Original article

Human resources in the health sector of Portuguese-speaking African Countries: identical problems, cross-sectional solutions?*

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Abstract

This paper presents a situational analysis of the human resources in the health sector (HRH) of the five African countries where Portuguese is the official language, focusing on the quantitative aspects of the work force. The figures analyzed are: occupational and demographic composition, and distribution by level of care and by geographic zone. The paper discusses the constitution of HRH, relevant policies, and related expenditures. The methodology consisted in identifying relevant documentation about the subject. A form was used to collect data. The available data were consolidated into one single unit, so as to make comparisons possible. Each country revised and commented the data. Results showed that systems containing information on HRH were scarce, and the ratio of health professionals per inhabitant was low; HRH were distributed in a highly asymmetrical manner; the capacity to produce HRH was low and dependant on external assistance. HRH management was defective, centralized, and complied with the rules of public administration, which restricted its flexibility. The conclusion is that the problems are common and likely to be dealt with jointly through four major approaches: developing information systems, exchanging experiences that improve the performance of HRH, developing management capabilities, and strengthening the capacity to mobilize financial resources.

Keywords

human resources in the health sector; Portuguese-speaking African countries (PALOP); health planning and administration; education/qualification of health sector professionals

This paper intends to make a general and comparative assessment of the health sector workforce in the five Portuguese-speaking African Countries (PALOP), dealing mainly with its structure (numbers, occupational categories, and demographic structure), distribution (both geographic and by service level), qualification of workers, and relevant policies.

It is an acknowledged fact that human resources in the health sector (HRH) are important for the performance of health services systems (DUSSAULT & DUBOIS, 2003), for the quality of care, and for achieving the health-related

Millennium Development Goals (JLI, 2004, WHO, 2006), (MDG 4 – To reduce child mortality; MDG5 – To improve maternal health; MDG6 – To combat HIV/ Aids, malaria and other diseases) (UNITED NATIONS, 2008).

HRH is lacking at a global level. It is, however, scarcer in Sub-Saharan Africa, where the problem has achieved critical levels. According to the *2006 World Health Report*, there is a global deficit of about 4.3 million workers in the health sector, mainly physicians, nurses and midwives (WHO, 2006). According to the WHO, 36 out of the 57 countries facing this crisis are African. Three of the PALOP (Mozambique, Angola and Guinea Bissau) are among the most affected ones.

Countries have been developing plans and strategies for the development of HRH. However, they all face great challenges implementing such plans. Some of them are outdated and in need of a revision. On the other hand, it is necessary to assess their feasibility, as well as the operational, financial, political and technical capacity of the countries to execute them.

After WHO's alert, international financing agencies prioritized the strengthening of HRH in their agendas. For example, the European Commission adopted a *European Action Plan to Tackle the Shortage of Health Workers in Developing Countries*, 2007 – 2013 [EC 2006/870], which finances support to the enhancement of the national and regional capacity of the PALOP for the development of HRH (Project CE / PIR – PALOP), in a partnership with the WHO (Brazzaville and Geneva).

The first activity proposed for the collaboration was the revision of the HRH situation in the PALOP, as well as of existing policies, strategies, action plans and execution levels, so as to create a map and an inventory of available resources and of the current situation. This inventory served as a base for the identification of needs for intervention, so as to enhance the national and regional capacity to develop HRH.

This article presents the situational analysis of HRH in the PALOP, focusing on the more quantitative aspects of the workforce. The figures analyzed are: occupational (stock per professional category) and demographic (sex, age) compositions, and the distribution by level of care and by geographic zone. Additionally, it briefly discusses the qualification of HRH, relevant policies, and related expenditures.

Future studies will need to assess dimensions such as competencies by observing productivity, and the technical quality of the production of services and client orientation, such as the respect for human dignity, autonomy and confidentiality.

Materials and methods

the study assessed all five PALOP: Angola, Cape Verde, Guinea Bissau, Mozambique, and St. Thomas and Prince. It consisted in gathering all relevant documents (HRH plans, policies, strategies, investigation reports) through online research and through direct contact with the Ministries of Health, and WHO representatives in each of the countries, as well as in the headquarters in Geneva. The indicators research was also done by accessing the online databases of WHO, United Nations, and the World Bank.

Data were collected by using a form devised by the researchers, which was based on guides for running an analysis of the situation of human resources (BOSSERT et al., 2007), and of health information systems (HEALTH METRICS NETWORK, 2008). The form was structured so as to focus on the common characteristics of the five countries, of the human resources situation, and of the health information system. After being collected, the available data were consolidated for each country, according to the predefined single structure, so as to make comparisons possible. This enabled the identification of problems and information gaps that would allow us to consolidate comments and indications on major policies and informational needs for all five PALOP.

Each country was requested to revise and comment the presented data.

Results

HRH stock of workers

Stock refers to the total amount of workers that comprise the human resources in the health sector, and includes active and non-active qualified workers, active and non-active non-qualified workers, and informal care providers (Table 1).

It has been verified that none of the countries had sufficient information to entirely describe the group of workers, or the dynamics of its evolution. This occurred not only due to the inexistence of data in international databases, but also in the databases of the country itself. Typically, there was a scarcity of data concerning health workers in the private sector, and qualified workers that either did not work in the health sector, or that worked in the sector but did not provide clinical services.

Information on non-qualified health workers was also scarce, as well as on less numerous categories, such as laboratory technicians or pharmacists, among others. No consistent information was found on "informal" workers (traditional midwives, medication dealers and healers, for instance).

Table 1 – Constitution of the body of workers in human resources in the health sector

The body of workers in the health sector includes the following categories		
Active qualified workers	- Those who are employed	In the health sector: . who provide health services . who provide other services In another sector
	- Those who are willing to work, but have no job	
Non-active qualified workers	. Retired . Left the market (illness, not willing to work) or never entered it	
Non-qualified active workers	- Those who are employed	In the health sector: . who provide health services . who provide other services In another sector
	- Those who are willing to work, but have no job	
Non-qualified non-active workers	. Retired . Left the market (illness, not willing to work) or never entered it	
Informal providers	Individuals without official qualification who provide services outside formal institutions: traditional midwives, medication dealers, healers, etc.	

Source: DUSSAULT, G.; FRONTEIRA, I. (Coord). "Análise dos Recursos Humanos da Saúde (RHS) nos Países Africanos de Língua Oficial Portuguesa (Palop)". Projecto de Apoio ao Desenvolvimento dos Recursos Humanos da Saúde nos Palop. Geneva, 2009.

Table 2 - Number per category of humam resources in the health sector per 10 000 inhabitants in the five Palop, according to the most recent year available

Indicator	Angole	Cape Verde	Guinea Bissau	Mozambique	STP
Physicians/10000 inhabitants	0,008 (2004)	4,5 (2006)	0,98 (2007)	0,44 (2006)	5,0 (2004)
Nurses /10000 inhabitants	0,119 (2004)	9,3 (2006)	5,78 (2007)	2,20 (2006)	19 (2004) **
Midwives /10000 inhabitants	0,43 (1997)	ND	1,37 (2007)	ND	ND
Laboratory technicians/10000 inhabitants	0,0144 (2004)	ND	1,03 (2007)	0,43 (2006)	3 (2004)
Pharmacistis /10000 inhabitants	0,021 (1997)	<1* (2006)	0,15*** (2007)	0,41 (2006)	2 (2004)
Other qualified personnel /10000 inhabitants	0,002 (2004)	ND	ND	ND	31 (2004)
Nurses to physicians ratio	16,9 (2004)	2,0 (2006)	6,70 (2007)	5,0 (2006)	2,92 (2000)
Percentagem of foreing physicians	23,2 (2003)	16	ND	30,8 (2006)	ND
Ratio of non-qualified/qualified HRH	ND	ND	0,40 (2007)	0,47§	ND

Source: DUSSAULT, G.; FRONTEIRA, I. (Coord). Analisys of Human resources in health sector (HRH) of Portuguese-speaking African countries (Palop). Projectsfor the Support of Human Resources Developmentin the Health Sector of the Palop. Geneve, 2009..
LEGEND: ND – Data is not available. (*) Pharmacy personnel; (**) Includes midwives; (***) Pharmacy technicians; (§) HRH are considered qualified if they posses university-level or secondary education, and non-qualified when they possess primary or other types of education.

The data collected was also insufficient to characterize the evolution of the stock, i.e., of the inflow (new graduates, immigrants, return of professionals with short and long-term licenses, contracts), and outflow (temporary leaves, departures from the health sector, reforms, emigration, illness and death) (VUJICIC & ZURN, 2006; KOBER & VAN DAME, 2006; DUSSAULT & VUJICIC, 2008).

Available data concentrated on the main categories of workers with official qualifications. For instance, no country was able to provide data on technical medicine professionals, nursing professionals other than nurses or midwives.

Although an attempt was made to collect data from the most recent year in all countries, this year was different from country to country, and was different within each country depending on the indicator.

The ratio of health workers per inhabitant was low, a proof of the prevailing scarcity. Taking as a reference the 2.28 qualified health workers per 1000 inhabitants, or the 2.5 qualified workers per 1000 inhabitants, appointed by the WHO (2006) or by the Joint Learning Initiative (2004), respectively, as a minimum to ensure access to base services concerning the MDG, all five countries were well below these standards.

It is also important to highlight that, although data on the number of foreign physicians was only available for Angola, Cape Verde and Mozambique, these numbers were quite high, pointing towards a possible dependence on external help to meet the need for these professionals.

Data on the demographic structure of the workforce are important to forecast needs in terms of personnel and for general planning. For instance, a forecast is essential to provide information on the need to replace retiring individuals. These data were only found for Cape Verde and Mozambique, and referred to the ratio of physicians and nurses over age 50. In Mozambique figures achieved 16 and 22%, respectively. In Cape Verde, percentages were lower: 4.2% of physicians and .25% of nurses were over 50 years of age.

The men–women ratio is an important piece of information in analyses such as the geographic distribution of health workers (women tend to occupy urban areas). This information, however, was only available for Guinea-Bissau, where physicians were predominantly men, and midwives were mostly women.

As for the geographical distribution of HRH, major imbalances were found between the regions in countries where data was available (no data were found for St. Thomas and Prince). In 2002, for every physician in Uige, South Kwanza, there were 13 physicists in Luanda. The difference was even greater in Mozambique: in 2007, the province with the lowest density of physicians had one physician for every 23.5 physicians in the highest density province. This asymmetry was less blatant in Cape Verde and Guinea-Bissau, with a highest density vs. lowest density ratio of doctors per region of 8.1 and 6.37, respectively.

Regional differences in the density of nurses were more visible in Guinea (in 2007, for each nurse in Bolama there were around 12 in Bafata) and Angola (one nurse in Uige, South Kwanza, corresponded to 5.2 in Namibe).

Health workers qualification

The renovation and growth of the group of qualified health workers depend on the capacity of the educational system to produce graduate professionals with a certain number of competencies to deal with the priorities of the health area.

Data about the training of health workers (number of graduates, number of positions, among others) were the hardest to find in most of the countries. This can probably be assigned to the fact that it is a hybrid area where the Ministry of Health and the Ministry of Education merge, and where difficulties resulting from underdeveloped or inexistent information systems are becoming more and more visible.

They denote a limited capacity to train HRH, whether it is due to a lack of educational structures, or because the latter were unable to produce new classes on a yearly basis, which produced resources at non-annual intervals.

According to 2008 data, there were three Medical schools in Mozambique: in Maputo, in Beira, and in Nampula. The latter started its first course in 2007, with 60 students. Between 1975 and 2007 the medical school of Maputo qualified 817 physicians. According to estimates, around 100 physicians graduate every year from the universities of Mozambique (FERRINHO et al., 2008); 120 pharmacists and 26 medical technicians graduated in 2005 in that same country.

Angola, on the other hand, had approximately 18 health-related teaching institutions spread throughout the country, and both technical schools and medical universities were growing, in an attempt to decentralize education and attract health workers to remote locations.

In Guinea-Bissau there was a school of medical sciences that had graduated 10 physicians in 2006, and had 139 enrolled students in 2007. Both Cape Verde and St. Thomas and Prince entrusted other countries with the education of their physicians, an option with important implications concerning, for instance, the return of new graduates (DODANI & LAPORTE, 2005).

Cape Verde had three nursing colleges/schools, and 100 nurses graduated in 2005. In St. Thomas and Prince there was a nursing college/school, but it was not possible to obtain data on how many professionals had graduated there. In Guinea-Bissau 62 nurses graduated in 2006. In that same country, in 2008, 253 students had enrolled in the general nursing course, and 82 in the nursing graduate course. Neither case, however, presented the possibility of opening new positions (FRONTEIRA et al., 2007).

Expenditures on HRH and working conditions

The portion of the public health budget allocated for expenditures on personnel presented great variation, depending on the importance of other expenses (medication, infrastructure) and on the availability of other sources to finance these expenses. This ratio was close to the entirety of the public budget for health in Guinea-Bissau; it was 70% in Cape Verde, 45% in Mozambique, and 38% in Angola. It should be highlighted that in some countries, such as Guinea-Bissau, there was a strong dependence on external help to ensure the public health budget (FRONTEIRA et al., 2007, FERRINHO et al., 2008). Interpreting these data is hard without analyzing the total expenses and financial flows in the health area as a whole, as well as the process of elaboration of the national health accounts, which is not yet systematically done in the PALOP.

Financing is one of the most influential factors for the configuration of workforce in the health sector. This influence can be felt in the payment of salaries, and in other non-salary related indicators necessary for the efficiency of the health system. By the way, a deep discussion about this subject must include an analysis of non-salary related incentives, since this approach leads to the identification of financial incentives that are more efficient in achieving the goals concerning the workforce.

Little updated quantitative information is available about health conditions, such as salaries and other benefits (insurances, income) and subsidies that comprise remuneration as a whole (clothing, food, transportation, accommodation, prophylaxis concerning exposure to HIV and other risks), and about the existence of incentives to promote work in difficult zones. The available data (Angola, Cape Verde, Mozambique), showed important variations between the salaries of physicians and nurses where usually the former earned twice as much or even more than the latter. One study carried out in Mozambique and in Guinea-Bissau also proved that the expenses with the salaries of

health workers tend to increase, whereas internal and external financing tend to remains constant (TYRREL et al., 2010). In 2007, in Guinea-Bissau, the total public budget for health was equivalent to the total expenses with human resources in health (FRONTEIRA et al. , 2007).

It is important to have documentation on the labor practices in the public and private sectors, those concerning multiple jobs, the level of satisfaction with salaries, delays in salary and subsidy payment, career plans, as well as plans for promotion, continued education, and the availability of basic equipment to perform the job. This is important data in that they are related to factors that influence the performance of workers, both in terms of productivity and quality of service rendered.

HRH policies and management

It is impossible to assess the degree of implementation or the efficacy of policies without empirical studies. The same situation applies to the utilization of management tools. All the PALOP had – or were preparing – an HRH development plan. The degree of formalization of general and specific policies (compensation, education, geographic distribution) was variable. Management tools equally varied from country to country, with some serious gaps. For instance, only Guinea-Bissau and Mozambique had forecasts for the increase and hiring of health workers, whereas the medium-term fiscal scenario, on the other hand, was only known in Mozambique.

Mozambique had recently adopted a plan for the development of HRH for the 2008-2015 period that included forecasts for an increase in the workforce due to the needs related to the MDG, as well as an estimate of costs related to the implementation of the goals to be achieved. With this information the government of Mozambique could, on the one hand, assess the amount of expenses with HRH it could cover and, on the other hand, the remaining amount, which would represent the quota of financial partners committed to assisting the country, so as to strengthen the capacity of the health services system. To this end, in 2009 an international consultancy was made concerning the financing and expense forecast of the qualification, payment and incentives provided to health workers (TYRREL et al., 2010).

The quality of system performance depends on the performance of health workers, which, in turn, depends on an effective HRH management. Decisions in the five countries, namely those related to hiring, dismissal and transfers, tended to be made by the Ministry of Health or other Ministries, such as the Ministry of Public Administration,

and quite frequently in a centralized manner. This implied a deficit of flexibility, of attention to local needs and delays in the application, not to mention the corresponding waste of time and resources.

Common problems

Despite significant differences among the PALOP concerning social and demographic, epidemiological, administrative and economic indicators, the countries all share common problems. A significant list includes the workers group, education, geographic distribution, working and performance conditions, policies, management, and financing.

All countries have considerable deficits of qualified personnel in all categories. If we consider the health needs of the populations, the categories with greater deficit are physicians, pharmacists, technicians, and midwives. The number of nurses tends to increase, but it is still insufficient to provide coverage for the entire population.

There is an excessive dependence on foreign physicians, which creates potential problems related to sustaining access to services, in addition to problems associated with the cultural differences between physicians and patients.

The emigration of the most qualified professionals seems to be important in quantitative terms. However, in a scenario where professionals are already scarce, each loss to another country is relevant.

The losses of qualified workers resulting from the retirement of individuals over age 50, changes from clinical practice to administrative functions, departures to Non-Governmental Organizations or international agencies, to work in a different sector, or due to illness or early death are not properly documented, although they seem to negatively affect the number of HRH professionals.

Concerning the education of HRH, two countries (Cape Verde and St. Thomas and Prince) do not have the capacity to autonomously provide training to physicians. In the other countries, the current training is not enough to replace the departing physicians, or to maintain or increase their numbers in order to meet the increasing needs of a growing population. The current capacity to qualify more HRH is not completely known, whether in terms of infrastructure and faculty, or of attracting graduate pre-university students. There are no mechanisms to monitor and assess the quality of educational processes capable of accrediting courses. There are considerable variations in educational strategies. For example, Guinea-Bissau employs strategies based on problem resolution, with a strong community orientation,

in the training of physicians; other universities in different countries use more traditional strategies.

All countries experienced significant asymmetries concerning the availability of HRH in urban and rural areas, especially doctors and other specialists, which creates problems related to an unequal access to services. There are strategies to increase the number of qualified HRH in areas with unmet needs, but their efficacy has not yet been assessed.

The compensation of HRH in the public sector is usually defined outside the scope of the Ministry of Health, and seen as insufficient. In certain cases, such as that of Mozambique, subsidies and other advantages increase the total income, and may even double the base salary (TYRELL et al., 2010). There are cases of international partners that pay a salary supplement, which raises the issue of whether the measure is sustainable.

Threats to the health of HRH are high, in terms of exposure to biohazard due to inadequate protection. In addition to causing health problems they may turn individuals away from choosing professions in the health area, thus creating a shortage of availability for hiring.

Access to basic professional tools (medicines, equipment, information, etc.) is not guaranteed, which may have a negative impact on the motivation and performance of HRH.

There are few mechanisms for measuring and encouraging professional performance (productivity and quality) of individuals or teams, for instance, such as monitoring, continuous training, or financial and professional incentives.

All countries have either adopted a development plan for HRH (Mozambique, Cape Verde) or are at a preparation level (Angola, Guinea-Bissau, St. Thomas and Prince). These plans are not always supported by other actors essential for their deployment (by means of multisectoral coordination mechanisms), such as the Ministries of Education, Finance, or Public Administration.

No country has an HRH data system able to provide reliable and updated information on HRH as a whole (all categories, public / private, in training, active / non-active). There are no systems to forecast and monitor the evolution of HRH personnel.

Management capacity is low, due to a lack of training programs for managers (both at the strategic and operational levels) and of technicians (statistical, demographic and economic analysis) in the HRH field.

With the possible exception of Cape Verde and Angola,

the countries have no financial capacity to quickly expand their HRH, regardless of other challenges. The mobilization of internal and external funds will require considerable efforts to assess the current situation and accurately define needs.

The already available funds (EU, Global Fund, Gavi, Gates, for instance) are not raised in the most favorable way.

Health information systems are a key aspect of any health services system, and HRH information systems (HRHIS) are an intrinsic to them. HRHIS are essential for planning effectively, developing policies, assessing the labor market by means of the analysis of supply and demand, the evaluation and monitoring of the human resources managing activities. They are equally crucial for the management of the health system itself, as well as for research and development.

The legislation of Angola and Cape Verde did not provide a suitable structure for data generation in the health sector. The Ministries of Health of the five countries had little capacity in place in key areas of information sciences such as epidemiology, demography, statistics, information, and treatment and dissemination of information. There was no functional central administration unit in the Ministry of Health to conceive, develop and support the collection, management, analysis, dissemination and utilization of information on the health sector, including information on HRH – or the existing information was not suitable.

Actions undertaken towards qualifying staff working in the HRH information system at national or regional level were either non-existent or inadequate. There was a trend towards the inexistence of technical assistance to the development of software for HRH management, and deficiencies were also identified concerning the hardware itself. On the other hand, it became clear that even countries with an HRH database (albeit incipient) had poor update and maintenance routines, in most of the cases due to lack of personnel.

Conclusion

changes in the epidemiological scenario, with the emergence of new diseases and the aggravation of existing ones along with the commitment to the MDG, brought about new and greater pressure on the health services systems of African countries.In some countries weakened by (very) unstable economic and political situations, this pressure became even harsher, demanding (especially human) resources where there were already none.

Angola, Cape Verde, Guinea Bissau, Mozambique, and St. Thomas and Prince are quite different from each other.

The HRH situation in each of them, however, is not that different. On the one hand, all face poignant difficulties directly affect the performance of the health services system. On the other hand, the convergence of difficulties and problems opens up a possibility of joint intervention that may boost the (scarce) resources and capabilities of each country toward solving the HRH crisis. Sharing a common language is also an advantage.

The possibility of a collaboration between the PALOP, along with the cooperation with domestic and international technical agencies, may pave the road for the achievement of mutual benefits in areas such as (1) the construction of information systems capable of providing the organized bodies and decision-makers with the data and information they need in order to define priorities and effective strategies for the utilization of HRH; (2) the exchange of experiences and lessons learned in efforts to improve the competencies and the performance of HRH, and in the identification of policy options; (3) the development of the capacity to manage HRH by means of the qualification of managers and of the development of management tools; or (4) the strengthening of the capacity to mobilize financial resources.

Some examples of collaboration are already in progress, such as the Cape Verde Medical Center, whose purpose is to become a center for post-graduate medical training for Portuguese-speaking countries. Its educational activities will start in 2010.

Another possibility is the one suggested by Tyrell et al. (2010) concerning the adoption of common human resources financing tools for the health sector, which would decrease the dependence on external consultancies on this matter. At the same time, personnel could be trained for these activities. These common tools could also encompass other areas.

It is clear that it is crucial not only to have a plan for the development of human resources that provides guidelines for a strategic vision for the future, but also an interrelation between the ministry in charge of educational institutions and the Ministry of Health. Additionally, it is not only necessary to strengthen human resources in the health sector, but also, and inherently, to strengthen those who train them.

Right now, and in most of the countries, international agencies and donors play a central role in the health sector. Chances are that they will continue to be essential. Nevertheless, the countries must assess and consolidate their intervention not only in the strategic vision they have

for the health sector, but also for the vision they have for the HRH. It is necessary for each country to know exactly the weight of these institutions and the consequences of measures that may not have sustainability in the future.

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