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HEALTH RESEARCH IN NIGER: SITUATION ANALYSIS AND PERSPECTIVES

RECHERCHE EN SANTE AU NIGER : ANALYSE DE LA SITUATION ET PERSPECTIVES

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ABSTRACT:

Background: The main challenge facing the health system is to offer Nigerien population quality care in a spirit of equity and social justice. Research, along with other management activities, must be seen as an essential function in our health systems. The objectives of this study were to analyze the situation of health research by collecting all information related to the functioning of health research in Niger.

Methods: A literature review was conducted to list top-level institutions in charge of health research and research teams working in the areas of health, during the period 1950-2013. Only health researchers who produced articles, memories, theses or research report were approached by this survey in October-November 2013. Three approaches have been used: the interview with researchers' on-site, responses on a questionnaire by e-mail, phone calls and on site publications of research as PubMed.

Results: There are not enough publications of articles from health research in Niger. The number of publications varied from 50 in 1960 to 35 in 2000. 78 Health researchers were identified, 39 (50.7%) of them were principal authors. Most articles published were initiated by an institution in developed countries, as well as by the funders.

Conclusion: Health research activities in Niger need to improve in order to effectively contribute to the well-being and development of the country

RESUME:

Introduction: Le principal défi auquel le système de santé fait face est celui d'offrir à la population nigérienne, des prestations de soins de qualité dans un esprit d'équité et de justice sociale. Pour cela, la recherche, au même titre que d'autres activités de gestion, doit être considérée comme une fonction essentielle dans le renforcement du système de santé. L'objectif de cette étude était de présenter les résultats d'une analyse situationnelle de la recherche en santé au Niger.

Méthodes : Une revue de la littérature a été menée afin de dresser la liste des principales institutions et des équipes de recherche en charge de la recherche en santé entre 1950-2013. Trois approches ont été utilisées: l'entrevue directe avec les chercheurs, réponse à un questionnaire en ligne ou par téléphone et revue des publications de recherche sur PubMed.

Résultats : Il n'y a pas assez de publication d'articles issus de la recherche en santé. Le nombre varie de 50 dans les années 1960 à environ 35 au cours des années 2000. On a recensé environ 78 chercheurs en santé dont 39 premiers auteurs (50.7%). La plupart des articles publiés a été initié par une institution hors du Niger. Le financement était en majorité supporté par les partenaires extérieurs.

Conclusion : Les activités de recherche en santé au Niger doivent s'améliorer afin de contribuer efficacement au bien-être et au développement du pays.

Key-words:

Health Research; Situation; Niger.

Mots clés :

Recherche en santé ; situation ; Niger.

INTRODUCTION

Health research is a process of obtaining systematic knowledge and technologies that could be used to improve the health of individuals or specific population groups. The research contributes to the emergence of new knowledge and the development of better tools to exploit existing tools. It is a source of advancement in diagnosis and therapy for those who provide health benefits and also a source of factual data to enlighten the health policies and decisions makers [1]. Worldwide, health research is increasingly considered essential to reduce poverty and achieve the objectives of the Millennium development Goals [2]. It is perceived as an integral part of the overall process of socio-economic development. To ensure proper functioning of Health systems and improve the health of populations, research should be given an important place [2]. In Africa and particularly in Niger, it has been insufficiently led by national researchers. There is no appropriate framework which allows better sharing of knowledge between all relevant stakeholders about best practices and facilitates an effective and efficient use of the research data [3]. Fortunately, in recent years, taking into account research among the priorities of national policy has allowed a gradual transfer of competencies and has favored the appearance of thirty Nigeriens researchers between 2011 and 2013 [4-5] working more and more on issues adapted to the new challenges of development. The objective of this study was to describe the situation of health research by collecting all information related to the functioning of health research in Niger.

METHODOLOGY

Three main sources were used for data collection as summarized in Figure 1: (a) literature review conducted to establish the list of health research institutions and research teams working in the health fields, (b) internet research and scientific sites focused on research conducted during the period 1950-2013, (c) and an interview with health researchers who have produced articles, theses or reports. The questionnaire was sent through several channels: individual emailing list established during the review phase, group mails listings or institutions; and phone calls were also used as a reminder. Three students of the Institute of Public Health also managed the distribution and collection of a questionnaire filled out by institutions whose contacts were not available.

Several key words were used from wider areas to more specific words in health. The names of the principal authors were identified and / or institutions and names of journals were also used. Research languages were French and English. An analytical framework proposed by the World Health Organization [6] was used to define the orientation, type and theme of the article. The subject of paper was based on categorization "of public health functions" (Figure 1). Data was collected from October-November 2013 through a listing and the requested information were identified, the training in research, field research, conducted publications, and sources of funding. The analysis was done in Excel and proportions were determined to synthesize the information collected. All persons contacted were informed of the objectives and accepted to participate in the study.

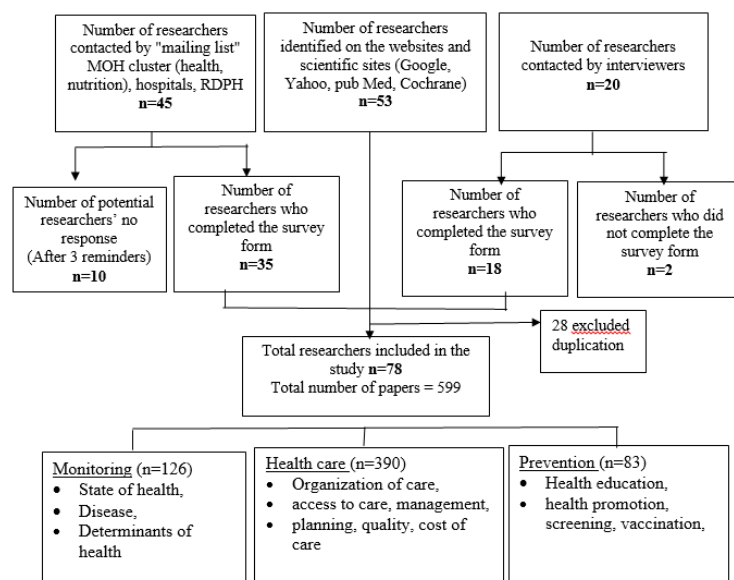


Figure 1: Flow chart for selection researchers and articles.

RESULTS

Evolution of articles published by year (figure 2) highlighted an increase of publication of articles in Niger in scientific journals from 1950 to 2009. There was a peak from 2000 to 2009 then since 2010, the number of articles published declined.

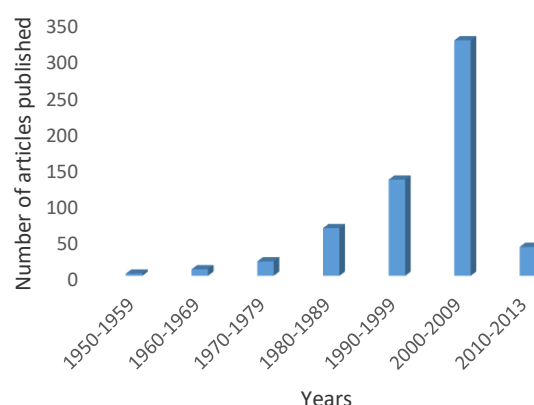


Figure 2: Articles published per year (from 1950 to 2013)

Articles published by areas and by journals

The different types of research were clinical research, operational research and epidemiological research. The main journals of publication, their impact factors and the number of publications are summarized in Table 1.

Table 1: Name of journal, impact factor and the number of publications.

Journals	Impact factor 2013	Publications
a) 10 major literature journals		
Bulletin de la Société de pathologie exotique (Bull Soc Pathol Exot)	0,53	91
Médecine tropicale: revue du Corps de santé colonial (Med Trop)	0,34	53

Transactions of the royal society of tropical medicine and Hygiene	1,63	40
Mali Medical	0	34
Gynecology and Obstetrics (arch Gynecol Obstet)	0,92	23
Lancet	39,207	22
Santé	0,276	20
The American journal of tropical medicine and hygiene (Am J Trop Med Hyg)	3,04	16
Revue d'Epidémiologie et de Santé Publique	0,15	15
MMWR. Morbidity and mortality weekly report	5,15	14

b) Journals with impact factor greater than 4

Lancet	39,207	22
PLoS Medicine	10,63	5
JAMA The Journal of the American Medical Association (J Am Med Assoc)	7,88	1
Clinical Infectious Diseases (Clin Infect Dis)	7,4	13
Radiology (Radiology)	6,39	2
PEDIATRICS (Pediatrics)	6,29	1
European Urology	6,06	1
Emerging Infectious Diseases (Emerg Infect Dis)	5,78	3
Social Cognitive and Affective Neuroscience (Soc Cognit Affect Neurosci)	5,56	1
MMWR. Morbidity and mortality weekly report	5,15	14
Journal of The Royal Society Interface (J R Soc Interface)	4,88	3
International Journal for Parasitology (J Parasito)	4,242	1
Bulletin of the World Health Organization	4,09	5

Articles published by institutions

The results of this study have shown that the research and training centers such as CERMES, the Niamey National hospital (HNN), the University Abdou Moumouni in Niamey (UAM), the maternity Issaka Gazobi (MIG) and the epicenter were institutions that have published the most articles. Many researches (94%) were commissioned by an institution outside of Niger. However we also found publications on the site of "the Laboratory of studies and research on social dynamics and local development (LASDEL) in Niamey".

Involvement of Nigerien researchers:

However, there was a lack of team research work in Niger (figure 3). For 29.27% of the published articles, the principal author is Nigerien. In 66.44% articles, there were three Nigerien researchers and in 3.36% of the articles, all authors were Nigerien. 30% was carried out in Niger without any involvement of local researchers and 87.25% did not receive accurate research training in public health, epidemiology or bio-statistics.

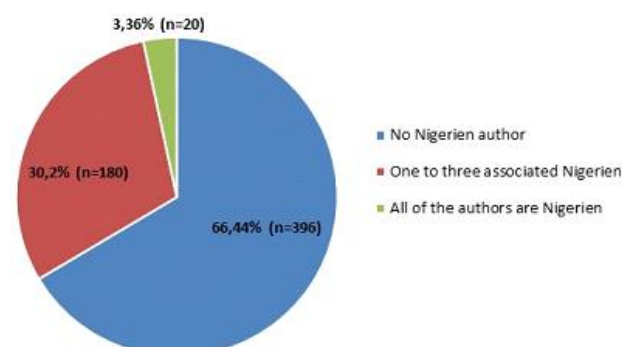


Figure 3: Nationality of authors (N=596).

Sources of research funding

The government contribution in research funding in Niger was 3.35%. Funding was provided in 47.07% of the cases by the technical and financial partners such as the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), United Nations population Fund (UNFPA), World food Program (WFP), the research Institute for development (IRD), the laboratory for studies and research on social dynamics and local development (LASDEL), the research centre for International development (IDRC), humanitarian aid and civil protection - European Commission (ECHO) and non-governmental organizations (NGOs). Some institutions of research and education, such as Abdou Moumouni University (UAM), Niamey National Hospital (HNN) and the Maternity Issaka Gazobi, also contributed through their own resources.

DISCUSSION

This study was conducted to help the Ministry of Health to set up a project to strengthen health research in Niger. Despite the identification and documentation efforts, we could not find exhaustively all publications during the period of the study.

The publication of articles in scientific journals in Niger shows a very slow evolution from 1950 to 2013, reaching a peak in the years 2000-2009, at 350 articles, linked probably to several events: the opening of a center for medical and health research (CERMES) and a growing number of teacher researchers from the the University Abdou Moumouni. Comparison of our results with other African countries showed that the number of publications in Niger was low. According to a study conducted from 2000 to 2010 in six African countries [7], scientific productions are in continuous evolution in time. Although it is difficult to identify a common explication of evolution in these countries, the main reasons were: creation of national departments such as a ministry of scientific research or an equivalent structure; the increased number of African graduates in the field of research; improvement of resource mobilization [7]. South Africa ranks first with a total production of 11297 in 2010. Egypt achieves significant growth in the number of publications ranging from 2986 in 2000 to 8894 in 2010 and is closely followed by Nigeria. Morocco, despite a drop in production between 2003 and 2006, achieved a growth ranging from 279 publications in 2000 to 863 in 2010. The Algerian production remains modest compared to the other countries studied. Its production reached only 224 publications in 2010. Between 1987 and 2001, the Cameroonian scientists published (as authors or co-authors) in average 108 articles per year in international journals. This represents 1.5% of internationally visible African scientific production and Cameroon is ranked 11th of African countries in terms of scientific publication [8]. Our study showed that the main area of research in Niger were infectious diseases. These studies were published in journals with high impact factor confirming the scientific character of the investigated theme. The important areas such as public health, reproductive health and prevention of diseases were under-represented.

The results showed that main studies focused on clinical research, operational research and, epidemiological research. Researchers engage very little in engineering and social sciences. Efforts massively cover the medical and agricultural sciences. Fundamental or applied research is rare because it requires huge

financial, human, organizational and structural means. "Operational" and "action" research is the most important area of the African researcher in the field of public health. On another study [9], the authors found that public health research is primarily devoted to health measures (18.0%) and 46.0% in the observation of health determinants. Only 7% of articles were devoted to prevention in health.

This analysis showed that there is good collaboration between Nigerien and foreign researchers. However, the implementation of the research activities depends too much on foreign institutions or countries. The majority of the research was commissioned by an institution outside of Niger. There is a lack of collaboration between researchers in Niger. Only 3.36% of local researchers obtained a publication in a scientific journal without the support of an external partner. Only 29.0 % of published articles have as principal author a Nigerien, although it should be noted that the principal investigator is listed at the end in some articles. Several study results exist but in the form of reports and have not been published in a scientific journal. Local institutions that have participated in many published articles in Niger are CERMES, Niamey National Hospital (HNN) and the University of Niamey. Health research is conducted disparately, insufficiently coordinated and systematic. On another level, the communication and collaboration between researchers and / or research institutions are insufficient.

Three main challenges impede research from playing its full role in Africa: (1) the existence of several research centers, more or less efficient, with disparate repositories; (2) lack of political commitment and lack of leadership in favor of a decision-making based on the evidence; (3) lack of thorough training in research methodology [3, 10]. These challenges and the prospect are to create a synergy of action in the field of research that's necessary to improve the knowledge of all health researchers and various institutions of research at the national level. This will allow the implementation of a platform for dialogue between researchers, policy makers and civil society in the formulation of priorities in health research.

To conduct research respecting conventional standards, the minimum is to have obtained a fairly solid knowledge and background in research methodology. A few days of training is not enough [11].

The government's contribution in research financing in Niger is very low (3.35%), less than 2% of the health budget, which is an obstacle to the research and publication is. These constraints exist not only in Niger, but also in many other countries. In sub-Saharan Africa, economic crisis reduce the budgets of research, already so minimized. Lacks of facilities, the socio-economic problems of researchers, the absence or insufficiency of scientific policy are other negative aspects in favor of health research. In the Maghreb countries, the inadequacy of financial resources, the compartmentalization of scientific activities and the lack of comprehensive research organization are serious handicaps [12]. Factors like lack of funding research and difficult access to documentation were pointed out by the Cameroonian researchers [8].

Regarding the question of the training in research, very few authors (27/78) reported having been trained in research methodology in epidemiological and statistical methods. It emerges in the health statistics yearbook of 2006 and 2013 of Niger [13-14] that the number of agents trained in research (all categories) had increased respectively from 34 to 105. Industrialized countries offered an increasing number of

scholarships and training to African students. However, there was a lack on follow up and evaluation of these actions. Improving the status of populations, economic growth requires more investment in research [7].

Research, as well as other management activities, should be regarded as an essential function in health systems. It's important to strengthen the coordination of health research to create synergy of action. Creating links between research and decision making is also essential by the creation of a platform for concerted action between researchers, policy makers and civil society in the formulation of priorities and research activities.

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