Scientific research about the National Policy for Health Promotion

Abstract The objective of this study was to assess the level of knowledge and systematization of scientific research linked to the National Health Promotion Policy (PNPS) ten years after its implementation. A scientometric study was conducted of the national and international scientific literature about the PNPS using the PubMed and SciELO databases. The study was carried out in the month of December 2015, using the phrase “national health promotion policy” which resulted in the identification of 88 publications related to the PNPS. The years 2012 and 2013 had the greatest number of articles published, identifying the National Policy on Diet and Nutrition and the theme of Oral Health as the most studied subjects. The states of São Paulo, Rio de Janeiro, and the Federal District stood out for the quantity and quality of scientific production, which was mostly published in international journals classified in the Qualis A2 stratum. The policies of Emergency Care, Maternal-Infant Health, and Adolescent Health were the themes least explored. Although scientific research has contributed to the application of technical and scientific knowledge in the promotion of health, the underexplored sectors may hinder the design and reformulation of strategic actions for addressing health inequities in subsequent decades.

Key words Public policy, Quality of life, Publications, Public sector
**Introduction**

The institutionalization of health promotion (HP) in Brazil occurred more than 27 years ago, after the promulgation of the Federal Constitution of 1988. Since then, inter-sectorial actions have been implemented, as much in the realm of public policy as in scientific production, in order to confront inequities in health\(^1\)\(^-\)\(^3\). The involvement of teaching and research institutions with the strengthening of HP as a strategy for the improvement of quality of life and health can be perceived, expressed in the growing increase of graduate programs involved with this theme\(^4\)\(^,\)\(^5\). On the other hand, HP programs were only effectively implemented in the Primary Healthcare Units in observance of the introduction of the National Health Promotion Policy (PNPS)\(^6\)\(^,\)\(^7\). This process formalized the inclusion of actions directed to the improvement of quality of life and the reduction of vulnerabilities and risk factors related to health factors in the country’s health agenda\(^8\).

Programs involved with the promotion of physical activity; healthy diet; non-consumption of tobacco; and the implementation of healthy environments are the most prevalent in the UBS of the country. At least one of these is offered in the majority of units, and three or more in half of them\(^9\). Although strategic actions such as those aimed at the control of tobacco use had already promoted a significant reduction in the prevalence of smoking in the adult population\(^9\)\(^-\)\(^11\), an increase in the abusive consumption of alcohol and illicit drugs in young persons and adults in the country\(^12\)\(^-\)\(^14\) are examples of targets yet to be attained, and constitute a challenge to be overcome.

In any event, the results obtained after establishment of the PNPS signal an early breakthrough in the constitutional challenge to consolidate the implementation of the programs, and encourage the development of new approaches for facing the inequities in health. The success of health actions does not depend only on investments in infrastructure and training of personnel, but also in the integration between different sectors and sciences, particularly those with an interdisciplinary focus. The articulation of scientific knowledge with the formulation of new strategies facilitates decision making and guarantees the greater success of the actions aimed at the resolution of the problems\(^15\)\(^,\)\(^16\).

Knowing and systematizing the scientific production linked to HP can aid in the evaluation of the achieved results and in envisioning the institutional formulation, review, and improvement of the PNPS, and guarantee the strengthening and solidifying of HP strategies in the country. Scientometric studies have frequently been carried out for the quantitative and qualitative analysis of scientific production in a specific field, especially in health\(^17\)\(^,\)\(^18\). In the present study, we present a scientometric analysis of the scientific contributions oriented to the process of planning, analysis, and evaluation of the PNPS. This illustrates the importance of HP as an area of research and reinforces the initiatives of integration between science and health services.

**Materials and methods**

A scientometric study was conducted of the national and international scientific literature about the National Health Promotion Policy (PNPS)\(^19\), approved by the Ministry of Health by Decree No. 687 on March 30, 2006. The research was carried out using the databases indexed in the United States National Library of Medicine (PubMed), accessed through the website http://www.ncbi.nlm.nih.gov/pubmed, as well as the Scientific Electronic Library Online (SciELO), available through the Virtual Health Library (BVS) on the site http://bireme.br.

The research was done in the month of December 2015 using the Portuguese terms “política nacional de promoção da saúde” and their corresponding English equivalents, “national health promotion policy.” For the English search, the word Brazil was added. For the PubMed database, the data filter Publication dates – 10 years was used, and for the SciELO database, the years 2006 to 2016 were selected.

The identified articles were selected and classified using an analysis of the titles and abstracts. Articles were excluded whose central theme was related to disease epidemiology, case studies, research in the fields of basic sciences, among others that do not fit in the themes of the PNPS. After the reading of abstracts, the works included in the study were classified by year of publication, place of origin of the publications (based on the first author), name of the periodical where the article was published, and then grouped into the WebQualis tiers (A1, A2, B1, B2, B3, B4, B5 e C) in the corresponding interdisciplinary area. The WebQualis classification refers to the stratification of the quality of scientific production utilized by the Coordination for the Improvement of
Higher Education Personnel (CAPES) to evaluate the periodicals in the different research areas in Brazil.

The publications included in this study were also classified according to the relevant stages in the implementation process of the PNPS and by the corresponding themes of organization, planning, execution, analysis, and evaluation. Following this, the articles were analyzed and categorized according to the following public policy sectors: National Policy of Primary Care (Pnab); National Policy of Diet and Nutrition (Pnan); National Policy of Popular Health Education (Pnep-SUS); National Policy of Humanization (HumanizaSUS); National Policy of Strategic and Participatory Management (ParticipaSUS); National Policy of Integrative and Complementary Practices (PNPIC); National Policy for the Reduction of Morbidity by Accidents and Violence; National Policy of Emergency Care; and the National Policy of Integrated Health for Specific Populations (black population and LGBT).

The analysis of titles and abstracts also made it possible to elaborate specific and complementary thematic axes, due to the fact that some of the articles consider more than one theme simultaneously, for example, nutrition and health of the elderly, popular education on health and obesity, and men’s primary care and health, among others. Finally, the data was tabulated and organized in spreadsheets in the program Microsoft Excel 2010.

Results

In the initial phase of the search process, 150 scientific publications were found: 85 of these were in the PubMed database, and the other 65 in SciELO. After the evaluation of titles and abstracts, duplicate articles and those that did not meet the criteria of inclusion were excluded, resulting in 88 articles.

Figure 1 presents the articles published in the PubMed and SciELO databases. The first analysis of the articles identified an increase in scientific production beginning in 2008, with an emphasis on the years 2012 and 2013, in which there were a greater number of publications related to the PNPS.

In light of the implementation process of the PNPS, it was possible to identify that of the 88 total publications, 38% (33) were related to the stages of organization, planning, analysis, and evaluation of the PNPS. Among these, a majority of 58% (19) refer to the analysis of health sectors, and in contrast, none of the publications described the stages pertaining to the realization of actions related to the PNPS (data not shown).

Figure 1. Number of articles about the NHPP published in the PubMed and SciELO databases in the period of 2006 to 2015.
The analysis of the themes according to health sectors described in the PNPS identified that the greatest amount of research was about Diet and Nutrition, followed by research related to Primary Care and the policy of Strategic and Participatory Management (Figure 2A). Among other categories of the thematic axes, Dental Health, Health of the Elderly, Men’s Health, and Training of Professionals and Managers figured as the most discussed themes in the scientific literature (Figure 2B).

The classification of the articles according to locale of origin of the research is shown in Figure 3. It should be noted that the states of São Paulo (19), Rio de Janeiro (16), and the Federal District (16) account for 58% of the 88 articles related to the PNPS. Among the other states, Paraná, Bahia, Goiânia, Paraíba, and Ceará were represented. In terms of publications originating from other countries, researchers from the United States, Canada, Italy, France, and England are included.

The findings of the classification regarding scientific quality in the articles analyzed in this study showed that the majority of the research is published in international periodicals, classified in the Qualis strata A1 and A2 (Interdisciplinary area), totaling 51% (45). This is followed by another 30% (26) publications in periodicals classified in stratum B1 (Figure 4).

The percentage of periodicals with a greater concentration of publications related to the PNPS is represented in Figure 5. It should be noted that the Revista Ciência & Saúde Coletiva accounts for 24% of the publications, followed by the journals Saúde e Sociedade (11%), and Cadernos de Saúde Pública (10%). The journals presented in Figure 5 possess scientific quality in the Qualis/Capes strata A1, A2, B1, and B2 in the Interdisciplinary area.

Discussion

A decade after the publication of the National Health Promotion Policy (PNPS), it becomes relevant to measure the scientific production related to the implementation of health policies in Brazil, beginning with the publication of the PNPS by Decree MS/GM No.687 on the 30th of March, 2006. Its evolution can be appreciated in

![Figure 2](https://example.com/figure2.png)

**Figure 2.** Number of articles published in the period 2006 to 2015 related to the PNPS. Classifications based on: public policies of the health sectors cited in the PNPS (A); in complementary thematic axes (B), and sampled in December 2015.

* Some analyzed articles span more than one thematic axis simultaneously.
the revision of the PNPS issued by the Decree No. 2,446 of the 11th of November, 2014\textsuperscript{20}. The present research, for its part, using a scientometric analysis, identified peculiarities in the behavior of Brazilian scientific research in the themes referring to the PNPS.

Different from what has been presented by the Ministry of Science, Technology, and Innovation for the Brazilian scientific publications, whose scientific production showed continuous and constant growth\textsuperscript{21}, the volume of research in respect to the PNPS during the last decade suffered fluctuations, with an increase in the years of 2008, 2012, and 2013. It was clear that in the first years after the PNPS was instituted, the authors restricted themselves to debating and reflecting on the guidelines of the health programs\textsuperscript{22} and on health promotion itself, in Brazil\textsuperscript{23,24} and in Latin...
America\textsuperscript{23}. Since 2008, after a cycle of one year of implementation of the PNPS was completed, there was a prevalence of research oriented to themes related to diet and nutrition\textsuperscript{26-28}, dental health\textsuperscript{29-30}, anti-retroviral therapy\textsuperscript{31}, and the training of professionals, interdisciplinarity, and the elderly\textsuperscript{32}.

In subsequent years, a great diversity in published themes can be perceived. The representative volume of articles (38\%) related to the stages of the process of implementation of the PNPS are in their majority related to the analysis of the PNPS in its essence\textsuperscript{33-35}, while other articles analyzed more specific policies related to mental health\textsuperscript{36-37}, smoking\textsuperscript{38}, accidents and violence\textsuperscript{39}, dealing with HIV/AIDS\textsuperscript{40-41}, among other analyses.

The PHPP bases its relation with the other public policies directly or indirectly related to the health sector that were obtained by the population\textsuperscript{42}. The categorization of the scientific publications according to the different specific policies allowed us to identify the greater occurrence of research about national policies of Diet & Nutrition, Primary Care, and Strategic and Participatory Management.

The themes of interest of the researchers about diet and nutrition permeate different aspects of study, spanning reflections about the policy itself\textsuperscript{43} and its dialogue with the National Policy of Dietary and Nutritional Security\textsuperscript{44}, its inclusion in school programs\textsuperscript{28,47,44} in relation to obesity\textsuperscript{45,47} and dental health\textsuperscript{46}, the encouragement of research\textsuperscript{26}, and even comparisons with other countries\textsuperscript{49} are some examples. The great demand for studies about diet and nutrition are justified, because in recent decades Brazilians experience social transformations that triggered a diminishing of poverty and a consequent change in dietary standards, resulting in a new scenario related to excess weight in the population and its consequences for health\textsuperscript{50}.

In Brazil the Primary Healthcare Units (UBS) were planned to be installed close to the people, and are effectively the point of access for the population’s healthcare. Research that targets access to primary health services\textsuperscript{51,52}, worker’s health\textsuperscript{53}, health of the elderly\textsuperscript{54-55}, men’s health\textsuperscript{56}, and mental health\textsuperscript{57} appear as the subject of the second greatest interest identified in the corresponding scientific production.

Next, themes related to the National Policy on Strategic and Participatory Management\textsuperscript{56} were the third most important among the different scientific publications. The Secretary of Strategic and Participatory Management coordinates the participatory model of SUS and activities of monitoring, auditing, and evaluations of SUS management\textsuperscript{58}. These publications contained themes about the balance of the implementation of the PNPS\textsuperscript{35}, and research about management at the municipal and state level\textsuperscript{57-60}. From the perspective of popular participation, work dealing with ombudsmen services\textsuperscript{61,62} and aspects of the contribution of the religious community\textsuperscript{63} were published, as well as research pertaining to traditional medicine based on medicinal plants\textsuperscript{64}.

A complementary categorization of the scientific articles, which was denominated as “other thematic axes,” is relevant to the present research. An analysis of the articles within this sub-classification allows us to determine that publications about dental health, health of the elderly, and men’s health were included as the three themes of greatest interest for the researchers.

The emphasis on the great number of published scientific research on dental health can be understood as related to historical circumstances. Two decades before the implementation of the PNPS, the first epidemiological survey of oral health was carried out, which signaled the precariousness of dental health in the Brazilian population. This initial study from 1986 provided a basis for the 1996 effort to measure if there had been alterations in the dental health profile of the population, which culminated in the large epidemiological survey Project SB Brazil, beginning in 2000 and ending in 2003\textsuperscript{65}. The findings of this project stimulated actions that resulted in bold investments in the implementation of the Smiling Brazil Program\textsuperscript{6}, which generated interest in the scientific community for research related to the investments and results for oral health in the Brazilian population\textsuperscript{29,39,66-68}. Another issue of great global relevance drew researchers to inquire about the research. We refer to the fact that in less than a decade Brazil would be the sixth country in the world in the number of elderly persons\textsuperscript{69}, and this issue has reinforced studies regarding this theme drawing from a broad perspective of inter-sectorial and transdisciplinary work\textsuperscript{52,54,55,58,70,71}. This issue placed the health of the elderly in second place among the themes of scientific production on the PNPS.

In third place, we have publications regarding men’s health. This is of interest because previously the health system had given priority assistance to children, women, and most recently the elderly. More recently, in 2009, the Ministry of Health created the National Policy of Holistic Care for Men’s
Health\(^{72}\), which triggered interest of researchers and consequently demanded recent publications about the promotion of men’s health\(^{56,73-76}\).

Regarding the place of origin of the publications related to the PNPS, the present research identified the state of São Paulo in particular with the greatest number of contributions, followed by the Federal District and Rio de Janeiro. This data partially corresponds to the ranking published by the Research Support Foundation of the State of São Paulo\(^{77}\), in which the state of São Paulo occupies first place with 51% of the scientific production of the country, followed by the contributions of Rio de Janeiro (18%), Minas Gerais (10.6%), Rio Grande do Sul (10.2%), Paraná (6.3%), Pernambuco (4%), Santa Catarina (3.5%), and the Federal District (3.3%)\(^{77}\). The present study identified that for research related to the PNPS, the Federal District climbs from eighth place in the general ranking to second place, a scenario that may be based on the proximity of researchers to the government ministries that are established in the Federal District itself.

The analysis of quality of publications based on the Qualis strata identified that the majority of publications appear in high quality journals (Qualis A2 in the Interdisciplinary area), and that the journal *Ciência & Saúde Coletiva* concentrated the greatest number of publications related to the PNPS.

With the present study, we conclude that in the ten years since the implementation of the PNPS, researchers have undertaken relevant and creative work. Scientometric analysis identified the National Policy of Diet and Nutrition and the theme Dental Health as the most studied subjects in the research, and clearly determined that less priority is given to the Policy of Emergency Attention, to Maternal-Infant Health, and to Adolescence. This research was restricted to the term “National Policy on Health Promotion,” and therefore other studies directed toward specific health policies might add further knowledge. These themes suggest future, more detailed investigations that allow us to clarify the causes of this disparity. We hope the findings of the scientific production related to the PNPS contribute to the generation, diffusion, and application of technical and scientific knowledge in the promotion of health in a way that facilitates the designing and reformulation of strategic actions for addressing health inequities in the coming decades.

**Collaborations**

MU Yamaguchi participated in the conceptualization and execution of the research, drafting, editing, and approval of the final version of the manuscript. MP Bernuci participated in the execution of the research, drafting, editing, and approval of the final version of the manuscript. GC Pavanelli carried out critical revision and approval of the final article submitted for publication.

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