD, 2002). It presents authors such as Antônio Ugalde, a researcher who studies various aspects of Latin America, such as its health reforms, Pharmaceutical Assistance, political violence and the issues involving clinical trials in these countries. Other authors present a similar view, debating the impacts of the participation in specific Latin American countries, such as María Eugenia Delgado-Gallego, who studies about participation in Colombia. The proximity to the author Robert K. Yin, who presents in his work the importance of the Case Study, shows the main methodological line of this cluster.

The purple and brown clusters correspond to Canadian authors. While the Purple cluster, with authors such as Julia Abelson, John Church and Julie Godbout seeking to develop and evaluate specific models for Canadian realities of participation, Melaine Levasseur and Lucie Richards focus on the inclusion of older people in community life.

The blue cluster is represented by American authors and institutions. In addition to the previously mentioned authors, who demonstrate the cluster's focus for participating research, we also have the presence of institutions such as the Centers of Disease Control and Prevention, and the United States Census Bureau and the Institute of Medicine, present epidemiological data, offer guidelines and methods for community engagement. Unlike the other clusters, here already appear authors who conduct randomized clinical trials in relation to the theme of participation, focusing on the iniquity of access to kidney transplantation (Rachel E. Patzer, Amy Waterman and James Rodriguez).

The Yellow Cluster has authors who debate about Social Capital. Robert Putnam, one of the creators of the term Social Capital, has observed a trend of decline of Social Capital in the USA since the 1960s, which represents a rise in the alienation of society and discredit in institutions, mechanisms of participation and in the very resolution of society's problems (PUTNAM, 1995). Ichiro Kawachi tries to bring Social Capital closer to health outcomes, where his most cited work has a direct association between social ties and feeling of belonging with mortality
for all causes. Martin Lindström, Richard Carpiano and others also have this line of work. Another point that also appears in this cluster are the researchers that make use of Information and Communication Technologies, like Kevin Wright.

4 FINAL CONSIDERATIONS

In this work we map the fundamentals and research fronts in the studies on participation in America, seeking to locate the invisible networks of collaboration and study fronts on participation in health, through the analysis of common citations. We have identified authors who have stood out as an influence in the field, as well as more studied themes, which contributes to a context view in understanding the field of participation studies.

Some limitations occurred in the analysis of bibliographic coupling. As health articles usually have many authors, this characteristic compromises the evaluation of the coupling between authors, because the system evaluates the authors separately, and not only the first author of each article. Thus, it cannot be said that some of the networks presented are informal collaborations.

Despite this limitation, the wide range of information from bibliometric analysis offers a detailed overview of what has been studied and applied in the field of health in terms of participatory methodologies. At this moment, in which efforts have been made to rethink Brazilian participatory practices, we bet that comparative exercise in an international perspective is fundamental for us to renew the research fronts and practices related to participation in health.
REFERENCES


BISHOP JÚNIOR, José Patrício; SAMPAIO, José Jackson Coelho. Social participation in health in rural areas of Northeastern Brazil. Rev Panam Salud Publica 23(6), 2008


POPULAR EDUCATION AND ADVISORY CENTER. Bibliometric review on social participation in health in the americas. Step Background: Saluz, 2022. - (COVID-19 collection and social control in the SUS: impacts, dynamics, agendas and strategies; v. 3).223p

Available at: https://ceap-rs.org.br/arquivo/Pesquisa-Covid-e-Controle-Social_vol3_revisao-2022.pdf


HEATON, Kevin et al. Community grand rounds: re-engineering community and academic partnerships in health education-a partnership and programmatic evaluation. Prog Community Health Partnersh.8(3):375-85. 2014


WORLD HEALTH ORGANIZATION. The Ottawa Charter for Health Promotion. Ottawa, Canada: WHO; 1986.


STARFIELD, Barbara. **Primary care: balance between health, service and technology needs.** Brasília: UNESCO, Ministry of Health, 2002


VEIGA, Edson. **Paulo Freire: how the legacy of the Brazilian educator is seen abroad.** Available at: https://www.bbc.com/portuguese/brasil-46830942. Access at 05 Mar. 2023


WALLERSTEIN, Nina; DURAN, Bonnie; OETZEL, John G; MINKLER, Meredith. **Community-Based Participatory Research for Health: Advancing Social and Health Equity.** 3rd Edition. San Francisco: Jossey-Bass, 2018


