

Social inequality, health policies and the training of physicians, nurses and dentists in Brazil and in Portugal

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Abstract *This study analyzes the production of scientific knowledge on Health Inequalities (HI) and its use in policies of education of dentists, nurses and physicians in Brazil and Portugal. Documents published between January 2000 and December 2001, in Portuguese, French, English and Spanish, were identified by means of a combination of a manual and intentional electronic database survey of the grey literature. Fifty-three documents were selected from a total of 1,652. The findings revealed that there is still little knowledge available to enable an assessment of policies for human resource training in healthcare in general and for those related to physicians, nurses and dentists in particular. In Brazil, few studies have thus far been made to understand how such training can contribute towards reducing these inequalities and, in the case of Portugal, no studies were found that established a direct relationship between human resource training and the future role that these could play in combating inequality. Despite a vast increase in scientific production, many lacunae still exist in this field. Knowledge production and its relationship with decision-making still seem to be separate processes in these two countries.*

Key words *Evidence-based policies, Social inequalities in health, Training, Human resources in health (HRH), Health policy*

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Introduction

Despite improvements in health determinants, social inequalities are still a major problem in public health¹⁻³. In many European countries, including Portugal, several health indicators, such as life expectancy and infant mortality, have shown improvements during recent decades; however, considerable challenges still exist in relation to geographic variations between social groups and minorities and the care required for an aging population^{4,5}. In the case of Brazil, although improvements have been seen during recent years, regional, geographic and social inequalities remain unchanged for mortality and morbidity rates⁶. In order to respond to these, the health systems need to make improvements in terms of effectiveness, efficiency and equity⁷.

In order to achieve equity of access and the use of health services, the health systems should be organized in such a way as to reduce barriers of access to the population as a whole⁸, and Human Resources in Health (HRH) are seen as one of the essential pillars to attain this objective^{9,10}.

There has been an increase in scientific publications in the area of social inequality, which brings to the fore the question of how they are used to form health policies and, in particular, for HRH training, employability and management, bearing in mind the contribution this has made to help strengthen the health system and to provide equal access to its services¹¹. Ultimately, this production can be used to meet the objectives outlined in the Universal Health Coverage adopted by member states of the United Nations in 2012¹² and supported by its agencies, principally by the World Health Organization (WHO)¹³.

Several authors note the need to undertake studies into the evolution of knowledge production, as well as ways to use this and the impact that this knowledge will have when integrated into policies^{14,15}. They also recognize the relevance of integrating knowledge production related to social inequalities and their different (social, economic, cultural) determinants in health policy investigations and formulation agendas.

Thus, it is important to understand if advances have been made in using knowledge produced for the definition of health policies¹⁶, bearing in mind the growing need for decisions made by management, clinicians and policy makers to be based on solid scientific knowledge. We acknowledge that the process of elaborating health policies takes into account research findings^{17,18}, in spite of differences existing between researchers

and decision-makers¹⁵, in terms of the theoretical reference frameworks used to approach these issues. In addition, there is an inherent complexity involved in the interaction between research and policy-making, due to the nature of scientific information, very often plentiful, which is diversified and inaccessible to policy-makers¹⁹.

It is recognized that there is a lack of comparative studies used to review literature about how knowledge production is applied¹⁵. Understanding how the formulation of health policies can benefit from comparisons made between countries, shows the relevance of conducting transnational studies about how research findings are applied.

In order to make an analysis of issues that are of interest both to Portugal and Brazil, in view of their cultural similarities and language, we used a conceptual framework that made it easier to analyze the findings obtained in both countries. This article presents the findings of the first stage of a study aimed at analyzing the barriers and the facilitators for the use of knowledge produced, according to researchers and policy makers, who are the potential users of such knowledge. Naturally, further studies will be needed to identify factors that maintain barriers to disseminating knowledge about social inequalities and the potential this has to be used to formulate HRH training policies, which aim to reduce same.

Thus, the aim of this study is to analyze the production of scientific knowledge about social inequalities in health and to discuss its relationship with training policies for physicians, nurses and dentists in Brazil and Portugal.

Methods

Between October 2012 and January 2013, in accordance with Torraco²⁰, we undertook an integrative survey of the literature on social inequalities in healthcare and the training of physicians, nurses and dentists for the period between January 2000 and December 2012. This was done using open access electronic data bases from *Pubmed/The National Library of Medicine/Washington*; the Pan-American Health Organization; the Virtual Health Library (BVS) via Bireme (consisting of the Latin American and Caribbean Literature - LILACS, Wholis, the WHO library database, The Cochrane Library, among others); the CAPES thesis database; the Network of HRH observatories in Brazil; the Brazilian Ministry of Health; the Portuguese Directorate-General of

Health (DGS); the Health Portal of Portugal and Google Scholar - and other sources of restricted access (e.g. unpublished books, documents).

We used key words such as “human resources,” “health,” “health professionals,” “physicians,” “nurses,” “dentists,” “training policy,” “intervention,” “inequality” and “iniquities,” and we researched these in combinations, separately, with an alteration to the ending of a word and in other languages, according to the specificity of each database. To analyze the documents, we divided the key words into two sections: *scientific production in social inequalities in health and HRH training* and *health training policies and interventions*.

For the first section, we sub-divided the documents as follows:

- *Context* – documents related to institutional issues (of the health system) and in the context of producing policies for graduate, post-graduate and ongoing training for professionals who are studying, and documents that explain the social context of producing knowledge and HRH training policies;

- *Empirical studies* – correspond to investigations that have been conducted with a presentation of their research findings. These include an extension of the problem, possible interventions and an assessment of training policies for professionals who are undertaking studies;

- *Policies*: documents published in the Official Government Gazette and reports identified as publications that support policies.

For the second section, we subdivided documents according to their type of approach to HRH training:

A – documents that only mention or show the problem of social inequality in health;

B – documents that mention or present and discuss the problem (adjusted, for example, for the context of the country, region, etc.);

C – documents that present solutions or strategies or interventions in terms of training;

D – documents that access HRH training policies;

When analyzing these documents, we considered four types of inequalities based on Thernborn²¹:

- Economic – including the distribution of income and material resources;

- Social or living conditions – including gender, race, education, geographic location, vulnerable populations (migrants, immigrants and indigenous peoples);

- Institutional or the organization of health systems – including inequality in the regional

distribution of HRH, the level of healthcare and access to and use of healthcare services;

- In comprehensive health – whenever authors present this in very broad terms, i.e., lacking sufficient information to enable a classification to be made, or when all types of inequalities mentioned above were included.

The inclusion criterion were: articles published between January 2000 and December 2012, in Portuguese, English, French and Spanish; on physicians, nurses and dentists; empirical and/or conceptual/theoretical works using the terms ‘inequality/social health determinants,’ or research where interventions in the area of the training of physicians, nurses and/or dentists, or health professionals in general, were covered by these policies. In view of the systemization of these studies we used the following concepts:

- Social inequalities in health – these are the systematic differences in the health situation of different population groups – *social inequalities in health conditions and in access to and use of healthcare services illustrate differential opportunities resulting from a person’s social position and which characterize situations of social injustice which represent iniquity*⁸.

- Iniquities – this refers to inequalities in health which, as well as being systematic and relevant, are avoidable, unjust and unnecessary²²; these include inequalities in living conditions and income distribution²³.

- Social determinants of health (SDH) – are the social condition in which people live and work or “the social characteristics within which their lives are lived”²⁴.

In summary, so many social inequalities in health such as SDH represent inequalities in social groups who have more or less advantages, which place the former at a disadvantage. Equity cannot be assessed without the inclusion of this element of comparison between groups who receive greater and fewer benefits²⁵. Social inequalities in health vary between different countries, in accordance with the way their health systems are organized. In this respect, the Commission for Social Determinants of Health (CSDH)²⁶ considers that health systems represent one of the determinants of social inequality in health conditions, and play a relevant role in reducing these; although Travassos and Castro⁸ state that *modifying the characteristics of the health system directly changes the social inequalities involved in access and use of such services, but are incapable in themselves of changing the social inequalities in health conditions that exist between different social groups*.

“Health policy” refers to decisions, plans and actions employed to achieve a specific objective in health within a certain society and define a vision for the future, which helps establish short and medium-term goals, establish priorities and the roles attributed to different actors²⁷. These include laws, regulations, decree-laws, but also technical documents in support of policies¹⁹ and programs.

This may be understood as *the formal side of health policy – the legal (the Federal Constitution, laws and executive actions), the institutional (Ministries, Secretariats and the Legislative), official statements (national health policy) and the actions of a group of individuals within society whose main task is to prepare laws and execute policies*²⁸.

This study does not consider cases of “informal policies,” namely citizen participation; and we understand the term “production of knowledge” as “the scientific production of knowledge”²⁹.

Results

Of the total of 1.652 documents found in the databases that we researched, fifty-three were selected. Of these, the majority (53%) are “contextual,” followed by “empirical” (21%) and “policy” (26%) documents.

As regards the type of document selected, in the case of Brazil, most of these (25%) are articles, followed by Master’s dissertations and doctoral thesis and policy documents. Documents related to legislation and technical reports supporting policies were found in equal numbers – 19%. In the case of Portugal, most of the documents relate to policy, that is, interventions by the Ministry of Health, the National Health Plan (PNS) and legislation (41%), followed by investigative reports (35%).

The institutions promoting most of the documents selected were universities (46%), followed by national organs (43%) and a minority was international organizations (11%). This distribution varies in both countries – in Brazil, most documents were connected to universities while in Portugal the great majority were promoted by national organs (Table 1).

Documents in Brazil focus mainly on social inequalities in health in broad terms (59%), while most (71%) in Portugal refer to inequalities in social conditions. The groups of documents selected, related to professionals, to the type of inequality, the classification of the document and the type of training approach used, are shown in Chart 1.

Table 1. Characteristics of the institution that promoted the study, type of document, according to country studied.

Promoting institution and type of document	Brazil				Portugal				Overall total
	Context	Empirical	Policy	Total	Context	Empirical	Policy	Total	
Institution that promoted the study/legislation									
National organization	5	-	7	12	3	1	7	11	23
International organization	2	-	-	2	3	1	-	4	6
University	13	9	-	22	2	-	-	2	24
Type of document									
Article	7	2	-	9	1	-	-	1	10
Master’s dissertation	4	3	-	7	-	-	-	-	7
Ministry of Health intervention	-	-	-	-	-	-	2	2	2
Legislation	-	-	3	3	-	-	3	3	6
Book	1	-	-	1	1	-	-	1	2
National Health Plan	-	-	-	-	-	-	2	2	2
Research report	1	-	-	1	4	2	-	6	7
Technical policy support report	-	-	4	4	-	-	-	-	4
Institutional technical report	3	-	-	3	2	-	-	2	5
Doctoral thesis	3	4	-	7	-	-	-	-	7
Course conclusion paper specialization	1	-	-	1	-	-	-	-	1
Total	20	9	7	36	8	2	7	17	53

Chart 1. Findings of the survey related to professional groups, type of inequality, classification of document and type of approach to training for health professionals.

Characteristics	Reference	Professional	Type of inequality	Classification of documents	Type of approach for training health professionals*
Knowledge produced	Cruz KT. 2004 ³⁰	physicians	Social/living conditions	Context	D
	Santana JP, Christófaro MAC., 2001 ³¹	nurses	Social/living conditions (education)	Context	C
	Baganha MI et al. 2002 ³²	physicians and nurses	Economic inequalities	Context	B
	Rigoli F, Dussault G. 2003 ³³	general	Comprehensive health inequalities	Context	C
	Negri B. 2002 ³⁴	physicians and nurses	Comprehensive health inequalities	Context	C
	Deluiz N. 2001 ³⁵	general	Comprehensive health inequalities	Context	A
	Fonseca CD et al. 2002 ³⁶	physicians and nurses	Comprehensive health inequalities	Context	D
	Pierantoni CR. 2000 ³⁷	all	Institutional/organization of health systems	Context	A
	Gijón-Sánchez M et al. 2010 ³⁸	general	Social/living conditions (migrants)	Context	C
	Ceccim RB, Pinto LF. 2007 ³⁹	all	Social/living conditions	Context	B
	International Organization for Migration (IOM), Gijón-Sánchez, MT. 2006 ⁴⁰	general	Social/living conditions (migrants)	Context	B
	International Organization for Migration (IOM). 2009 ⁴¹	general	Social/living conditions (migrants)	Context	C
	Portugal R et al. 2007 ⁴²	general	Social/living conditions (migrants)	Context	C
	Fernandes A, Pereira M (eds) Instituto Nacional de Saúde Doutor Ricardo Jorge. 2009 ⁴³	general	Social/living conditions (migrants)	Context	A
	WHO. 2011 ⁴⁴	general	Social/living conditions (migrants)	Context	A
	Modesto AA. 2010 ⁴⁵	dentists	Comprehensive health inequalities	Context	B
	Borde E et al. 2012 ⁴⁶	general	Comprehensive health inequalities	Context	A
	Canesqui AM. 2010 ⁴⁷	all	Comprehensive health inequalities	Context	A
	Casotti E. 2009 ⁴⁸	dentists	Comprehensive health inequalities	Context	B
	Conceição C. et al. 2001 ⁴⁹	all	Comprehensive health inequalities	Context	B
García ACP. 2010 ⁵⁰	general	Comprehensive health inequalities	Context	D	
Ferreira MAL, Moura AAG. 2006 ⁵¹	general	Comprehensive health inequalities	Context	B	
Almeida DCS. 2008 ⁵²	all	Comprehensive health inequalities	Context	B	
Feuerwerker LCM. 2001 ⁵³	physicians	Institutional/organization of health systems	Context	A	
Petta HL. 2011 ⁵⁴	physicians	Institutional/organization of health systems	Context	D	

it continues

Chart 1. continuation

Characteristics	Reference	Professional	Type of inequality	Classification of documents	Type of approach for training health professionals [†]
Knowledge produced	Haddad AE <i>et al.</i> 2010 ⁵⁵	all	Institutional/organization of health systems	Context	B
	Vieira ALS, Amâncio Filho A. 2006 ⁵⁶	all	Institutional/organization of health systems	Context	B
	Pires-Alves F <i>et al.</i> 2008 ⁵⁷	all	Institutional/organization of health systems	Context	D
	Ministry of Health – Directorate - General of Health - Portugal 2005 ⁵⁸	general	Social/living conditions (gender)	Empirical study	A
	Lampert JB. 2002 ⁵⁹	physicians	Institutional/organization of health systems	Empirical study	B
	Aguirre MBF. 2008 ⁶⁰	general	Comprehensive health inequalities	Empirical study	C
	Armani TB. 2006 ⁶¹	all	Comprehensive health inequalities	Empirical study	B
	Miyagima CH. 2009 ⁶²	general	Comprehensive health inequalities	Empirical study	A
	Marin MJS <i>et al.</i> 2010 ⁶³	all	Comprehensive health inequalities	Empirical study	B
	Dias HS. 2011 ⁶⁴	dentists	Comprehensive health inequalities	Empirical study	B
	Santos R. 2007 ⁶⁵	general	Comprehensive health inequalities	Empirical study	C
	WHO. 2010 ⁶⁶	nurses	Comprehensive health inequalities	Empirical study	A
	Zilbovicius C. 2007 ⁶⁷	dentists	Comprehensive health inequalities	Empirical study	B
Martins RJ <i>et al.</i> 2009 ⁶⁸	dentists	Institutional/organization of health systems	Empirical study	B	

it continues

1. Dimension of scientific production about social inequalities in health and HRH training

In view of the fact that the first National Health Plan (PNS) was implemented in Portugal in 2004, and that in 2006 Brazil created the Program of Qualification & Structuring for Health work Management and Education - PROGESUS, for the Unified Health System (SUS), we established two periods of analysis: 2000-2005 and 2006-2012.

We ascertained that out of thirty-nine documents found in the two countries, those that were relevant and published between 2000 and 2005 have a strong situation diagnosis component; are based only on a review of literature and

documental analysis³⁰⁻³⁴ two of which^{35,36} do not describe the methodology used. Only one study assessed the setting up of the Human Resources Information & Management System in Health SIG-RHS³⁷.

In the case of documents related to the period between 2006 and 2012, these also showed a predominance of theoretical studies or literature reviews³⁸⁻⁵⁶, (one of which did not define the methodology used⁵⁷). The tendency to conduct a situation diagnosis is maintained in the empirical studies for the first period^{58,59}; and, documents related to the following years⁶⁰⁻⁶⁸ do not show any implementation or assessment in the area of training policy.

Among the documents mentioned above, the most frequent focused on what is known as

Chart 1. continuation

Characteristics	Reference	Professional	Type of inequality	Classification of documents	Type of approach for training health professionals*
Policy documents	Ministry of Health – National Health Plan 2004 – 2010 ⁶⁹	all	Comprehensive health inequalities	Policy	--
	National Health Plan PNS – A Health Pact for Brazil. 2004 ⁷⁰	all	Comprehensive health inequalities	Policy	--
	Presidency of the Council of Ministers. II National Plan for Equality. 2003-2006. 2003 ⁷¹	general	Social/living conditions (gender)	Policy	--
	Presidency of the Council of Ministers. II National Plan Against Domestic Violence (2003-2006). 2003 ⁷²	general	Social/living conditions (gender)	Policy	--
	National Policy for the Permanent Education of Health Workers at the Ministry of Health. (PNEP-MS). Brazil. 2004 ⁷³	general	Comprehensive health inequalities	Policy	--
	Presidency of the Council of Ministers. IV National Plan Against Domestic Violence. (2011-2013). 2010 ⁷⁴	general	Social/living conditions (gender)	Policy	--
	National Health Promotion Policy. Brazil, Ministry of Health. 2006 ⁷⁵	general	Comprehensive health inequalities	Policy	--
	Ministry of Health – National Health Plan 2012-2016 ⁷⁶	all	Comprehensive health inequalities	Policy	--
	Portuguese Ministry of Health. 2012 ⁷⁷	general	Social/living conditions (gender)	Policy	--
	Portuguese Ministry of Health. 2007 ⁷⁸	general	Comprehensive health inequalities	Policy	--
	National policy for the permanent education for the social control of the Unified Health System – SUS. Ministry of Health, National Health Council – Brasília. 2006 ⁷⁹	physicians and nurses	Comprehensive health inequalities	Policy	--
	National Council for Health Secretariats. Work & Education Management in Health. 2011 ⁸⁰	all	Comprehensive health inequalities	Policy	--
	Resolutions issued by the National Health Council, Ministry of Health. National Health Council. Brasília: Published by the Ministry of Health. 2007 ⁸¹	all	Comprehensive health inequalities	Policy	--
	Final Report of the 14th National Health Conference: Everyone uses the SUS. SUS in Social Security – Public Policy, Patrimony of the Brazilian People. Ministry of Health. 2012 ⁸²	all	Comprehensive health inequalities	Policy	--

* type A documents – those which only mention or address the problem of social inequality in health; type B documents – those that mention or present and discuss the problem; type C documents – those that present solutions or strategies or interventions in terms of training; type D documents – those that assess HRH training policies.

“inequality in comprehensive health.” In most cases, the authors do not present a definition of the concept of inequality and when this does appear, the authors use the concept outlined by the WHO^{40,43,46}, or a specific reference⁴⁴, or do not even indicate a reference for the respective definition^{38,42}. The way that health professionals are studied varies greatly, but most do this in general terms^{33,35,38,40-44,46,50,51,58,60,62,65}, while others deal with all professionals included in this review^{37,39,47,49,52,55-57,61,63}. We found eleven documents where the professional categories had been studied separately (physicians, nurses and dentists)^{30,31,45,46,53,54,59,64,66-68} and a further three documents that approached problems involving physicians and nurses^{32,34,36}.

There is a predominance of type A documents – those which only mention or address the problem of social inequality in health (ten); and B – documents that mention or present and discuss the problem (sixteen). Fewer documents relate to type C – documents that present solutions or strategies or interventions in terms of training (eight); and in D – documents that assess HRH training policies (five). With these findings, we could see that very little information has been produced on the subject, which contains an evaluative dimension on HRH training policies in general, as well as those related to the professionals being investigated.

2. Scientific production on the articulation between HRH training and social inequalities in health

Aspects related, either directly or indirectly, to HRH training are the main focus of thirty of the thirty-seven documents. The remaining documents focus on social inequalities in health and at the same time address several questions related to training.

When we analyzed the way inequality is treated in the thirty documents whose main focus is related to the training of health professionals, we identified the following five levels: *residual* inequality, with only one mention of the word “inequality” and unrelated to the present subject matter of training issues^{31,35,47,67}; *indirect* inequality, in that the discussion about training of health professionals only indirectly involves inequality, without discussing its relationship with HRH training policies and interventions, or with SUS equity objectives SUS^{34,36,45,48,51,57,61,63-65,68} and the contribution this has made towards tackling regional inequalities, or as part of under-

standing the context^{30,39,49,59}, or even to register HRH training within the scope of the National Policy for Science, Technology & Innovation in Health – PNCTIS, which is also designed as “an instrument to reduce health inequality”; *latent* inequality (without integration in interventions) because inequalities are recognized as one of the greatest challenges in nursing, but which do not present any relationship with the question of training and its role, for example, in reinforcing the competencies of these professionals in dealing with vulnerable populations⁶⁶; *adjustment* to inequality involving the challenges shown, either in terms of HRH training related to existing national and regional inequalities⁵⁰, national social inequalities³², or problems of training specialist physicians and inequalities in regional distribution^{53,54}, or in terms of HRH policies related to inequalities in the country³⁷, or even the evolution of courses adapted to the National HRH Conferences and articulated with social movements in Brazil⁵²; *strategic* inequality appears in documents where training is presented as a strategy to achieve equity³³ or to reduce inequalities³⁸; or even as a strategy to reduce inequalities in HRH, by distributing courses^{55,56}.

The seven remaining documents^{40-44,46,58} focus mainly on inequalities among migrant populations, and are heterogenic in the way they deal with questions of training. This makes us believe there is an indirect relationship between problems of inequality and the training of “health technicians,” when emphasis is given to the importance of alerting them to these issues and that they could become “agents in the reduction of inequalities.”

3. Policies and interventions in HRH training and social inequality in health

The fourteen documents selected which are related to *Policies* include legal documents, Ministry of Health interventions, the National Health Plans and reports supporting policies. These documents refer only to unequal social conditions (six) and widespread inequalities (eight) and none of these define inequality according to the concept used. Fewer texts were found for the first period (2000-2005), which only consist of legal documents, in which National Health Plans, both in Portugal⁶⁹ and in Brazil⁷⁰, deal with physicians, nurses and dentists, which shows a more specific approach as regards the other Plans, where health professionals are examined in more general terms⁷¹⁻⁷³. With respect to inequalities, these are

dealt with mainly based on the typology of their unequal social conditions.

During the second period (2006-2012), we found a greater number (nine) and variety in the type of document available, since in addition to legal documents⁷⁴⁻⁷⁶ there are also the Ministry of Health interventions^{77,78}, as well as technical reports supporting this policy⁷⁹⁻⁸². With respect to the latter, related to Brazil, three mentioned physicians, nurses and dentists and one dealt specifically with physicians and nurses, where inequality was presented in broader terms. This trend persists, in that the only legal documents from Brazil⁷⁵ mention the same type of inequality.

The documents related to Portugal^{74,77,78} deal with these professionals in a general way, with the exception of the PNS⁷⁶, where health professionals are treated according to their professional category.

Discussion

The findings of this survey indicate a predominance of theoretical studies and review of the literature conclude that scientific evidence can only contribute towards the introduction of and support to issues included in the political agenda.

Research findings can contribute with at least three of the stages involved in preparing policies: defining the agenda, establishing policies and implementation¹⁴. This process includes preparing recommendations made by decision-makers, which requires evidence about the effectiveness of the interventions, as well as many other forms of evidence⁹. An essential component of this process involves assessing the types of available evidence about health system interventions⁸³.

Thus, through this study, we conclude that very little knowledge is produced that involves components to assess HRH training policies in general and considered as those related to the professionals being examined, with no scientific support available to enable policies to be based on evidence.

Identifying factors seen as essential to formulate policies for evidence-based social inequalities in health^{84,85} can occur in two ways: 1) politicians make use of scientific data on social inequalities in health so as to maintain this issue within the public agenda, since without data such problems remain invisible. Even so, scientific evidence should be presented in non-technical language; 2) policy-makers, scientists; health professionals, non-governmental organizations and the

public join forces to introduce social inequalities in health into the public agenda. In this case, the scientific community can provide relevant evidence to enable equity strategies to be adopted, leaving it up to the policy-makers and health professionals to guarantee that these strategies are implemented^{86,87}.

In both cases, the research findings should be presented to their target-groups in non-technical language. Likewise, in order to strengthen the findings of the research, it would be necessary to concentrate on the capacities of both the decision-makers and their teams to evaluate the applicability, and relevance of the results and quality of those studies^{88,89}.

In order to use research findings to formulate and implement policies, it would be necessary to conduct studies to identify and evaluate how interventions have reduced social inequality through professional training. This review understands that the scarcity of research reflects the lack of policies that recognize professional training as a strategy to reduce inequalities. Furthermore, we noted that, in spite of an increase in scientific production during the period examined, many lacunae still exist, and that the knowledge production process and its relationship with decision-making could still become separate procedures, in both countries. This is precisely a question we will aim to answer in the second stage of this work.

In Brazil, few studies exist that seek to understand, even indirectly, how HRH training helps to reduce social inequalities in health. This is an issue raised by Bosi and Paim⁹⁰, who discuss the main characteristics of professional training in the public health sector at undergraduate level; and Dias et al.⁹¹, who analyzed the history of a national policy for the reorientation of professional health training for the Unified Health System (SUS).

Over the last few years, new mechanisms have been established in Brazil that are designed to reduce inequalities not always related to scientific production, especially those found in the distribution of primary healthcare professionals, i.e., the Family Health Strategy. The study by Borde et al.⁴⁶ showed that until the 1990s, in spite of the predominance of theoretical or conceptual research about health determinants, this helped place Brazilian research at the center of the political and academic agenda in Latin America. Even so, *the scope and impact of social determinants in health and research into inequalities in health continue to be restricted to the academic community,*

with strong, though still insufficient implications in the formulation of policies and in health indicators⁴⁶.

From the point of view of health training, more recent studies about undergraduate courses in public health^{92,93} discuss the process of its creation and implementation, seeing this as an irreversible reality in the field of interdisciplinary health training in Brazil, though pressured by traditional models of disciplinary training.

No studies were found in Portugal that establish a direct relationship between HRH and how this could eventually help reduce the social inequalities that still exist in health⁹⁴. However, the organs that financed these investigations did not define this issue as a priority.

In the case of Europe, in 2013 the WHO⁹⁵ presented six overall objectives for Health 2020: reduce premature mortality rates by 2020, increase life expectancy, reduce health inequalities, improve the well-being of the European population, provide universal health coverage and establish national goals for all member states. In other words, the fight against social inequalities in health will continue to be one of the priorities within the area of the European Union (EU), including Portugal, although this objective is not related to more specific lines of action, including what role should be played by HRH and their training.

All countries need consolidated systems to examine ways to help improve the health and well-being of their populations⁹⁶. However, in Portugal there is still no *health investigation system that guarantees a balanced scientific understanding of the national reality*⁶⁹ (National Health Plan 2004-2010, 69, p.79). It was only in 2006 that the “National Agenda of Health Research Priorities” was implemented in Brazil, the most important action of which was to legitimize the National Policy for Science, Technology & Innovation in Health (PNCTIS) in the country, in line with the principles of the SUS. This profile differs from that which occurs in other countries where there is already a well-established culture for funding agencies to provide support to incorporate evidence-based findings into political decisions⁹⁷.

In recent years in Brazil, whenever a priority research agenda is being defined, part of this involves integrating the different actors into the process of knowledge production. Thus, in both the case of Brazil and Portugal, the findings of this study confirm the fragility of the relationship

that exists between science and other areas of society, namely the health sector¹⁶.

This study also shows that there is a low level of integration between knowledge produced that is focused on training health professionals and social inequalities in health. That is, analytical studies tend to treat social inequality in health in a residual, indirect and latent manner, which can mean that full use is not made of evidence of social inequalities and, as a result, that this issue is not included in the policy agenda. The fact that funding agencies in Brazil give low priority to research that involves training, might well explain why there is a predominance of studies about HRH management that are unrelated to training.

We noted that, in the last two years, this trend has started to change, when the main funding agencies include studies about training in their research agendas. Even so, such agendas are still isolated and fragmented.

The current research agenda of the Department of Science & Technology (DECIT) includes the following components: training, with greater emphasis on user satisfaction; ongoing education; labor market analysis; calculating the size of the health labor force; regulations; workers and management of national training programs such as the Brazil Network of the National Telehealth Program (Telessaúde), namely the Program to Support the Training of Medical Specialists in Strategic Areas (Pró-Residência), the National Program for the Reorientation of Professional Health Training (Pró-Saúde), and the Education Program for Health Work (Pet-Saude); as well as research into medical demographics, migration, retaining and keeping resident physicians in the country⁹⁸.

These initiatives can help ensure that their program priorities reflect the research work that has been developed in this area.

Final Considerations

In summary, as regards Portugal, the relationship between inequalities in health and the training of health professionals mainly involves issues related to immigrants, which may reflect the more general concerns shown by the EU in this matter⁴⁹.

In Brazil, the relationship between health professionals and social inequalities in health, in particular, the inequality in the distribution of these professionals is expressed through the work of professionals with vulnerable groups³⁹,

the insecurity and segmentation of working relationships between these professionals within the public health system⁹⁹ and the fragility of health work market regulations¹⁰⁰.

It is important to clarify that this study contains two limitations. The first relates to the nature of the data sources, specifically to the diversity of key word definitions found in the data banks. In line with other authors^{101,102}, we also understand that certain features are inherent to

studies which subjects are related to policies, with consequences on studies/documents selected and methodologies used. The second limitation concerns to the possible bias contained in published works¹⁰³, since it is possible that, in the case of both countries, that we did not manage to trace all research papers issued or produced by the respective Ministries of Health, in the event that these were not made available on their respective websites.

Collaborations

IMR Craveiro worked on the concept of the study, methodology, document research, data analysis and on all versions of this article, including the review of the final version; VA Hortale, contributed to the concept of the study, methodology, document research, data analysis, and on all versions of the article, including this final version; APC Oliveira was involved in document research, data analysis, and all versions of this article; G Dussault on the study concept and on all versions of this article, including the text of the final version.

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