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Organizational Anxiety: The Impact Of Information Overload

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ABSTRACT

The present work aims to reflect on the impact of information and its possible problems that affect the health of subjects in the context of organizations. When observing the current scenario of organizations, we analyze that information is capable of modifying the behavior of subjects in different ways. Therefore, at the same time that we must consider information as a resource for organizations, we must also understand its impacts on workers' health. The use of information causes numerous triggers in organizations, however, we highlight a behavior developed by workers that needs to be analyzed: informational anxiety. Given this scenario, it is essential that organizations use structured processes to minimize this type of behavior, and thus enable the full use of information as a resource. Therefore, the strategic use of the people management process becomes important, since this process already works directly with employees. In this way, the bibliographic survey on the topics, information as a resource that triggers anxiety and people management as a process, was used as a research method. After a bibliographic survey, a preliminary analysis of information as an organizational resource was carried out, as well as People Management as a process capable of minimizing the impact of information on workers' illness. As a result, the research presents initial

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guidelines aimed at activities in the people management process that can minimize the impact of information anxiety in the context of organizations.

Keywords: Information Anxiety; Worker's health; Organizations; People management

ABSTRACT

This document aims to reflect on the impact of information and its possible problems that affect the health of subjects in the context of organizations. By observing the current scenario of organizations, we analyze that information can modify the behavior of subjects in different ways. If we must consider information as a resource for organizations, we must also understand its impacts on the health of workers. The use of information causes numerous triggering factors in organizations; However, we highlight a behavior developed by workers that must be analyzed: information anxiety. Given this scenario, it is essential that organizations use structured processes to minimize this type of behavior and allow the full use of information as a resource. Therefore, the strategic use of the people management process is still important, as this process works directly with employees. A bibliographical survey on themes was used as a method of investigation, information as a triggering resource for anxiety and the management of people as a process. After a bibliographic survey, a preliminary analysis of information as an organizational resource was carried out, as well as the management of people as a process capable of minimizing the impact of information on illness on workers. As a result, the investigation presents initial guidelines for the activities of the people management process that can minimize the impact of information anxiety in the context of organizations.

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Keywords: Information anxiety; Occupational health; Organizations; Persona management

INTRODUCTION

The research aims to approach people management concepts as a strategic resource to maximize the health of individuals in organizations, thus focusing on informational anxiety. Therefore, this research addresses two of the main resources in organizations, people and information.

When observing the organizational dynamics, we find a small contingent of workers with an accumulation of activities and functions. These activities and functions are surrounded by information from the organizations' internal and external environments, and as a result they are impacted by an 'avalanche of information', which makes them develop information anxiety behaviors.

In this sense, the people management process stands out as a strategic process, since this process has the function of valuing and reducing the impact of variables surrounding workers. However, for People Management to actually achieve these results, it is necessary to consider information as a resource in this context, as this way information can be worked on in a structured way by the people management process.

The research seeks to relate all these factors, emphasizing the importance of organizational subjects as strategic resources for organizations, as well as the impact of information on their health. As a result, the integration of these components becomes fundamental for the construction of initial people management guidelines that aim to minimize the informational anxiety behavior developed by workers in organizations.

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METHODS

The research carried out a survey of information on the topics Anxiety in the context of Information, People Management, Occupational Health and Organizations through bibliographical research, using as a source books and articles that address the topics mentioned, thus making the research exploratory . *Gil* [1)] points out that bibliographical research is "...] developed based on already prepared material, consisting mainly of books and scientific articles. Although almost all studies require some type of work of this nature, there is research developed exclusively frombibliographical sources".

At the end of collecting information on the themes, they were analyzed and related. By relating the concepts and reflections found, from these concepts it was possible to construct new reflections regarding the importance of considering the behavior of information anxiety in the context of worker health, as well as minimum guidelines to support the people management process as a strategic tool in organizations.

Information in the context of the organization

Before understanding the information, it is necessary to understand the organization as a space responsible for bringing together resources and people to build products and/or provide services. Its relationships are dynamic and have countless relationships, in this sense, *Capra* [2] defines organization as "...] a totality integrated through different levels of relationships, its nature is dynamic and its structures are not rigid, but flexible and stable. It results from the interactions and interdependence of its parts."

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These relationships are responsible for generating a large amount of information. *Valentim* [3] defines information as "...] at the same time, object and phenomenon, since it can be highlighted and analyzed by itself and can also be part of a process". *Choo* [4] treats information as an intrinsic component in all activities carried out by the organization.

It is important to understand that information is a constantly changing resource, which changes and changes all the time. In this sense, when conceptualizing information in the organizational context, it becomes necessary to make delimitations between two other components that relate, interact and undergo transformations in the relationship with information: "data" and "knowledge". *Davenport* and *Prusak,* [5] *Valentim* [6] and *Pérez-Montoro* [7] conceptualized data, information and knowledge in the light of information management.

"Data" are simple observations about the state of the world, data recorded with the help of some support, usually with the help of some technology. "Information" is data endowed with relevance and purpose, with the data being understood (attribution of meaning) and contextualized by an organizational subject. Meanwhile, knowledge is something that resides in the human mind, built in the organizational subject's relationship with the environments in which they operate. *Davenport* and *Prusak* [5] systematize these concepts as shown in Table 1 .

Table 1 Data, information and knowledge

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Dados	Informação	Conhecimento
Simples observações sobre o estado do mundo	**Dados dotados de relevância e propósito**	**Informações valiosas da mente humana. Inclui reflexão, síntese, contexto**
• Facilmente estruturado; • Facilmente obtido por máquinas; • Frequentemente quantificado; • Facilmente transferível.	• Requer unidade de análise; • Exige consenso em relação ao significado; • Exige necessariamente a mediação humana.	• De difícil estruturação; • Difícil capturar em máquinas; • Frequentemente tácito; • De difícil transferência.

Source: Adapted from *Davenport* and *Prusak* [5] (p.18).

When observing the relationship between data, information and knowledge, it is possible to infer that this relationship is cyclical. In this process, the organizational subject relates to the three components all the time, from the data in a given context and, based on their own perception and understanding, the worker adds meaning and contextualizes them, a fact that results in the transformation of data into information . The worker appropriates this information through his cognitive processes and thus begins the construction of knowledge in his mind.

By externalizing and recording the knowledge built on some type of support within the organization, the worker transforms knowledge into data again, which, in turn, will be latent to be interpreted and contextualized by other subjects that make up the organization, and these in turn time, they will be able to generate new knowledge.

Information Anxiety, its beginning and impact on the health of organizational subjects

Understanding the psychological impact provided by information to workers becomes a starting point for possible constructions in the context of people

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management. Thus, *Wurman* [8] mentions that information was once considered one of the most sought-after commodities, just like rare wines, and that it is currently treated like a cat's claw vine, being good for keeping out of the world. This comparison demonstrates the current *status* of information in the current context of society. This situation occurs thanks to technologies, after all, through them it is possible to obtain unlimited access to any type of information at any time.

The main technology for the above is the internet, as it currently acts as a means of accessing this information. Through the internet, all subjects in society are leveled, after all, a teenager and a century-old institution now have the same information and consequently the same role and value. It is important to highlight that, before the internet, access to information was restricted, and unlike today, access and acquisition of information (through books) required a lot of financial capital. [8]

At the same time that the internet seems to be the solution to all problems regarding access to information, it makes access difficult, after all, the internet enhances the insertion of information and exponentially increases the volume of information, after all, we are currently consumers and producers of information on the internet.

Therefore, the big challenge is not access, but rather filtering this information, as the volume of information on the internet is increasingly growing and the filtering process becomes complex. Another important point is the use of filtered information, since the same filtered information can be correct and useful for one group of people and incorrect and worthless for another group.

When we combine the complexity provided by the internet in the context of organizations, workers and informational demands are generated all the time in an

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intense manner, after all, *Choo* [4] states that information within the organization is an intrinsic component in all organizations' activities. Author [4] also points out that, "...] Without an understanding of the organizational processes through which information is transformed into perception, knowledge and action, companies are not able to realize the importance of their information sources and technologies".

It is observed that workers inevitably receive an avalanche of information, without even needing to look for it. This informational avalanche occurs regardless of the organization's segment. *Evans* and *Wurster* [9] mention that the physical world is shaped by information and mention that a high-tech car has the same computing power as a good personal computer.

At the moment that we consider information as a fundamental and basic resource in the organizational context, especially for the subjects that compose it, we need to consider the consequences of this information overload, since its excess leads to frustration and illness for the subjects. A frequent behavior seen in individuals who make up organizations is information anxiety, a term coined by *Wurman* . [8]

Shedroff [10] mentions that information anxiety takes several forms, among which the author highlights, frustration due to the inability to "stay in the know", frustration with the quality of what is offered to the subject, guilt for not being more informed and, arrogance of "knowing before others". In this way, we consider these 4 forms presented that refer to information anxiety behavior, as can be seen in table 2 .

Chart 2 Information anxiety behavior

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Tipo de comportamento	Descrição
Frustação pela incapacidade de 'ficar por dentro'	A tentativa de 'ficar por dentro' de todos os dados que rodeiam a vida profissional dos sujeitos. Destaca-se que, o volume de dados que estão em torno da vida profissional de um sujeito é incalculável, afinal, esses dados são muitas vezes modificados e dão origem a outros incontáveis dados. Essa frustação permeia as atividades que esses sujeitos realizam nas organizações, uma vez que esses sujeitos atuam com dados internos e externos e muitas vezes não possuem a percepção destes dados nos processos que realizam nas organizações. Com isso os sujeitos sentem a necessidade de sempre estarem atentos e buscarem atualizações de dados/informações.
Frustrações diante da qualidade do que é oferecido ao sujeito	A insegurança quanto a qualidade dos dados/informações disponíveis e oferecidas aos sujeitos das organizações podem gerar sensações de baixa qualidade, tornando os sujeitos inseguros e disparando a necessidade de buscar cada vez mais dados/informações que os dê a sensação de qualidade.
Culpa de não estar mais informado	A frequente sensação de não estar informado o suficiente gera o sentimento de culpa por não estar informado o suficiente. Assim como as demais formas de ansiedade de informação, esta forma dispara a necessidade de busca e atualização de dados/informações.
Arrogância de 'saber antes dos outros'	O saber antes dos demais é um sentimento provocado pelas pressões das organizações e dos demais sujeitos que compõe estas organizações. Nesse sentido essas pressões fazem com que os sujeitos estejam sempre alerta quanto a dados/informações relacionados com as organizações.

Source: Prepared by the authors based on *Shedroff* . [10]

In short, it is necessary to understand that information anxiety has to do with the way we relate to the data around us. In this sense, it is important for organizations to equip themselves with strategies that enable greater awareness of this behavior. Among countless possibilities, we identified the people management process as a tool in this context.

People Management as a strategic process

People management acts in the mobilization, guidance, direction and administration of people as resources in the organizational environment, understanding the diversities of this management in different organizational contexts. [11] As a result of a world in constant change, workers began to be considered "collaborators". These employees are part of organizations and need to

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be flexible to ensure the organization's competitive advantage. For this reason, the people management process has become strategic for organizations.

This strategic context involves understanding people as a resource capable of providing a competitive advantage for the organization. In this sense, these resources act in the use of planning; analysis of coherence between policies and practices of organizational activities (internal alignment); integration of activity policies and practices with the business strategy (external alignment); proactive rather than reactive management and; decision-making on aspects of the employment relationship considering the highest level in the hierarchy. [12]

In line with *Sisson* & *Storey* , [12] *Gil* [13] highlights the importance of people management as a strategic process and mentions the activities that this process carries out:

- *Planning and evaluation:* Feeding the information system with data about the people who are part of the organization, allowing managers to anticipate the supply and demand for human resources available within the organizations;
- *Supply:* Ensures that employees are qualified for their positions - thus aligning employees with the organization's activities and strategies;
- *Compensation:* Develops compensation that is not limited to remuneration, but also develops and provides benefits and incentives;
- *Development:* Prepares employees through different types of training and other tools to be able to take on the challenges of organizations;
- *Labor relations:* Having policies in view of labor requirements;

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- *Opportunities:* Ensures equality to diversities through the construction of strategies;
- *Health and safety:* Promotes and maintains occupational hygiene and safety factors, as well as ensuring physical and mental health.

For strategic people management to develop, a holistic and systemic view of organizational processes is necessary. It is also necessary to reflect on the behavioral, structural and operational aspects to understand the motivations, needs and other aspects related to employees.

Managers, regardless of their area, need to implement the people management process in their routine, and with this, align the process with organizational strategic planning, thus outlining the objectives that must be achieved, and then align people so that they are partners on this journey. Human values must always be taken into consideration and working on employee motivation can provide quality in their activities.

When we consider people management (PM) as a structured process and not as an area/department, organizations regardless of their size become capable of implementing PM as a process.

Information anxiety in the context of worker health as a challenge in the people management process: an initial perspective

Identifying the triggers, as well as the possible variables capable of creating informational anxiety behavior, becomes essential to then consider this behavior and the relationship with organizations, as well as the possible relationship with worker health. In this sense, it is up to the people management process to develop

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strategies and activities with the aim of reducing workers' information anxiety behaviors.

The figure presents people management as a process in the context of organizations, as well as the data, information and knowledge inserted in the internal environment of an organization. In parallel, possible processes are presented that relate directly or indirectly to the organization, which are responsible for generating and consuming, even if unconsciously, an infinite amount of data, information and knowledge.

Fig. - Employees and data, information and knowledge of the organization's internal and external environment.

As the central actor in these processes and consequently the most impacted by the information are the employees. These subjects receive, analyze and use information from the internal context of organizations, both consciously and

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unconsciously. After all, it is information generated within organizational operations, and is considered implicit resources in all activities carried out within the organization.

As a result, employees, in addition to considering the data, information and knowledge contained in the internal environments of organizations, also need to be concerned with information that is in the external environment and that has an impact on organizations. When we consider organizations, in this scenario, it becomes more complex for employees, since they increasingly have a greater number of activities, after all, organizations are moving towards lean structures.

Employees are the central actors in the aforementioned context, after all, they are responsible for the entire process of prospecting, filtering, selecting, analyzing and using information and transforming information into knowledge. It is noteworthy that these activities are normally carried out by these subjects using information technology, however, they are tools for accessing information, increasing the volume and not allowing filters for data and information.

Therefore, the relationship of these employees with data, information and knowledge from the internal and external environments are more intense, thus causing information anxiety behavior. In view of the above, it is up to the organization to develop strategies aimed at reducing the impact of this behavior on employees.

Among the possible strategies used for this purpose, the implementation of activities in the people management process with a focus on issues of employee behavior in the face of information stands out. In this way, initial people

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management guidelines were created focused on the use of information that can be developed in organizations (table 3).

Table 3 The activities of the people management process and proposals for working with information aimed at reducing forms of anxiety

Gestão de pessoas	Proposta para o trabalho com a informação voltada para a redução das formas de ansiedade
Planejamento e avaliação	Construir estratégias voltadas para o melhor aproveitamento das pessoas quanto as informações. Nesse sentido cabe a organização realizar atividades capazes de demonstrar para as pessoas quais são as informações que podem proporcionar impacto na organização. Com isso espera-se que as pessoas consigam coletar informações corretas e perder menos tempo, tornando-se mais assertivas dentro da avalanche informacional que encontram-se.
Suprimento	Desenvolver atividades que proporcione aos colaboradores compartilharem boas práticas e ferramentas quanto ao uso da informação e com isso, diminuindo o retrabalho e possíveis *stress* no contexto informacional.
Compensação	Analisar as demandas e motivações das pessoas que compõe a organização é ponto inicial para construir compensações no âmbito da informação. Nesse sentido, integrar os processos informacionais dentro das compensações existentes visam construir um cultura voltada para a valorização da informação pela organização.
Desenvolvimento	Construir competências informacional nos colaboradores com enfoque na prospecção, monitoramento e uso. Essas competências são desenvolvidas por meio de treinamentos, participação de eventos entre outras ações voltadas para o tratamento da informação enquanto recurso. Sugere-se o desenvolvimento de uma escala sobre competência em informação dentro da organização, pois, os sujeitos que possuem maior competência informacional (estarão em uma escala maior), podem colaborar com os sujeitos que estão em uma escala menor competência. Com isso identifica-se os sujeitos e seus níveis quanto ao uso da informação.
Relações de trabalho	Desenvolver conjuntamente com os colaboradores as regras, diretrizes e demais aspectos que podem auxiliar os trabalhadres quanto a 'avalanche informacional'que estão expostos. Sugere-se que esse desenvolvimento tenha como base as questões jurídicas que envolvem aspectos da relação entre os colaboradores e as organizações.
Oportunidades	Com o desenvolvimento de escalas, tratadas no desenvolvimento, o colaborador passa compreender de maneira clara todas as oportunidades disponíveis na organização quanto ao uso da informação enquanto recurso. Nesse momento deve-se alinhar a integração das inúmeras diversidades existentes na organização e com isso possibilitar igualdade de tratamento.
Saúde e segurança	Compreender a dinâmica da informação enquanto recurso é importante para que a mesma possa ser analisada enquanto processo e recurso, bem como impacto que provocam nos colaboradores. Com isso é necessário o desenvolvimento de ações voltadas para conscientização e prevenção do impacto da informação enquanto recurso na vida do colaborador. Após isso cabe a organização desenvolver estratégias, ações e eventos com enfoque na saúde mental desses sujeitos, bem como a construção de estratégias que visem desconectar os colaboradores de dispositos digitais.

Source: Developed by the authors.

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When looking at the proposals for employees aimed at reducing forms of anxiety, it is possible to see the importance of incorporating them into the people management process as functions included in their activities. Therefore, to the same extent that information is valued, it begins to be worked on in an organized manner and with balanced intensity.

It is important to mention that when integrating the parameters proposed in table 3, it is expected to work with information as a resource and, therefore, enable its control, use and the effects it has on the worker's health. It is noteworthy that more and more organizations operate with a reduced number of people, thus accumulating a greater number of activities, which provides an 'informational avalanche'. Therefore, the importance of working with information in the context of reducing its impact on employee health is evident.

PARTIAL CONSIDERATIONS

When analyzing the dynamics of society in the face of the information explosion, it is observed that this leads to numerous information anxiety behaviors. When these situations are directed towards organizations, we observe that they act more intensely, since organizations are inserted in complex competitive processes.

In this sense, the People Management process can act as an important strategic component for organizations that aim to minimize the negative impacts of information on the health of their employees. With this, the people management process becomes support for reducing information anxiety.

The research is ongoing and sought to draw preliminary attention to the relationship between People Management and Occupational Health in the context of information anxiety in Organizations. Currently, research is in the process of

deepening the practical relationships between the themes covered in this work, especially in companies in segments where employees are submerged in information.

Thus, the next step of the research will be its application and analysis in the universe of Information Technology professionals and with this, validating the People Management guidelines outlined preliminarily in this research, aiming to minimize problems with information anxiety. It is recommended to analyze other professional universes, since it is possible that each of them causes information anxiety in other formats.

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Examining Telehealth in Latin America: An Analysis of Clinical Trials Registered on ClinicalTrials.gov

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ABSTRACT

The characteristics and trends of telehealth research in Latin America, especially clinical trials, have been little explored. The objective was to characterize the studies registered in clinicaltrials.gov about telehealth in Latin America. We performed an observational and descriptive study and evaluated the telehealth research in Latin America registered until 2018 in clinicaltrials.gov. The type of study, disease, country, initiative and type of institution were evaluated. We found 37 studies registered. The studies on telehealth were mainly clinical trials of parallel assignment type (81.1%). The most discussed diseases were: arterial hypertension (23.9%), diabetes (11.3%) and cardiovascular diseases (9.9%). The 64.9% of the works were local initiatives, with Brazil (29.3%) and Argentina (14.6%) being the countries with the highest number of investigations. In conclusion, there is a low number of Latin American studies registered in clinicaltrials.gov, the studies focused mainly on chronic diseases and were developed by local initiative. We need more clinical trials on telehealth in the Latin American context to help to consolidate its development.

Keywords: Telemedicine; Latin America; clinical trial; cohort studies

INTRODUCTION

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Telehealth has been defined as the use of medical information that is exchanged from one place to another through electronic communication - information and communication technologies (ICT) - with the aim of improving health care. [1] Telehealth is used as a strategy to increase accessibility to health services for the population residing in remote locations, improve the quality of care through training and decision-making support for professionals located in rural areas, and increase the efficiency of health services to optimize resources and reduce costs. [2] Telehealth is already public policy in Europe, the Americas, Asia and Africa. However, there are variations regarding its implementation and development. [2]

Doctors are unevenly distributed in practically all Latin American countries; This represents limited access to health services. [3] Telehealth can address such challenges, which is why it is expanding in Latin America, but its widespread and sustainable use has not yet been consolidated on a national and regional scale, due to legal, financial, technological, organizational and human factors. . [3] This highlights the need to strengthen the implementation and scalability of telehealth programs supported by solid recommendations based on scientific evidence that seek to ensure their sustainability.

Randomized controlled clinical trials (RCTs) are the standard for establishing intervention effectiveness in health care delivery, although they may be limited in their generalizability and unable to explain intervention adaptations or factors that may influence on results in different contexts and for different populations. [1] Telehealth research requires appropriate methodological designs [1, 4] that serve as a substrate for systematic reviews that support decisions in

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telehealth services. [5] These designs include cluster trials, pragmatic trials, adaptive trials, factorial designs, and stepping wedge designs. [1,4] On the other hand, observational research in telehealth is the most abundant, as in the rest of biomedical research, although observational studies present methodological limitations that generate biases and confusion factors, which means that causal inferences are not can be reliably extracted. [6]

The characteristics and trends of telehealth research in Latin America, especially controlled clinical trials, have been little studied. [7] Understanding the current situation of telehealth research is important for the construction of evidence-based health informatics, and consequently for decision making. Abstract information on controlled trials can be accessed from several international trial registries available online. [8] One of the most recognized international registries is clinicaltrials.gov, [9] which currently contains information from almost 270,000 studies in more than 200 countries. [8] The clinicaltrials.gov registry has primarily clinical trials, but also cohorts and expanded access (for drugs or biologics that do not qualify for enrollment in a clinical trial). [8] The objective of this study was to characterize the studies registered in clinicaltrials.gov on telehealth in Latin America.

METHODS

An observational and descriptive study was carried out through the open clinicaltrials.gov database. The search was carried out on February 15, 2019 and the data was extracted directly from the registry on that date. Studies on telehealth identified in clinicaltrials.gov [9] developed in the Latin American countries Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El

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Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay were included. , Peru, Dominican Republic, Uruguay, Venezuela.

The search was carried out with the descriptors of the Medical Subject Headings (MeSH) thesaurus of the US National Library of Medicine (telemedicine, remote consultation, telepathology, teleradiology, telerehabilitation, wireless technology), in addition to other free terms. The search strategy was: "telemedicine OR telemonitoring OR remote consultation OR telecardiology OR telesurgery OR mobil health OR mhealth OR telehealth OR ehealth OR teleradiology OR telepathology OR telerehabilitation OR medicine technology OR wireless technology". All keywords or probable free terms were used to improve the number of studies retrieved; However, the number of results obtained with said strategy did not increase. The advanced search engine was used, using the search strategy and the country of interest without any other limitations or filters. The search was repeated for each country until the list of Latin American countries was completed.

Interventions registered in multiple countries that respond to a single project were considered a single study. The type of study, the disease or topic addressed, the initiative (local or foreign) and the institution that generated the research were characterized. Additionally, the number of studies per year of registration, the number of studies per year of completion, and the type of institution or sector were described. The analysis was performed in STATA v.14 ® software, where descriptive measures were reported.

RESULTS

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37 studies on telehealth were identified. The first study was registered in 2008. From that year onwards there was a discontinuous registration of studies until 2018. In 2009 and 2010 no studies were registered. The maximum number of studies registered in a year was in 2015 with a total of 8 trials (22.2%), and the highest number of studies completed in the same period was eight, which corresponded to the year 2018. In addition, eight of the studies registered up to the time of the review had not yet been completed (Fig .).

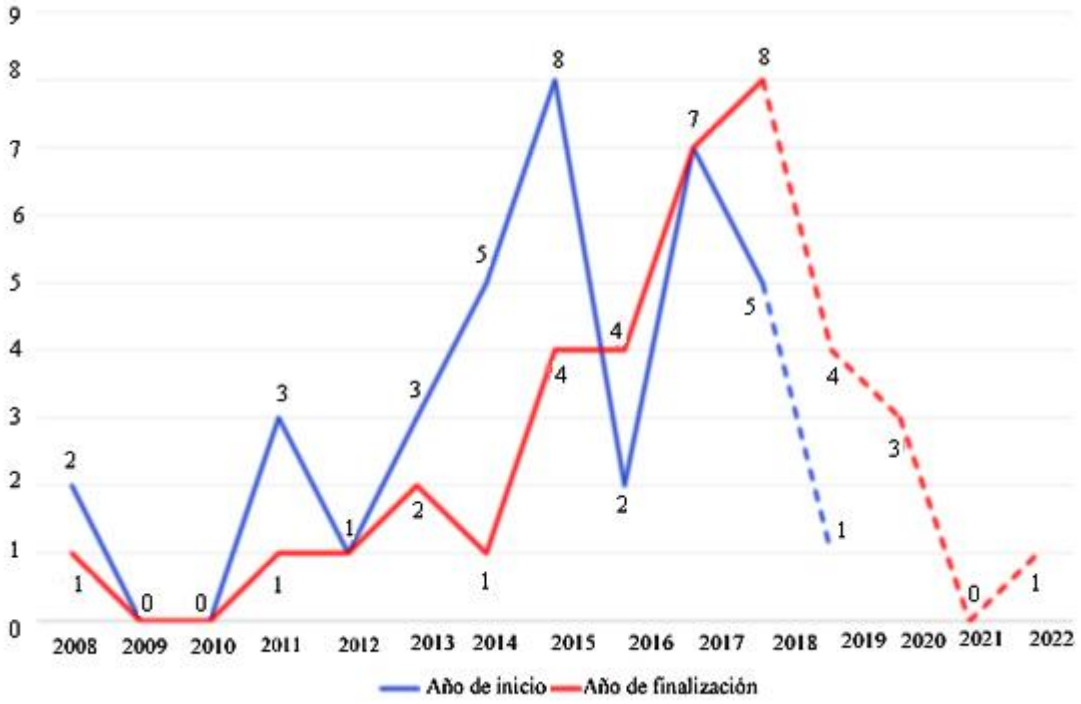

Fig. - Studies registered up to the time of review.

We found that 81.1% of the studies were parallel assignment trials. The main diseases studied were hypertension (23.9%), diabetes (11.3%) and cardiovascular diseases (9.9%). The countries that had the most registered studies were Brazil (29.3%) and Argentina (14.6%). The majority were carried out by local authors from the country where the study was carried out (64.9%). The main institutions

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that carried out research in the region were the University of Michigan, in the United States (18.9%), and the Hospital de Clínicas de Porto Alegre, in Brazil (10.8%), as shown in the table .

Table Characteristics of Latin American studies on telehealth registered in clinicaltrials.gov

Type of study (N= 37)	**No.**	**%**
- Intervention (Clinical trial)	3. 4	91.9
Parallel assignment	30	81.1
Single Group Assignment	3	8.1
Factor assignment	1	2.7
- Observational: Cohort	3	8.1
Disease or issue (N =71)*		
Hypertension	17	23.9
Diabetes	8	11.3
Cardiovascular diseases	7	9.9
Depression	5	7.0
Obesity	5	7.0
Cerebrovascular diseases	4	5.6
Chronic kidney diseases	4	5.6
Gestation	3	4.2
Others	25	35.2
Countries where the research was carried out (N= 40)**		
Brazil	12	29.3

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Type of study (N= 37)	No.	%
Argentina	6	14.6
Mexico	4	9.8
Peru	4	9.8
Bolivia	3	7.3
Chili	3	7.3
Colombia	3	7.3
Guatemala	2	4.9
Honduras	2	4.9
Dominican Republic	1	2.4
Uruguay	1	2.4
Initiative (N= 37)		
Local	24	64.9
International	13	35.1
Type of institution (N= 37)		
University	28	75.7
Private non-university institution	6	16.2
Public non-university institution	3	8.1
Institution (N= 37)		
University of Michigan (United States)	7	18.9
Porto Alegre Clinical Hospital (Brazil)	4	10.8
Cayetano Heredia Peruvian University (Peru)	3	8.1
Federal University of Bahia (Brazil)	2	5.4

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Type of study (N= 37)	No.	%
Federal University of Minas Gerais (Brazil)	2	5.4
Others	19	51.4

*Some projects evaluated more than one disease or topic.

**Some studies were conducted in more than one country (multinational studies).

Source: Data based on clinicaltrials.gov

The table shows the list of all studies identified and analyzed in the present study.

Table Studies on telehealth in Latin America registered in clinical trial.gov, in the period 2008-2018

Study name	Acronym	Start year	Ending year
Developing Accessible Telehealth Programs for Hypertensive Patients in Latin America	-	2011	2015
A Longitudinal Survey of Health in Bolivia		2014	2018
AniMovil mHealth Support for Depression Management in a Low-Income Country	AniMovi	2018	2019
Cardiac Telerehabilitation: Attendance and Effectiveness	-	2018	2018
Developing Accessible Telehealth Programs for Hypertensive Patients in Latin America	-	2011	2012
Developing Accessible mHealth Programs for Depression Management in Bolivia	-	2014	2015
Developing Accessible Telehealth Programs for	-	2014	2015

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Study name	Acronym	Start year	Ending year
Diabetes and Hypertension Management in Bolivia			
Effect of the Teleconsultation of Renal Nutrition on Renal Function and Glycemic Control in Patients With DKD	-	2017	2018
Effectiveness of a mHealth Intervention for the Treatment of Depression in People With Diabetes or Hypertension in Peru	LATIN-MHPeru	2017	2018
Effectiveness of a Psychoeducation and Support Protocol by Telephone in the Aid of Caregivers of Patients With Dementia	-	2017	2019
e-Health Education Program at Workplace	e-Health	2017	2018
Evaluation of the Effects of Teleconsultations on an Endocrinology Referral List	-	2015	2016
Home Blood Pressure SMS Telemonitoring in the Primary Care Setting		2018	2018
Hypertension Control Program in Argentina	HCPIA	2013	2016
Impact of Automated Calls on Pediatric Patient Attendance in Chile (Health Call)	-	2013	2016
Implementation of Foot Thermometry and SMS and Voice Messaging to Prevent Diabetic Foot	-	2015	2017

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Study name	Acronym	Start year	Ending year
Ulcer			
International Registry for Ambulatory Blood Pressure and Arterial Stiffness Telemonitoring	(VASOTENS)	2015	2017
Messages For Your Health: A Cancer Screening Prevention Study	-	2015	2017
mHealth Interventions to Improve Access and Coverage of Uninsured People With High Cardiovascular Risk in Argentina. (mHealth)	-	2014	2014
Mobile Health Intervention for Active Tuberculosis	-	2018	2020
Online Platform for Healthy Weight Loss	POEMS	2017	2018
Perinatal mHealth Intervention in Guatemala	-	2015	2020
Psychiatric Care Via Videoconferencing	-	2012	2015
Satellite-supplementation of Medical Outreach Clinics: a Feasibility Study	-	2013	2013
Scaling Up Science-based Mental Health Interventions in Latin America (DIADA)	DIADA	2018	2020
Technological Platforms and Telerehabilitation in Heart Surgery	-	2016	2016
Telemedicine Qualifying Transition Between Tertiary and Primary Health Care in Stable	Tele-DAC	2014	2017

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Study name	Acronym	Start year	Ending year
Coronary Artery Disease Patients			
Telemonitoring of Uncontrolled Hypertension	ERNESTINE	2016	2019
Telesonography Adaptation and Use to Improve the Standard of Patient Care Within a Dominican Community	-	2008	2008
Tele-spirometry in Primary Care - Randomized Clinical Trial Cluster: the Effectiveness of Telemedicine in Asthma	RESPIRANET-A	2015	2017
Tele-spirometry in Primary Care-Randomized Clinical Trial Cluster:Telemedicine in Chronic Obstructive Pulmonary Disease	RESPIRANET-C	2015	2017
TXT2HEART COLOMBIA: Evaluation of the Efficacy and Safety of Text Messages to Improve Adherence to Cardiovascular Medications in Secondary Prevention	TXT2HEART COLOMBIA	2017	2019
Use of Mobile Technology to Prevent Progression of Pre-hypertension in Latin American Urban Settings	-	2011	2013
Virtual Reality to Reduce Anxiety in Ambulatory Surgical Operations (VRSurg)	VRSurg	2008	2011
Virtual Rehabilitation and Conventional	-	2015	2017

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Study name	Acronym	Start year	Ending year
Therapeutic Exercises in the Treatment of Individuals Post Stroke			
Virtual Rehabilitation and PNF in the Recovery of the Motor Function Post Stroke	-	2017	2018

Source: Data based on clinicaltrials.gov.

DISCUSSION

The number of studies carried out in Latin American countries is considerably lower than that found in developed countries, as demonstrated by a previous study on France, in which a total of 39 studies were found in a shorter period of years. [10] This finding would confirm the limited contribution of ICT to well-being in developing countries, such as those in Latin America, [11] which would be explained by the late start of the use of ICT in these countries or by their low scientific production in telemedicine. [7]

Most of the studies carried out were of the intervention type (trials). Of these trials, the largest number were parallel assignment; There was only one factorial assignment and none of special design (cluster trials, pragmatic trials, adaptive trials, and stepping wedge trials). This would be explained by the categorization of the "intervention model" (type of intervention) that clinicaltrial.gov restricts in its registry, as it considers single group assignment, parallel assignment, cross-type assignment, and factorial assignment as the only options. . [8] However, it is possible that these studies are not being prepared with a focus on the implementation of telehealth projects, which require special designs. On the other hand, it is observed

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that there is no continuous growth of studies over the years, in contrast to the growth of public policies on telehealth in Latin America, [2,12] which would mean that telehealth policies and programs are being generated based on on international experiences rather than on their own.

Most studies address chronic diseases, probably because there is a current trend of population aging, which will eventually result in a future increase in the occurrence of chronic diseases and comorbidities, [13] and will substantially increase health care costs. and resource utilization. [14] In this context, telemedicine or telehealth would be tested as a viable option to improve care for these diseases, due to the advantages it offers (improved accessibility, quality and efficiency of health services). [13] Research into acute clinical conditions (emergencies and intensive care) is a pending area to explore, although several studies outside of Latin America are demonstrating success; that is, low mortality rates compared to those of the traditional care model. [15,16]

It is striking that Mexico, Costa Rica and Panama do not lead in number of studies despite the fact that these countries were the first to adopt telehealth as a national project (before 2002), compared to other countries that show a better positioning. such as Brazil, Argentina and Peru, which did so after 2007. [17] It is possible that once established as national projects, there was no interest in demonstrating their efficacy, effectiveness, efficiency, safety or in seeking innovations validated through ECCA. Another explanation is that there are not enough resources to carry out studies with this type of design given the complexity, time and cost that they require. [18]

This is the first study that addresses telehealth research in Latin America through a study registry specialized in controlled trials. A limitation of the study is the possible underestimation of any study not registered on the clinicaltrial.gov platform; However, an important approach to telehealth research in Latin America is shown. We recommend encouraging telehealth research through ECCA in the Latin American region, as well as replicating this study in other international registries to corroborate our findings. Likewise, we consider it pertinent to carry out bibliometric studies to complement the analysis of Latin American scientific production.

In conclusion, there is a need to strengthen telehealth programs with the support of solid recommendations based on scientific evidence that seek to guarantee their sustainability. We found a low number of Latin American studies registered in clinicaltrials.gov, as well as the absence of continued growth. Most studies were parallel assignment controlled trials. These studies focused mainly on chronic diseases and were developed by local initiative. Additional randomized controlled clinical trials are required to evaluate the efficacy, effectiveness, efficiency and safety of telehealth in the Latin American context, and thus help consolidate its development.

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The Vision Of Librarians On Hospital Libraries In Portugal

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ABSTRACT

The objective of this work was to identify the professional perspective of librarians and hospital libraries in Portugal and their future projection. This is a descriptive study, through non-experimental research, based on a qualitative analysis method. For this study, a sample of 13 professionals was used who, in some way, have a connection/knowledge with the work carried out in hospital libraries. The aim was to have a sample that covered the country from north to south so that the results could be representative of the Portuguese reality. The results indicate that professionals working in health libraries in Portugal consider that there is no specific professional training for this field with very particular characteristics compared to other library realities. Furthermore, they believe that health professionals who work in libraries should be integrated into the clinical and research teams of their institutions. On the other hand, given the importance of evidence-based medicine today, it is necessary to develop new roles that librarians must assume. They also consider that it is up to the health librarian to take on the challenges, invest in the continuous updating and acquisition of skills, strengthen their role in the institutions in which they are inserted, and thus justify the added value of the profession.

Keywords: Hospital libraries; medical libraries; library services; librarians; Portugal

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INTRODUCTION

A medical library in a hospital is a necessity. Like the doctor, it must always be prepared to respond to its users' emergencies. The library should be a quiet place in the midst of intense activity, where health professionals can enjoy a few moments of tranquility and adequate working conditions, in which the library and its professionals have a close relationship with the environment. It must also be a work and research environment where practice and theory are defined in a close relationship. This relationship has added value for the doctor beyond the estimation itself, since currently the acquisition of knowledge occurs mainly from printed and digital resources and not through experimental learning. [1]

Thus, a hospital library plays a fundamental role in locating the external information necessary for its healthcare, teaching and research activities. [2)] The library facilitates access to retrospective information available in databases and other resources, but it also offers, or can offer, prospective services (information alert, training to make better use of available resources, etc.). [3]

However, according to *McKeown* [4)] and *Muñoz* et al., [3)] there is evidence about the value and impact of these services in health units, but professionals from these institutions do not always go to the library in search of specialized support. According to *Lawton* , [5)] there is a perception that, for health professionals, the role of hospital librarians is unclear and that evidence needs to be created to demonstrate the value and impact of these professionals in service delivery. clinical.

The problem of the growing production of scientific publications is a reality. The library's goal has been to help users learn about what is being published in their

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area of interest and reduce the volume of research and reading. More than storing and preserving information, it is important to disseminate it, provide knowledge to the user and make them aware of the right to be informed. One way to solve the problem is the creation of more specialized libraries, capable of managing a delimited field and of collecting, archiving and distributing this same literature. In addition, health institutions must provide the necessary resources for hospital libraries to manage information, ensure maximum quality in the services they provide, and contribute to satisfying the needs of their users. [6] Therefore, rapid changes in the delivery of patient care, support for hospital services and the consolidation of greater health care should be part of the concerns of the health care librarian. [7]

The maintenance of many hospital libraries, in a context of uncertainty, can only be achieved if librarians provide specific skills that promote best practices and increase confidence in the services they provide to users. *Sievert* et al [8] conducted research that demonstrated the value of utilizing library services for health care providers in Midwestern communities. *Zipperer & Sykes* [9] described the benefits of librarians' role as collaborative partners in patient safety.

A specialized health library should support patient and community health care through evidence-based knowledge. Its resources and services must support clinical decision making, contribution to public health programs, education and training, health technology assessment, research, management and administration. [10]

There is no consensus among the different authors about the role of the librarian as a professional in the hospital library. There are opinions ranging from the role of

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reference librarian to the integration of the librarian as a member of the medical team. [11] However, the consensus is unanimous when it is stated that the activity of this professional goes far beyond the functions of a mere researcher. [12, 13]

Knowing the hospital library user in depth is crucial when it comes to offering useful and quality services. *Antunes* [14] and *Marshall* [15] conclude that health professionals are in a permanent research process. At the same time, clinical practice also implies a constant updating of knowledge.

The hospital library remains a little-known model in Portugal, despite its importance for the functioning of health institutions and for research in the field of health sciences. This is an area that, until now, has been little studied at the national level and is only specifically known by health professionals linked to teaching and research. Many libraries have become true educational centers with immediate availability of access to knowledge. Digital resources are revolutionizing the field of information sciences and allow health professionals to update; They provide information to students and health technicians who support scientific research and to those responsible for the institutions in decision-making; They stand in solidarity with doctors in the new challenge of caring for an increasingly aware and informed population, but who, at the same time, have no guarantee of the credibility of the information they can access so easily. It is important to deepen our knowledge of these libraries and the role they play, as well as understand the reasons that make their effectiveness unfeasible in the institutions that host them. That is why it seems obvious to delve deeper into the opinion of librarians who know this reality and who, despite their weaknesses, are working to improve the quality of service in this type of library.

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In this study, the following questions are raised: a) what are the perceptions of hospital library professionals in Portugal; b) what competencies are perceived as necessary for the integration of the hospital librarian into multidisciplinary clinical teams; and c) what is the vision that professionals have about the future of the hospital library. The objective of this work was to identify the professional perspective of librarians and hospital libraries in Portugal and their future projection.

METHODS

13 people participated in the online survey, all of them women between 38 and 63 years old with an average age of 47.2 years. At the level of academic training, 6 have degrees (46.2%), 5 have diplomas (38.46%) and 2 have technical professional training (15.38%) in different specialties. Gender was not considered *a priori* ; We simply sought to find a group of professionals with knowledge of health libraries. Regarding the professional experience of the participants, 6 hold a director or coordinator position, 2 are senior technicians (15.4%), 4 are technicians (30.7%) and one of them heads a professional association. Regarding years of service, the average is 20.2; 8 are over 20 years old (61.5%); and 5 less than 20 (38.5%). Regarding years of service in the hospital library, the average is 11.3: 7 with more than 15 years of service (53.8%); and 5 with less than 10 (38.4%). The geographical distribution of the sample covers professionals from all over the country.

Procedures

The study involved conducting semi-structured interviews with health information professionals, and had the objectives: a) determine the competencies perceived as

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necessary by the hospital librarian to integrate into multidisciplinary clinical teams; b) determine the vision that hospital library professionals have of their mission and tasks; c) know the opinion that health information professionals have about evidence-based medicine; d) know what the opinion of professionals is about the future of hospital libraries.

Data compilation was carried out between March and October 2017. Each professional who participated in the interview was contacted individually. Although the interview included sociodemographic data, anonymity, confidentiality, and participation were guaranteed voluntarily. The interview was constructed from an extensive review of the literature, [4,6] consultations with experts and pilot tests. It should be noted that these consultations led to a structural reformulation of the interview, but not the content. An opinion was requested for the conduct of the study from the Ethics Committee of the Local Health Unit of Guarda, and a favorable opinion was obtained. This Local Health Unit, located in central Portugal, is made up of two hospitals and more than a dozen primary health care centers.

Instrument

As a research technique, an interview was constructed to be applied to a group of 13 professionals who work in libraries and who, in some way, have a connection/knowledge with the work carried out in hospital libraries. It was also sought to have a sample that geographically covered the entire country so that the results could be representative of the Portuguese reality. The instrument created to carry out the study was an interview designed with the objective of obtaining responses from professionals who manage and develop their professional activity

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in Portuguese health sciences libraries or through practice in professional associations of librarians in Portugal.

The semi-structured interview consisted of answering seven questions, both open and closed. In the first part, sociodemographic questions were included, such as age, academic training, job position, and years of service. In the second part, the seven questions indicated below were asked:

1. How long have you been working as a professional in a hospital library?
2. Do you consider that the current training of hospital librarians in Portugal is adequate for the needs of users and institutions?
3. Do you consider the integration of the hospital librarian as an active member of the multidisciplinary clinical team pertinent?
4. Do you consider that the practice of evidence-based medicine is a reality in Portuguese hospitals?
5. How do you see the role of the hospital librarian in research teams?
6. The acquisition of material goods is a problem inherent to practically all hospital libraries. What are your suggestions to solve this problem?
7. Do you think that the hospital library scenario has changed in the last 10 years?

Data analysis

Qualitative data were analyzed. The coding process sought to identify the relationships of the interviewees with the themes. For this, a descriptive content analysis was carried out, which for *Yin* [16] "has the purpose of listing or describing the characteristics of the phenomena." In the first phase, the interviews were transcribed and processed in *NVivo* (QSR *NVivo* Version 7.0), then an exploratory

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reading of all the interviews was done, and finally all the data were analyzed, coded and categorized.

RESULTS AND DISCUSSION

The content analysis of the 13 interviews revealed a series of recurring themes or categories. In total, the number of sources of information was 13 (each interviewee corresponds to one source) and the number of dimensions or categories of content analysis were 3 (table), with a total of 64 references ($N = 64$):

1. Perception of the work of the hospital librarian as a professional.
2. Valuation of the hospital librarian as a professional.
3. Perception of the hospital library.

Table Dimensions, categories, subcategories, indicators and references (n)

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Dimensiones/categorías (referencias)	Subcategorías	Indicadores
1 - Percepción sobre el bibliotecario como profesional (*n*= 18)	1.1 - Experiencia profesional como bibliotecario en una biblioteca de hospital	La experiencia profesional es determinante en la evaluación del desepeño del bibliotecario de hospital; diferencias en el desempeño profesional del bibliotecario en una biblioteca especializada y no especializada.
	1.2 - Conocimiento sobre el contenido de la formación académica de los bibliotecarios de hospital	Conocimiento de la formación académica actual.
	1.3 - Formación del bibliotecario de hospital adecuada a las necesidades de los usuarios	Conocimiento de las necesidades de los usuarios.
	1.4 - Formación del bibliotecario de hospital adecuada a las necesidades de la institución	Conocimiento de las necesidades de la institución.
2 - Valorización del bibliotecario escolar como profesional (*n*= 19)	2.1 - El bibliotecario de hospital como miembro de un equipo clínico multidisciplinar	Saber si en Portugal existen equipos clínicos multidisciplinares; la importancia del bibliotecario de hospital como miembro de un equipo clínico multidisciplinar.
	2.2 - Contenido funcional del bibliotecario de hospital como parte del equipo clínico multidisciplinar	Conocimiento del contenido funcional del bibliotecario de hospital como parte del equipo clínico multidisciplinar; formación del bibliotecario de hospital adecuado a las funciones desempeñadas por un equipo clínico multidisciplinar.
	2.3 - El bibliotecario de hospital como miembro de un equipo de investigación	Saber si en Portugal existen bibliotecarios de hospital que formen parte de un equipo de investigación; importancia del bibliotecario de hospital como miembro de un equipo de investigación.
	2.4 - El contenido funcional del bibliotecario como miembro de un equipo de investigación	Conocimiento del contenido funcional del bibliotecario como miembro de un equipo de investigación; formación del bibliotecario de hospital adecuada a las funciones desempeñadas por un equipo de investigación.
3 - Percepción de la biblioteca de hospital (*n*= 27)	3.1 - La práctica de la medicina basada en la evidencia	Conocimiento sobre la práctica de la medicina basada en la evidencia; conocer si la práctica de la medicina basada en la evidencia es una realidad en Portugal; conocimiento de las funciones desempeñadas por el bibliotecario en la práctica de la medicina basada en la evidencia.
	3.2 - Los recursos de la biblioteca de hospital.	Concocimiento de los recursos de la biblioteca de hospital;
		gestión de los recursos de la biblioteca de hospital; estrategias para las políticas de gestión de costes.
	3.3 - El presente y el futuro de la biblioteca de hospital.	Conocimiento de los cambios acontecidos en la biblioteca de hospital en los últimos 10 años; anticipación a los cambios en la biblioteca de hospital del futuro; Propuestas de mejora para la biblioteca de hospital.

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An analysis of the results was carried out taking into account, on the one hand, the frequency of the indicators, and on the other hand, the construction of categories and subcategories based on the characteristics of the indicators, which are as follows: [17]

1. Perception of the work of the hospital librarian as a professional.
    1. It was considered that professional experience in health sciences libraries, especially hospital ones, could be an important aspect to answer the questions posed in the interview. This permissiveness is correct because although there are singularities in the professional performance of a librarian in a hospital library, according to the opinion of those interviewed, it is only the professional experience that makes the difference between the performance of a librarian in a specialized hospital library and a librarian who performs functions in a non-specialized library.
        - In the opinion of those interviewed, the skills of a librarian in health matters are acquired through professional experience and through continuous training. In many cases, professionals do not have the support of their superiors to develop new projects. There are persistent and creative librarians who invest in their training to promote more efficient service. However, there are also clinical librarians who lack the initiative necessary to change unfavorable situations for their library. The professionals interviewed also believe that it is necessary to demonstrate that the service provided by a librarian cannot be

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replaced by another unqualified professional, a recurring situation in many institutions.

2. The question arises whether the training of a hospital librarian is adequate for the needs of institutions and users. However, the majority of respondents are aware of the academic training provided and consider that it is not adequate, a situation that is aggravated by the rapid development of new technologies and, consequently, by the rapid expiration of skills. There is a clear lack of guidelines to standardize the activity of the health information professional in Portugal. Their activity cannot be determined by the individual attitude of each librarian nor by the availability shown by hierarchical superiors. The existence of guidelines will give consistency to the principle that the service provided by a clinical librarian cannot be replaced by another unqualified professional, a situation that is repeated in many institutions.
3. User preference for the digital service model is increasing. It is the "birth" of libraries without walls, which created a virtual space parallel to the traditional library: the non-physical library. [14] Users' preference for this new reference service model is only a consequence of the advantages offered by digital services, the speed with which information can be obtained, the convenience of being able to contact the library, regardless of the distance where the researcher is located, among others. [18] Furthermore, it appears from the opinion expressed in the interviews that information technology has made it practically

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unnecessary for the user to physically visit the library and for the librarian to have to meet with the user, whether for consultations, training or other activities. *Kronenfeld* [19] observed the same trend of these activities being offered "outside the library" while providing new opportunities in professional performance.

4. They believe that there should be a branch of documentary science dedicated specifically to hospital librarianship or a specialization in health. The specialized training of the "health librarian and/or clinical librarian" existing in other countries, as occurs in Northern Europe, should also exist in Portugal, since - although the training provides skills that allow the development of relevant work in access to information/knowledge - there are important gaps in the offer of specialized training in the area of health.
    - They also believe that institutions need librarians with knowledge of languages, health terminology, language indexing and descriptors in health sciences, and that technology is an important aspect of health sciences, but its development leads to rapid and outdated training.

2. Valuation of the hospital librarian as a professional.
    1. Many hospitals recognize the value of the hospital librarian in contributing to patient care from diagnosis to recovery; increases efficiency and decreases costs; minimizes the time healthcare professionals spend searching for information on appropriate diagnoses and treatments; improves patient outcomes; ensures the

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necessary knowledge base and provides quality digital and print resources. [3,5]

- The clinical librarian is a member of the multidisciplinary medical team and, as such, must always be available to provide information that improves the patient's quality of life and supports the continuing education of health professionals. [12] It seems possible to say that the integration of the librarian into multidisciplinary teams requires greater involvement and preparation for the demonstration of its added value in a universe that reconciles the practices of science, engineering and statistics. Therefore, it is necessary for the librarian to reinvent himself and follow this trend. In countries like the United States, the hospital librarian is part of multidisciplinary teams; She follows the visit to the wards and participates in clinical meetings. [10] In Portugal, the functions of the hospital library librarian are essentially limited to the library space. [18]

2. and 2.3 Research is another challenge, a new opportunity for health information professionals. In some countries, the librarian is part of the research team, as well as part of the clinical team. It is important to know what the Portuguese reality is, given the current importance of research in the area of health sciences and the new roles that hospital library professionals will have to assume.

- In the opinion of those interviewed, the clinical librarian is an asset to the research team. The design and analysis of clinical

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trials lacks information retrieval and management skills, areas in which the health librarian can excel. A holder of specific knowledge, such as systematic bibliographic research, has a unique role in contributing to the success of research, from its conception as a bibliographic researcher to the dissemination of results, or in medical writing and editing tasks. Research and clinical practice cannot be dissociated. These practices have always been "walking" side by side over time, so it is very relevant that there is a commitment between the institutions and the hospital library. *Nogueira* [17] considers that it is productive for the librarian to know the institution's projects and be an active member in planning and management meetings; he acquires a clear knowledge of the institution's objectives and assumes well-oriented and successful performance. [18])

3. The research team must recognize this contribution and not see it as an adversary, but rather as a collaborative partner, since a multidisciplinary team is by definition a set of people organized to achieve a common objective, in which each one contributes their own experience. . In the continuity of this definition, the librarian must maintain the specificity of his task, the treatment and availability of information, because this will be what will make the difference and allow better results to be achieved. In this way, a clinical librarian must be able to demonstrate their skills to research teams, and get involved in studies, disseminate information and anticipate the needs

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of accurate and current scientific literature at the level of scientific production and repositories. scientists. [19])

3. Perception of the present and future of the hospital library.
    1. The practice of evidence-based medicine is a reality in many countries. Is Portugal part of this group of countries? It is pertinent to know if Portugal follows countries such as the United States and the United Kingdom, among others, where this practice, as well as the integration of the hospital librarian into the multidisciplinary clinical team, is already routine. [twenty])
        - For those interviewed, the practice of evidence-based medicine is increasingly a reality in Portuguese hospitals and support for clinical decisions is increasingly important to achieve excellence in healthcare. But since this is not a practice in all Portuguese hospitals, some due to lack of financial resources, others due to lack of political measures, the librarian has the responsibility of creating "bridges" between doctors and those in charge of the hospital, to contribute to a growing practice.
        - Even in the opinion of those interviewed, there is no certainty about the widespread practice of evidence-based medicine, given the closure of so many hospital libraries, the accelerated process of fusion of services and the weight of the bureaucratic machinery of public and private hospitals. . Currently, evidence-based medicine is practiced by professionals who have received specific training for this purpose, who have

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access to sources of information and basic knowledge of information to use and evaluate them. Therefore, the practice of evidence-based medicine is considered to be a developing reality in Portugal. The lack of specific training in the country means that librarians are only asked to obtain the material already researched. Therefore, the librarian has the task of transforming information into knowledge, reinforcing his role as an active agent in health promotion, and being the manager of one of the essential steps in the practice of evidence-based medicine: researching the best scientific evidence.

- In the experience of those interviewed, the practice of evidence-based medicine increasingly needs a solid scientific basis to support clinical decision-making. The growth of available health information and the emergence of new clinical questions that need an immediate answer, pose new challenges in the daily practice of doctors who need immediate answers: the right information, at the right time, to achieve correct diagnoses.
- The role of librarians in the practice of evidence-based medicine is crucial in bibliographic research, updating and systematizing information, creating scientific repositories, providing research platforms and bibliographic tools. The librarian provides scientifically proven, reliable and timely answers; supports the healthcare professional who does not have time to research and who has difficulty examining

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available information in a timely manner. Thus, the librarian is responsible for bridging the gap, transforming information into knowledge, strengthening his role as an active agent in health promotion and managing one of the essential stages of evidence-based medicine: the search for the best evidence. scientific possible. In this way, he must cooperate in making the diagnosis through research in the scientific literature.

- In this context, it is evident that the evolution of medical practices has contributed to a change in library practices. The support provided by the librarian in indicating credible information resources, adapted to each particular situation, is of great importance in the patient education process. [twenty-one])
- The performance of the clinical librarian goes far beyond carrying out quick searches for information. She plays an active role within the team and uses her contextual knowledge to help answer clinical questions, confirm a diagnosis or confirm a treatment plan. [22]) From the results of the interviews, it was found that there are librarians who do not know the functions/role they should play in the practice of evidence-based medicine. However, most of the interviewees' responses, in addition to revealing knowledge on this topic, also reveal a consolidated position on what this practice actually is and what it should be. It is known that this is a practice that is increasingly present in large Portuguese hospitals to support

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clinical decisions to achieve excellence in healthcare, but there is an absence of these practices in small Portuguese hospitals.

- There are several reasons why this is not yet a common practice in all Portuguese hospitals: lack of funds, lack of political will from hierarchical superiors, lack of knowledge of the benefits it will bring to all those involved and lack of specific training in the area, a factor that leads librarians to be requested only to obtain the material already researched.

2. Quality evidence-based healthcare delivery increases the importance of library resources and validated information. Those interviewed advocate the creation of a national consortium for the health area, so that all institutions have access to the same information resources that guarantee the practice of evidence-based medicine, the continuous improvement of health care and intelligent management of financial resources. According to respondents, at the level of hospital library resource management, and given current challenges, there is a need for strong leadership and the establishment of optimal partnerships with national and local partners, including influential content providers. in decision-making regarding strategies, policies and investments.

    - Let us now look at the strategies for cost containment policies and find out that the library can contribute to reducing costs by effectively supporting management with practical information at a reduced cost, reducing the costs of duplication of research

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efforts and , often eliminating the need for research outside the company/institution. There is also evidence that financial investment in libraries and library services has important benefits related to saving valuable time and optimizing the quality of patient care. [3])

- Regarding the financing issues that periodically have to be faced in the hospital library, we can consider it a crucial and worrying aspect, since it is essential to look for strategies when budget cuts are at the forefront, whenever it is necessary to assume containment policies. .
- The interviewees are unanimous on this issue. The State and the hierarchical superiors of the institutions are responsible for defining policies that value libraries in social, cultural and scientific aspects and for investing in a general manner; and more specifically, in the acquisition/renewal of publications. The importance of having a good collection (digital or paper) is decisive in a library, whose users are at the forefront of knowledge.
- This can be considered an ethical issue, urgently needed, whose solution would be the creation of a national health consortium for the acquisition of resources and which would have the necessary requirements to guarantee equal access to information for all institutions in the country. In the same way, it would be a guarantee that the practice of evidence-based

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medicine had the necessary resources to become a reality and, consequently, influenced the continuous improvement of health care and the intelligent management of financial resources.

- Interviewees suggested other alternatives, such as regional partnerships between institutions to share subscriptions to publications and databases; greater cooperation between libraries to share resources, including university libraries; financial autonomy, with funds from, for example, clinical trials, sponsorship, applications, among others, which would allow libraries to directly acquire resources.

3. Knowing what has changed, or if anything has changed, in the last 10 years and trying to anticipate the near future can help develop proposals to improve the performance of the hospital library. From the point of view of the professionals interviewed, the hospital library environment is very different from that of 10 years ago, especially in university hospitals, although it is clear that there is underinvestment in this service both in terms of budget and human resources. because much of the information is currently accessible through the Internet, and because the extraordinary skills of the librarian are unknown and, therefore, not valued. Every day, in-person users are fewer and they no longer consult paper resources, as they prefer the PC or their tablet. However, there is a significant increase in requests via the Internet (institutional messaging or email) and everything is urgent (the patient cannot wait and the studies have a delivery time).

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- They also mention that the great change in the hospital library in the last 10 years responded to the appearance of the digital format and the increase in the number of scientific publications, as well as the change in the services provided. In addition to maintaining traditional services, the hospital library is increasingly distant from its physical space and thus meets the needs of users. We have gone from a lack of information to an excess of information. Today, the greatest difficulty is understanding what information is really important, critically evaluating available resources, and helping users locate the best scientific evidence: knowledge over information.
- In fact, current legislation in Portugal does not require there to be a library in hospitals; and when it exists, these teams are very small. Librarians who work in these libraries are called "lone librarians" and there are great difficulties in integrating projects, teams and work groups.
- Information professionals must enhance and better communicate what they know and do best, demonstrate their abilities to locate the most relevant and appropriate information, and teach health professionals how to locate, evaluate and use information in an ethical and responsible. They should teach how to work with *rankings* , what an impact factor is and how it is defined, what quartiles are and how they are constructed, what alternative metrics are, how to combine the scientific

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impact with the social impact of scientific publications, what they are predatory journals, how to recognize them, what open access is, why you have to pay to publish in open access, and how to approach this issue in light of the editorial policies of commercial entities.

- For the librarians interviewed, the future trend is the worsening of the world situation. Professionals must meet, work as a team, cooperate with other colleagues, associate between professionals and between institutions, and join professional associations to strengthen themselves, promote themselves as professionals, demonstrate the importance of their role, their profession and how they can actively contribute to the institution. In the next 5 years, many hospitals may close their libraries or stop having librarians. No positive changes are expected in the next few years, and within 5 years. At the will of some, the hospital library would cease to exist. So there is a state of uncertainty about the future.
- Finally, they considered that in the next 5 years there will be important changes. It is expected that progress will be made towards the contraction of clinical decision support resources at the national level (in the short or medium term). Regardless of the future, it is up to the health librarian to take on the challenges, invest in constant updating and acquisition of skills, strengthen their role in the institutions in which they are

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inserted, and justify greater integration into medical and research teams.

- Today and in the future, our services must not only be flexible, active and timely, but must also transform information services into critical tools for decision-making, innovation and research. Information will increasingly become part of healthcare and our ability to access, understand and interpret it will be crucial both at the level of the profession and within the national healthcare system itself.

Conclusions

The library can take a proactive role in the hospital organization; anticipate the information demands of their professionals and develop information tools and resources. The study highlights three categories for good knowledge and functioning of the hospital library in Portugal: perception of the work of the hospital librarian as a professional, appreciation of the hospital librarian as a professional, and current and future perception of the hospital library. For this, a detailed description of each of the categories analyzed was obtained, depending on each source, among which some of the topics most mentioned by librarians stand out, which are crucial for a perspective of change:

- The training that is currently officially provided is not the most appropriate for a health librarian. There should be specialized training for the "health librarian and/or clinical librarian," a branch of documentary science dedicated specifically to hospital librarianship or a health specialization.

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- When the health unit has this service, the teams are very small. In this way, "lone librarians" (isolated librarians) have great difficulties in promoting dissemination and promotion initiatives, integrating projects and developing greater activity between users and institutions.
- The practice of evidence-based medicine is an unusual reality in Portugal and the extraordinary skills of the librarian who contribute and promote best practices and increase confidence in the services they provide to patients are unknown and therefore not valued. users.
- The role of librarians in the practice of evidence-based medicine is crucial in bibliographic research, updating and systematizing information, creating scientific repositories, providing research platforms and bibliographic tools that provide security. necessary so that health professionals can practice more effective medicine. It should also be your responsibility to contribute to the good image of the hospital among the academic community and the community in general; provide information to patients and their families; participate in the placement of community support services, as well as identify and provide quality information from any source (print or electronic).

Professionals must come together, work as a team, cooperate with other colleagues, associate among professionals and between institutions, and join professional associations to strengthen themselves, promote themselves as professionals, demonstrate the importance of their role, their profession and how they can actively contribute to the institution. .

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- The hospital library must also carry out its activities in accordance with the objectives of the responsible institution. It is essential to have a strategy based on a good relationship with the organization itself and speak the company's language to contribute to its success.
- It will be important to introduce a quality system in service routines that allows the adaptation of improvements to real needs. Evaluation is important. It is essential to know the weaknesses of the service, measure the impact of activities, understand user satisfaction and evaluate the cost-benefit relationship.
- In the cost-benefit relationship, future trends will be the abandonment of the acquisition of resources at the local level so that they can be contracted centrally by a national entity. The creation of a national consortium will be the means to make better contracts with publishers and suppliers, and the fair way for all institutions to have access to the same information resources.
- Research is another challenge, a new opportunity for health information professionals. It is precisely in the area of research support where the hospital librarian will join the work teams as a crucial element in the research, review and updating of information, as a bibliographic researcher in the design and analysis of clinical studies, to contribute his skills in systematic literature review and as a medical writer and editor in supporting the writing of scientific articles.
- Although it is clear that the hospital library environment is very different from that of 10 years ago, especially in university hospitals, legislation still

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does not require its existence in hospitals, which means that many health institutions do not have a library.

- The opinion of all those involved in hospital libraries is unanimous when it is stated that the State and the hierarchical superiors of the institutions are responsible for the investment and definition of policies that value the important role of libraries as guarantors of equal access to information.

Finally, it is important to consider the relevance and relevance of the present study for the redefinition and evaluation of the importance of hospital libraries in Portugal, the dynamics of health units and the improvement of decision-making processes in the environment. hospital, as well as raising awareness for the construction of a network of hospital libraries, associated with a policy of valuing its professionals

This study highlights the need for more research on the perception of the work of hospital librarians, with studies on other centers, in a way that makes possible geographical comparison and the implementation of management strategies, differentiators in each hospital library. It is suggested that future research be carried out on this topic with a mixed perspective, both qualitative and quantitative, using, for example, an interview focused on the librarian's experience that also uses other quantitative evaluation methodologies, such as self-efficacy scales, climate organizational and health literacy, among others.

This complex and uncertain panorama is part of a transition stage in which it is necessary to reaffirm the need to delve deeper into this topic, highlighting the added value that library services professionals provide in hospitals and health

units, both from the from an intellectual point of view as well as from an economic and management perspective.

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The Progression Of Scientific Output In Physiotherapy For Women's Health: A Study Across Spanish, Portuguese, And Brazilian Contributions

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ABSTRACT

The objective of this study was to compare the Spanish-Portuguese-Brazilian scientific production on physiotherapy in women's health between the years 2004-2008 and 2013-2017 and to identify in the latter the most relevant features of the scientific production. For this, a bibliometric study was carried out that analyzed the volume of production, the rates and collaboration pattern, and the productivity of the authors. The increase in production between five-year periods was significant ($p < 0.04$), with a rate of 606.06%. The most researched fields were menopause (34%) and aging (24.03%). Brazilian universities are those with the greatest research potential in the field, both due to their volume of work (61.80%) and their degree and management of collaborative research. A greater commitment is needed from authors, since the transitory index is 83.58%, and from countries to continue their lines of research on the topic under study to have leaders in the field and consolidate scientific literature.

Keywords: Women; physiotherapy; bibliometrics; health evaluation

INTRODUCTION

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Women's health deserves attention throughout the different stages of life due to the negative impact that some of them have on quality of life. Interest should begin in the early stages with the appearance of menstruation, since between 40 and 90% of adolescents and young women present severe menstrual pain that affects quality of life in 20% of cases. [1] Of these, in 10% the cause lies in pathologies such as polycystic ovaries or endometriosis. [2] Pelvic pain is of such impact that it generates changes in brain connectivity, [3]) or even favors the appearance of central sensitization conditions. [4]

Up to 28% of women will present with vulvodynia at some point in their lives, [5] which affects quality of life in 27% of cases, [6] since not only will vulvar pain be present, but in most cases it is accompanied by of gastrointestinal, urological, sexual problems and even depression or other mood disorders. [7] During pregnancy, for example, in Brazil, 51% of pregnant women suffer from severe low back pain and 37% of them see their daily living activities altered. [8] More than 30% of pregnant women will experience constipation and of these, 67% will have a cesarean delivery. In other cases, the characteristics of childbirth will leave behind problems in the pelvic floor, such as urinary incontinence [9] or sexual dysfunctions. [10] With the arrival of the climacteric, women usually suffer various symptoms, such as fatigue, [11] pain, [12] or sleep disturbances. ([13] Thus, the conditions that women can suffer throughout life are multiple and in most cases compromise their state of health and quality of life. But the stage of greatest clinical interest is aging, since , although women show a lower mortality rate compared to men (in developed countries, women are 81 years old *versus* 74.7 years in men), they present greater disability or poor health. [14] As women age, they will have a

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predisposition to manifest some type of specific chronic disease. In some cases these chronic diseases are associated with risk factors that, with appropriate interventions, can be controlled, [15] including osteoporosis [16] or obesity. [17] The latter favors the appearance of strokes. [18]

Although the main therapeutic action of the clinic that women suffer at some point in their life is pharmacological, with its consequent side effects, physiotherapy stands out as a technique in the different areas of women's health. Thus, manipulation of the connective tissue can regulate painful menstruations, [19] perineal massage prepares the pelvic floor for a better childbirth, [20] or pelvic floor exercise can control urinary incontinence. [twenty-one]

The areas of action of physiotherapy in women's health are so broad, and still unknown, that the presence of solid scientific evidence in the field is important. To continue with new studies, it is necessary to know the trend of scientific production (subject matter, authorship, geographical coverage, etc.), and how it evolves over time to implement new strategies in health policies. [22, 23] Although there are international bibliometric analyzes on women's health focused on pregnancy, [24, 25] cancer , [26, 27, 28] and menopause, [29, 30] there are none on physical therapy in women's health. woman of Spanish-Portuguese-Brazilian origin.

The objective of the study was to compare the Spanish-Portuguese-Brazilian scientific production on physiotherapy in women's health between the years 2004-2008 and 2013-2017 and to identify in the latter the most relevant features of the scientific production.

METHODS

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A comparative study with a bibliometric approach was carried out, in which the most relevant features of the scientific production of the five-year period 2013-2017 were identified. At the same time, a retrospective analysis was carried out to identify the research potential of the countries analyzed. [31] The source of information consulted to recover the records was PEDro and *Physiotherapy Evidence Database* , as it is the base of excellence for physiotherapy that indexes articles with maximum scientific evidence, with more than 90% of randomized clinical trials *versus* other databases. . [32]

Records were obtained directly from the continence and women's health database field . These were exported to *Refworks* and later to Excel for management. The search was limited to the five-year periods 2003-2008 and 2013-2017, in which 33 and 233 records were recovered respectively. A five-year range was chosen given the importance given in scientific literature to the production of the last five years. [33] The origin of the authors, institutions and countries was searched manually, and only production of Spanish-Portuguese-Brazilian origin was included in the study. The bibliometric indicators for the study of each five-year period and object of comparison were:

- - Total scientific production, thematic production by the analysis of keywords and documentary typology calculated by the number and percentage of indexed articles.
- - Growth rate to measure the percentage evolution of production between both five-year periods and for each of them, *T= (Nf-Ni/Ni)100]* where *Nf* is the final number of jobs and *Ni* the initial number of jobs.

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- - Author productivity index based on the logarithm of the number of articles published *Ip= log n° articles*. Prolific authors or large producers are considered those authors who have 10 or more works, medium producers are authors with production between 2 and 9 works, and small research producers with a single publication.
- - Transience index by the percentage of authors with a single publication.
- - Affiliation of the authors and geographical coverage of the research, by number of works and percentage of each of them.
- - Index of co-authorship and collaboration between institutions and countries by the quotient between the number of signatures and the number of works accompanied by the standard deviation (SD)
- - Degree of connectivity of the social network with the indicators: degree of centrality, to identify the number of and degree of intermediation, to show the relationship between different groups of nodes. These indicators have been calculated with the UCINET program. 6 and visualized with VOSviewer.

The descriptive statistical analysis was carried out with the SPSS v.22 program. The statistical parameters used were absolute frequencies, percentages, means, standard deviation and t-student for a significance level of $p < 0.05$.

RESULTS

In the five-year period 2004-2008, international production on women's health represented 8.91% of the total production in physiotherapy indexed in PEDro, while between 2013-2017 it was 12.51%. At the level of Spanish-Portuguese-Brazilian production, a significant change was observed ($p < 0.04$). In the first

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five-year period the percentage of articles was 7.71% (33 articles), and in the second it reached 15.03% (233 articles). The growth rates were 366.66% for 2004-2008 and 44.44% for 2013-2017. The growth rate between the two five-year periods was 606.06%, while in the middle of the 2004-2008 five-year period, 50% of the production of the period had not yet been accumulated (table 1).

Table 1 Evolution of production for the five-year periods 2004-2008 and 2013-2017

Años	N° artículos	% artículos	% artículos acumulados	Años	N° artículos	% artículos	% artículos acumulados
2004	3	9,09	9,09	2013	36	15,45	15,45
2005	2	6,06	15,15	2014	46	19,74	35,19
2006	8	24,24	39,39	2015	49	21,03	56,22
2007	6	18,18	57,57	2016	50	21,45	77,67
2008	14	43,42	100	2017	52	22,31	100
Total	33	100	-	-	233	100	-

In both periods the authors preferably focused on research on menopause and aging. 6.86% corresponded to obesity, 4.72% to stress and 3% to osteoporosis, related to menopause or aging. But little by little, the interest of researchers has been directed to other women's health problems such as pelvic pain, sexual dysfunctions, and childbirth and postpartum (table 2). The totals in the table add up to more than 100%, since there are works with more than one subject area assigned.

Table 2 Thematic areas in women's physiotherapy

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Areas temáticas	N° artículos (%) 2004-2008	N° artículos (%) 2013-2017
Cáncer	5 (15,15)	30 (12,87)
Depresión	1 (3,03)	2 (0,86)
Disfunción sexual	0	3 (1,28)
Dismenorrea	0	3 (1,28)
Dolor	3 (9,09)	24 (10,30)
Dolor pélvico	1 (3,03)	4 (1,71)
Embarazo	5 (15,15)	12 (5,15)
Endometriosis	0	1 (0,42)
Envejecimiento	6 (18,18)	56 (24,03)
Estrés	3 (9,09)	11 (4,72)
Incontinencia	4 (12,12)	43 (18,45)
Menopausia	11 (33,33)	80 (34,33)
Obesidad	2 (6,06)	16 (6,86)
Osteoporosis	0	7 (3)
Ovarios poliquísticos	0	1 (0,42)
Parto	0	3 (1,28)
Posparto	0	5 (2,14)

82.83% of publications between 2013 and 2017 were clinical trials. 16.17% were systematic reviews and 0.42% were clinical practice guidelines; and between 2004 and 2008, 87.87% were clinical trials. The remaining percentage (12.13%) corresponded to systematic reviews.

Authorships

The most recent production is signed by 1,127 authors *versus* 157 authors from 2004-2007. In the latter, the transitory index was 90.44%, the presence of medium producers was 9.55% and there was an absence of prolific authors, where the

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author with the most articles was *RC Burini*, from the Universidade Federal from São Paulo (3 articles). For 2013-2017, the authors' productivity index shows that 0.08% of the authors are prolific, 16.32% are medium producers and the remaining percentage are small producers, so the transitory index is located at 83.58%.

Of the prolific authors of the second five-year period, *R. Barakat*, from the Polytechnic University of Madrid, Spain, stands out with 5.15% of the production; Next is *A. Lucio* , from the State University of Campinas (3.43%); and *ES Cyrino*, from the Universidade Federal de Santa Catarina, both from Brazil; *M. Perales*, from the Polytechnic University of Madrid and *R. Ramírez-Vélez* , from the Santo Tomás University of Colombia, the latter with 3% of the production.

At the institutional level, the period 2004-2008 is signed by 28 institutions, of which the State University of Campinas stands out with five works and the Federal University of São Paulo with four. While the institutions for the second period amount to 332, of which the Universidade de São Paulo stands out with 31 articles, the Universidade Federal de São Paulo (25), the University of Granada (14), the Universidade Federal do Rio Grande do Sul (13), the Universidade Estadual de Londrina (11) and the Polytechnic University of Madrid (10). In this last five-year period, 90.12% of the research comes from universities and 26.61% from hospitals.

Geographic coverage

The Spanish-Portuguese-Brazilian research comes from nine countries. Brazil occupies first place with 61.80% of production, followed by Spain with 31.75% (table 3).

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Table 3 Spanish-Portuguese-Brazilian production for the five-year periods 2004-2008 and 2013-2017

Países	N° artículos (%) 2004-2008	Países	N° artículos (%) 2013-2017
Brasil	21 (63,63)	Brasil	144 (61,80)
España	9 (27,27)	España	74 (31,75)
Portugal	2 (6,06)	Portugal	14 (6)
Chile	0	Chile	14 (6)
Colombia	0	Colombia	9 (3,86)
México	2 (6,06)	México	3 (1,28)
Argentina	0	Argentina	2 (0,85)
Ecuador	0	Ecuador	1 (042)
Perú	0	Perú	1 (0,42)

Brazil ranked fifth in the five-year period 2013-2017 and has moved to third place; Spain has also advanced from fifteenth to eighth (table 4).

Table 4 Total international production on physiotherapy in women's health

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País	N° artículos 2004-2008	N° artículos 2013-2017	País	N° artículos 2004-2008	N° artículos 2013-2017
Alemania	10	46	Israel	3	6
Arabia Saudí	0	5	Italia	7	40
Argentina	0	2	Japón	14	23
Australia	38	122	Kosovo	0	3
Austria	0	5	La Reunión	0	1
Bahréin	0	3	Libia	0	1
Bélgica	2	15	Lituania	0	1
Brasil	23	144	Luxemburgo	0	1
Brunei	0	1	Malasia	0	8
Canadá	42	91	México	2	3
Chile	0	14	Nigeria	0	8
China	19	155	Noruega	12	45
Chipre	0	4	Nueva Zelanda	5	13
Colombia	0	9	Omán	0	1
Corea	10	69	Países Bajos	10	39
Croacia	0	5	Pakistán	0	2
Dinamarca	6	23	Perú	0	1
Ecuador	0	1	Polonia	0	15
Egipto	0	20	Portugal	2	14
Eslovenia	0	4	Qatar	0	1
España	8	74	Reino Unido	43	120
Estados Unidos	120	334	Rumanía	0	2
Etiopía	1	1	Rusia	0	1
Finlandia	14	18	Serbia	0	2
Francia	5	22	Singapur	0	1
Hungría	1	3	Sudáfrica	1	7
India	1	24	Suecia	15	41
Indonesia	0	1	Suiza	1	8
Irán	3	93	Tailandia	1	17
Irlanda	0	12	Túnez	1	4
-			Turquía	10	47

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When observing the between countries and thematic areas studied with the network map, it is observed that Brazil, Spain and Chile cover a greater number of thematic areas (11, 8 and 5 respectively), while Mexico and Ecuador are in the opposite position. with two areas and Peru with only one. Brazil tends to research more on aging and menopause, while Spain focuses more on obesity and cancer; and Chile in aging and pregnancy (Fig. 1).

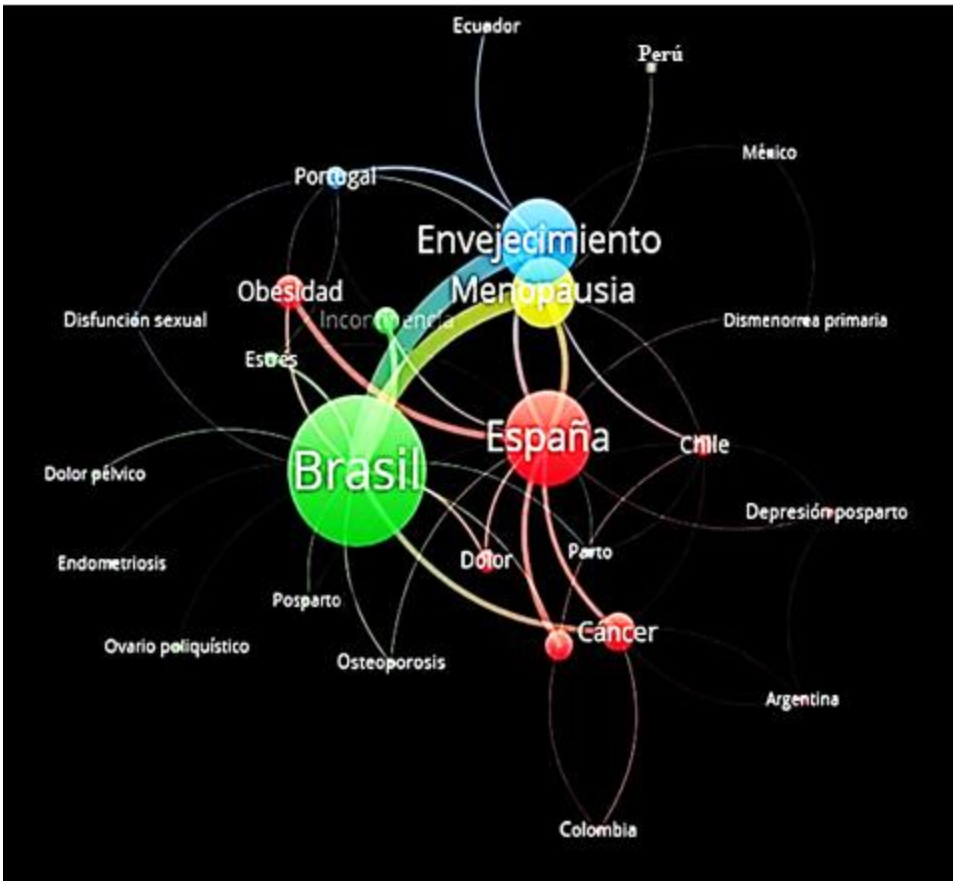

Fig. 1 - List of thematic areas and geographical coverage (2013-2017)

Collaboration analysis

The co-authorship index has gone from 5.24 (SD 2.42) in 2004-2008 to 6.26 (SD 2.60) for the most recent five-year period ($p < 0.02$). In the period 2013-2017,

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collaboration patterns have increased and institutional collaboration has doubled, from 1.24 (SD 0.50) to 2.50 (SD 2.18), while international collaboration does not present such changes. relevant, from 1.06 (SD 0.24) to 1.32 (SD 0.65).

All Hispanic and Portuguese-speaking countries identified in the production work in international collaboration (Fig. 2), although the degree of network centrality represents 11.86% of all collaboration possibilities. The two countries with the most are Spain (33), of which 10 correspond to Chile, and Brazil (31), which collaborates mainly with the United States (5). Next is Chile (18) and Colombia (9). However, it is observed that in the degree of intermediation, Brazil (220.31) is positioned in first place, followed by Spain (103.04), Colombia (43.5), Chile (17.98) and Portugal (7 ,40). There are countries whose degree of intermediation is zero (Ecuador, Peru, Mexico and Argentina). In this case, the density of the intermediation network is 45.03%. This collaboration situation differs from the period 2004-2008, in which there are only two articles in collaboration (Spain collaborates on one article with the United Kingdom and another with Portugal).

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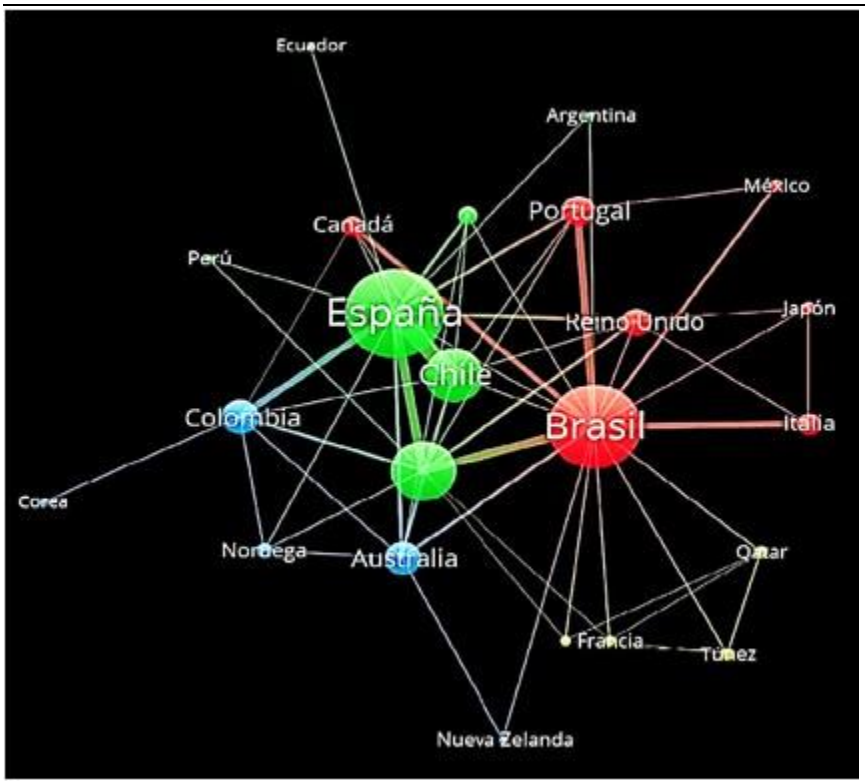

Fig. 2 Collaboration between countries (2013-2017).

DISCUSSION

The evolution of Spanish-Portuguese-Brazilian production on physiotherapy in women's health is significant. As in other fields of medicine [31], production on physiotherapy is climbing positions. Since 1990, Spain and Brazil have been two of the 11 countries with the highest number of research published in medical sciences, [32] The latter was at the top of publications in Latin America. Spain and Portugal are governed by the policies of the European Union in health fields [34]) and physiotherapy in women's health seems not to be essential when observing the results. Portugal, which has a GDP for research and development greater than Spain, [35] has much lower production. The same happens with Spain and Brazil, which with a GDP higher than Spain publishes half that of Brazil.

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Production in Latin America is not distributed evenly, [36] but the greatest investment in research falls only in Brazil, [37] and makes it the largest producer of scientific literature in physiotherapy. Other countries like Cuba, where health professionals carry out research, for different reasons are not made visible. [38] But Brazil not only stands out for its volume of publications, but also for its ability to manage work groups due to its degree of intermediation in the collaboration network. Likewise, it has a good track record in international collaboration work, especially with American and European countries, and especially with Spain. [39] Unlike the results of the study by *Alonso-Arroyo* (2014), in which Spain and Brazil have strong collaborative ties in different medical areas, the same does not happen with physiotherapy in women's health. [39] Brazil, according to the production analyzed, like other studies, preferentially collaborates with the United States. [40] This situation favors Brazil in being able to carry out a greater number of researches and publish in high-impact international journals.

Strengthening the development of health research involves economic evaluations and quality of life studies. Only the United Kingdom, Australia and the United States are governed by both premises. In other cases such as Spain, despite being one of the countries with the capacity to lead quality studies and generate a significant volume of work, research activity is still deficient. [41]

The interest in the benefits of physiotherapy is evident not only by the growth in the volume of works, but also by the number of authors involved. Although the transience index has decreased over the years, it is still very high, higher than the 60% proposed by *Lotka* , so there are still insufficient authors specialized in the field, [42] although the short period of time could justify these results.

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Universities are the institutions that have had a greater presence in the development of research. [40] Like other bibliometric studies, the Universidade de São Paulo, Universidade Federal de São Paulo or Universidade Estadual de Campinas are among the most involved in health research, [31, 40] which are positioned as references in the field of study by having a better degree of development, [43] compared to the rest. The increase in research and the involvement of a greater number of authors facilitate the formation of collaborative ties, due to the relationship between both indicators. [44] This situation, to better manage resources when working collaboratively, should motivate governments to propose initiatives aimed at promoting collaboration between researchers. [45] Both Spain and Brazil reflect the probability of establishing new focuses and tools that promote construction networks in which collaborators interact. [46]

Interest in the impact on women's health status from menopause and aging has continued to focus the attention of researchers. About 60% of menopausal women have a chronic disease, and cardiovascular conditions are the main causes of morbidity and mortality from this time onwards, which could be related to the resulting metabolic changes. [18] Ecuador and Brazil are the two Latin American countries with the highest percentage of cases of postmenopause metabolic syndrome, 50.5% and 42.2% respectively. [47] Therefore, almost 50% of women in both countries are at risk of stroke. Although Brazil presents a greater risk of obesity, [48] the country with the highest production in this regard is Spain. Given the position of menopause in the aging process of the female population, due to its individual and social consequences, it is necessary to continue analyzing the role of physiotherapy to reduce the impact of menopause on women's health status. The

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longer life expectancy also determines the increase in cancer cases. In the year 2035, it is estimated that worldwide cases will increase by about 11,000,000; In Spain alone they will amount to 117,256. [49] In Latin America, for example, by 2050, it is estimated that the population over 65 years of age will have increased almost 5 times. [44, 50] In those women who survive, depending on the type of cancer and treatment, physical therapy will be aimed at reducing edema, improving joint tone and mobility, or improving mood. However, despite the incidence of the pathology, the percentage of articles on it is practically anecdotal. The potential of Latin America to develop cancer research is high, [35] although the same does not happen with physiotherapy. That is why Spanish-Portuguese-Brazilian researchers must increase research in the field. Some Latin American countries must even implement policies that address the health problems of older women. An example is Cuba; While the Cuban population is expected to be the oldest in Latin America in the year 2025, [51] according to the production analyzed, it does not present publications on physiotherapy in this regard. The rest of the fields in which physiotherapy has a place, as prevention or treatment to improve the quality of life of women, are making progress as the results show, although they are still insufficient.

The present study has shown the increase in scientific production on women's health by researchers from Spanish- and Portuguese-speaking countries. The fields of greatest interest have been menopause in parallel with aging, although it is necessary to investigate the rest of women's health conditions that generate a negative impact on their quality of life. Brazilian universities have the greatest research potential in the field, both due to their volume of work and their degree

and management of collaborative research. A greater commitment from authors and countries is necessary to continue their lines of research on the topic to be studied in order to have leaders in the field and consolidate scientific literature.

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