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APPLICATION OF NEW TECHNOLOGY AS A TOOL FOR INTEGRATIVE REVIEW QUALITATIVE RESEARCH: SOPHIE PROGRAM

APLICAÇÃO DE NOVA TECNOLOGIA COMO FERRAMENTA PARA A PESQUISA QUALITATIVA DE REVISÃO INTEGRATIVA: PROGRAMA SOPHIE

APLICACIÓN DE NUEVA TECNOLOGÍA COMO HERRAMIENTA PARA LA INVESTIGACIÓN CUALITATIVA DE REVISIÓN INTEGRATIVA: PROGRAMA SOPHIE

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ABSTRACT

Objective: to build an internet application to assist in the organization of texts in qualitative studies of integrative literature review. **Method:** this is the development of a computer program as an Internet application, the Sophie Program, registered in the Information and Coordination Center of the BR Point (NIC.br), whose creation ticket is number 13232530 and the domain name More **Results:** the Sophie Program is prepared to import data collected in different databases in the RIS format, which has been tested and used in the development of integrative review studies. **Conclusion:** it was possible to build an Internet application that assists in the organization of articles in qualitative studies of integrative literature review, ensuring greater safety, agility and quality in the development of qualitative research carried out on a scientific basis. **Descriptors:** Technology; qualitative Research; Review Literature as Topic; Review; Sophie Program.

RESUMO

Objetivo: construir uma aplicação de internet para auxiliar na organização dos textos em estudos qualitativos de revisão integrativa da literatura. **Método:** trata-se do desenvolvimento de um programa de computador como aplicação de Internet, o Programa Sophie, registrado no Núcleo de Informação e Coordenação do Ponto BR (NIC.br), cujo ticket de criação é o número 13232530 e o nome de domínio programasophie.com.br. **Resultados:** o Programa Sophie está preparado para importar dados coletados em diferentes bases de dados no formato RIS, o qual foi testado e utilizado no desenvolvimento de estudos de revisão integrativa. **Conclusão:** foi possível construir uma aplicação de Internet que auxilia na organização dos artigos em estudos qualitativos de revisão integrativa da literatura, garantindo maior segurança, agilidade e qualidade no desenvolvimento de pesquisas qualitativas realizadas em base de dados científica. **Descritores:** Tecnologia; Pesquisa Qualitativa; Literatura de Revisão como Assunto; Revisão; Programa Sophie.

RESUMEN

Objetivo: construir una aplicación de internet para auxiliar en la organización de los textos en estudios cualitativos de revisión integrativa de la literatura. **Método:** se trata del desarrollo de un programa de ordenador como aplicación de Internet, el Programa Sophie, registrado en el Núcleo de Información y Coordinación del punto BR (NIC.br), cuyo ticket de creación es el número 13232530 y el nombre de dominio (en inglés). **Resultados:** el programa Sophie está preparado para importar datos recogidos en diferentes bases de datos en formato RIS, el cual fue probado y utilizado en el desarrollo de estudios de revisión integradora. **Conclusión:** fue posible construir una aplicación de Internet que auxilia en la organización de los artículos en estudios cualitativos de revisión integrativa de la literatura, garantizando mayor seguridad, agilidad y calidad en el desarrollo de investigaciones cualitativas realizadas en base de datos científica. **Descriptores:** Tecnología; Investigación Cualitativa; Literatura de revisión como Asunto; Revisión; Programa Sophie.

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INTRODUCTION

This article presents the development of a technology, in order to guarantee safety and quality in the development of researches based on scientific data, for integrative reviews of literature. The *start* came in 2013, during the development of a Course Completion Work (CCW) in the Nursing area that, after choosing the theme and its health descriptors for an integrative literature review, encountered an expressive number of articles (N = 2,600) identified in the Virtual Health Library database (VHL).¹

At the moment, the need to rationalize has arisen, in order to organize the analysis of the result found, due to the number of articles identified and, mainly, by the concern to carry out the analysis in the most organized way possible, since any carelessness, when analyzing many articles, can generate problems of scientific nature in the organization and analysis of scientific texts directly in the selected database, which would imply in the selection of the articles to compose the integrative revision and, consequently, in the results of the research.

This work should be done with the help of technology, in order to give it greater reliability, considering the complexity and importance of following a standard of classification of scientific texts that ensures the best possible ethical and scientific results. In this way, the then academic Karen Cristina Jung Rech requested assistance to Rodrigo Ferri Pontes, and, after much analysis on the issues that permeate the selection of the articles directly in primary database, both decided to develop a computer program to assist the process of analysis and classification of the articles found in database for the accomplishment of the integrative review of the literature.

For this reason, the researchers Rech and Pontes began to develop a computer program, in co-authoring, whose objectives were: the aid in the collection in scientific data base; definition of criteria for selection and exclusion of scientific texts, in accordance with the methodological criteria for integrative literature review, in order to support qualitative research; the elaboration of reports, from the databases investigated, and the classification of the scientific texts, following a pattern of inclusion and exclusion criteria, to be defined previously, which would inform the progress and the result of the research in database. The internet application was designed to assist in the

organization of articles in qualitative studies of integrative literature review.

At this date, the domain of the application is registered in the Information and Coordination Center of Point BR (NIC.br),² whose creation ticket is the number 13232530 and the domain name programasophie.com.br, being able to be accessed from the site: www.programasophie.com.br.

OBJECTIVE

- To build an internet tool to assist in the organization of texts in qualitative studies of an integrative literature review.

METHOD

Because the Internet offers practicality with regard to the possibility of access in many places and through many different devices, it was decided to develop a computer program as an Internet application (Sophie Program).

Application of the Internet, according to art. 5, item VII, of Law no. 12.965 / 2014, consists of: "the set of functionalities that can be accessed through a terminal connected to the Internet."³

In its development, we used the PHP programming language, whose definition is extracted from its official website.⁴ PHP (a recursive acronym for PHP: Hypertext Preprocessor) is a widely used, widely used, *open source scripting language*, and, especially, suitable for web development and which can be embedded within HTML.⁴

With regard to the database, *MySQL*⁵, was chosen because it was reliable and fast, characteristics that were necessary, in view of the objectives of the Sophie Program.

The definition of the *MySQL* database can also be extracted from its official website,⁵ which is: "*MySQL* is the world's most popular open source database, which enables economical delivery of reliable, high-level database applications performance and scalable, Web-based and built-in".⁵

Initially, the Sophie Program had only the Virtual Health Library (VHL) database. Subsequently, accepted several databases, since it interprets the RIS format, created by the company Research Information Systems, which allows citation programs to exchange data among themselves.⁶

The development of the Sophie Program followed all the steps of the integrative review carried out by Rech, and, with each new need, an update was made available and

implemented with the adjustments in the Sophie Program.

It is possible to work with data collected from several databases that export the research in RIS format, such as: Web of Science, LILACS, Medline, Scielo, SCOPUS, Science Direct, CINALL, among others.⁷⁻⁸

After the collection of the file in the RIS format, provided by the scientific databases themselves, the user can integrate these files into their research to the Sophie Program. Only then will the program assist you in the process of selecting the texts, according to inclusion and exclusion criteria, previously listed, to enable the integrative review.

The research of integrative revision of the literature, carried out by Rech, was completed in 2013 and was presented to the Nursing Course of the State University of Santa Catarina (UDESC) in the same year. However, the Sophie Program continued to be improved in subsequent years during use in other research.

RESULTS AND DISCUSSION

Description of functions and application of the Sophie Program

In order to use the Sophie Program, the user must access the website www.programasophie.com.br and identify himself by means of previously registered user and password.

With regard to the creation of a new integrative revision, as explained previously, the user must first, carry out his / her research in the chosen database and export the result to a file in the RIS format, which is often made available by means of a the scientific database itself. Following this, the user must import the RIS file into the Sophie Program, at which time the integration with the Internet application is done.

After access, the user can choose whether to continue an integrative review already started or create a new search, according to figure 1:

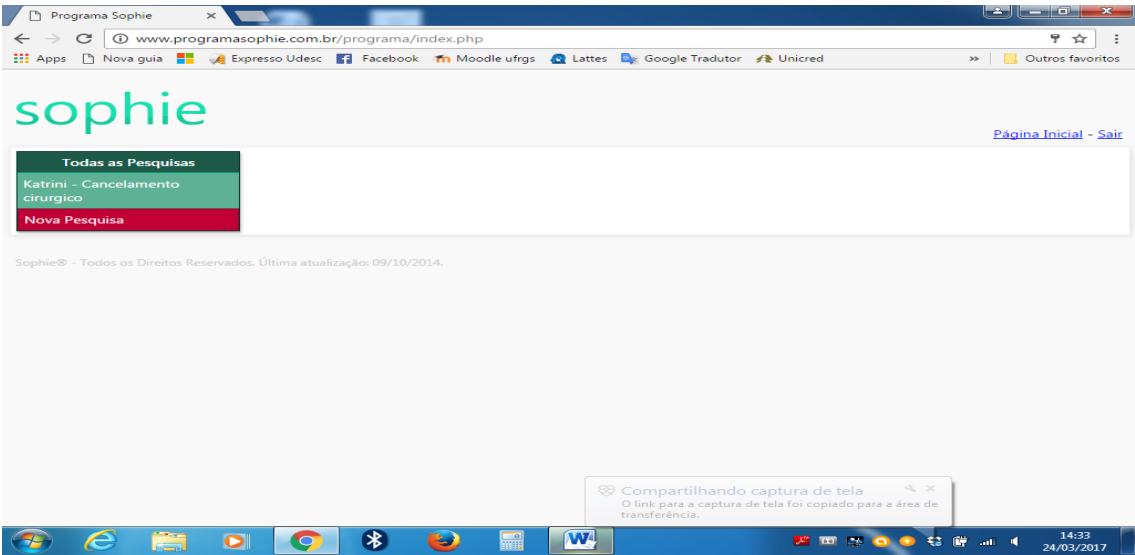


Figure 1. Sophie Program home screen. Chapecó (SC), Brazil, 2017.

After integrating the data, the user must click on "New Search" and register the methodological criteria of inclusion and exclusion of scientific articles of their integrative review, which will be used when

classifying articles, according to figures 2, 3, 4 and 5. However, after entering each criterion, you must click on "Add", in order for Sophie to record the criteria defined in the screen search.

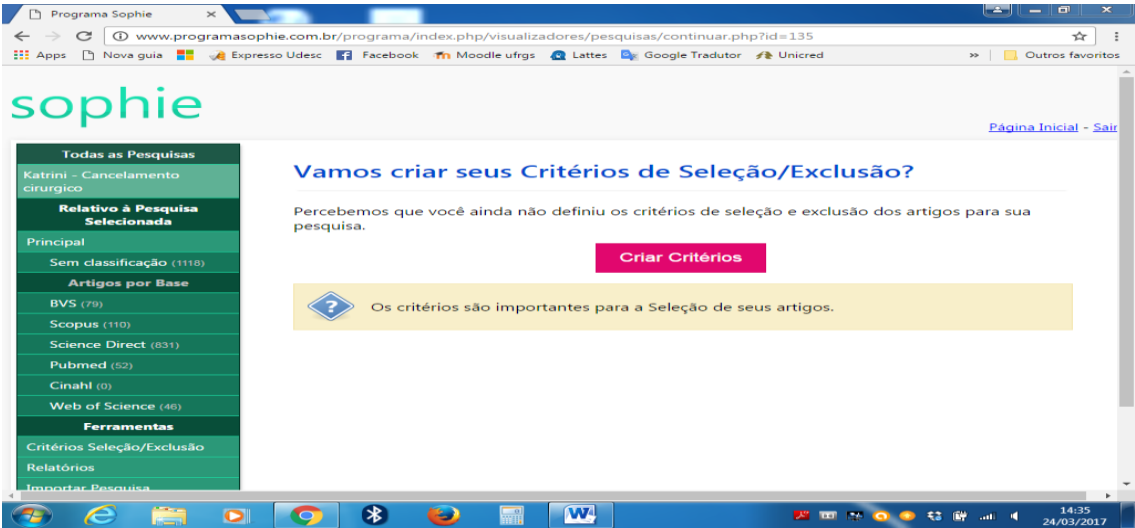


Figure 2. Initial screen of the selection / exclusion of texts in the Sophie Program



Figure 3. Screen for registering the selection / deletion criteria of texts in the Sophie Program. Chapecó (SC), Brazil, 2017.

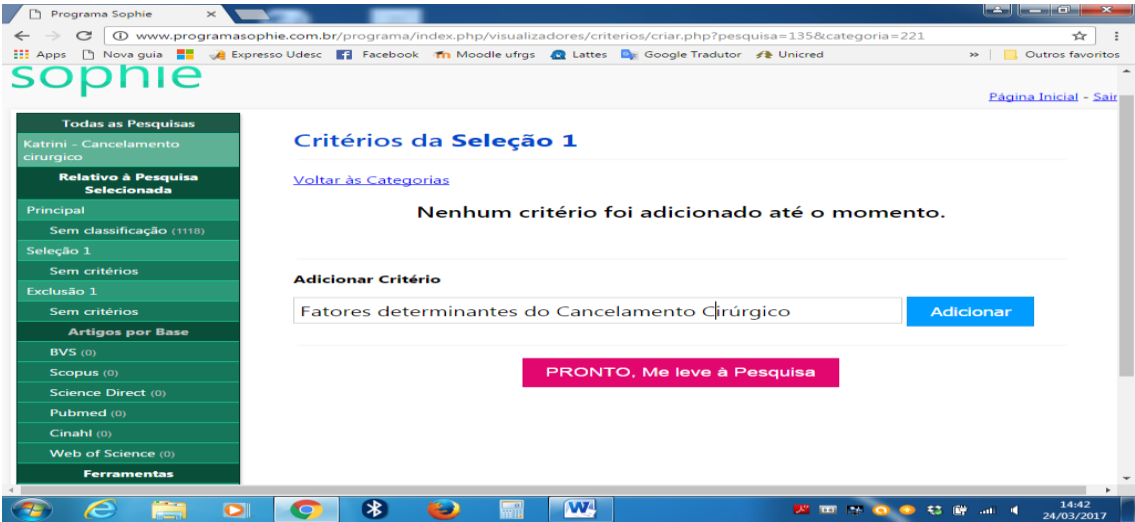


Figure 4. Screen for individual insertion of the criteria of selection / exclusion of texts in the Program Sophie. Chapecó (SC), Brazil, 2017.

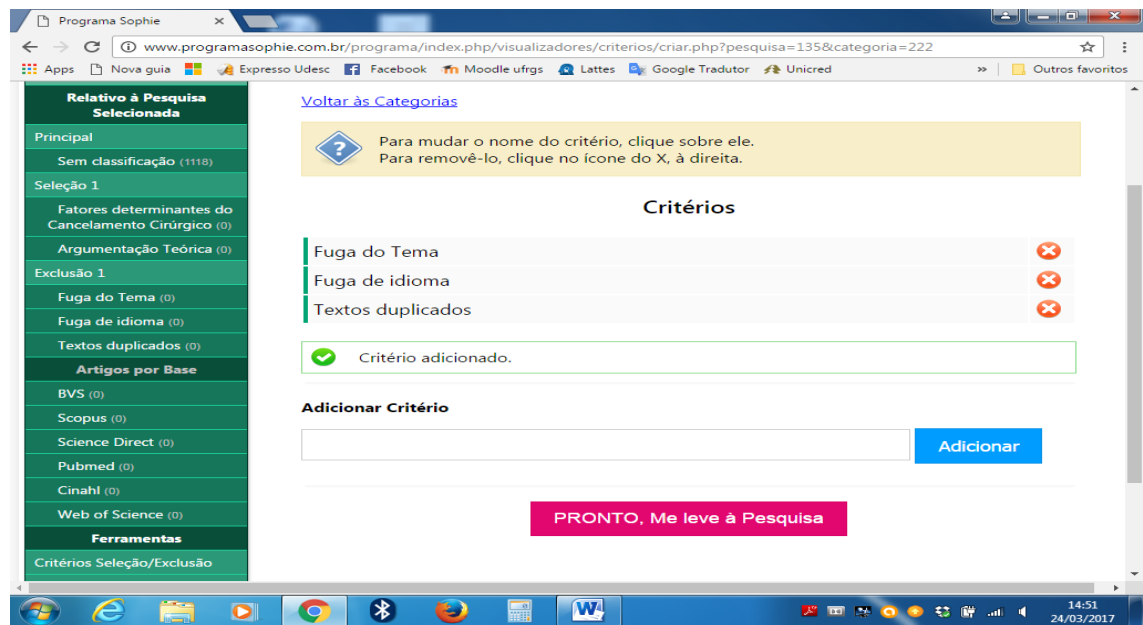


Figure 5. Screen with the selection / exclusion criteria defined in the Sophie Program. Chapecó (SC), Brazil, 2017.

Once the selection criteria (inclusion and exclusion) have been delimited, the user can access the classification lists of the articles, which are described below.

The lists displayed in the panel to the left of the program are: a main one, in which will be listed the articles not yet classified; a list for each methodological criterion of choice (inclusion and exclusion), in which the articles will be classified according to their respective criteria. The number of texts imported from each scientific database is available, in the left-hand column, in which, prior to the start of classification by the Sophie program, the sum of the texts by imported databases must result in the same number of texts in the tab "without classification".

The information about the articles displayed in this area comes from the RIS file, generated by the corresponding database that

was imported into the application. Therefore, the amount of information available can vary from article to article and between databases.

Figure 5 shows a "Ready" icon. Take me to the survey. " Clicking this icon opens a screen that says "Sort search". From this moment, the Sophie Program is prepared to present data of five articles per page and to store the information of classification of the articles as the user (researcher) to classify, being that the items referring to each article depends on the elements released by the scientific database in which the data was imported into Sophie. In this sense, figure 6 shows that no article was classified and represents the beginning screen for the classification of articles / texts.

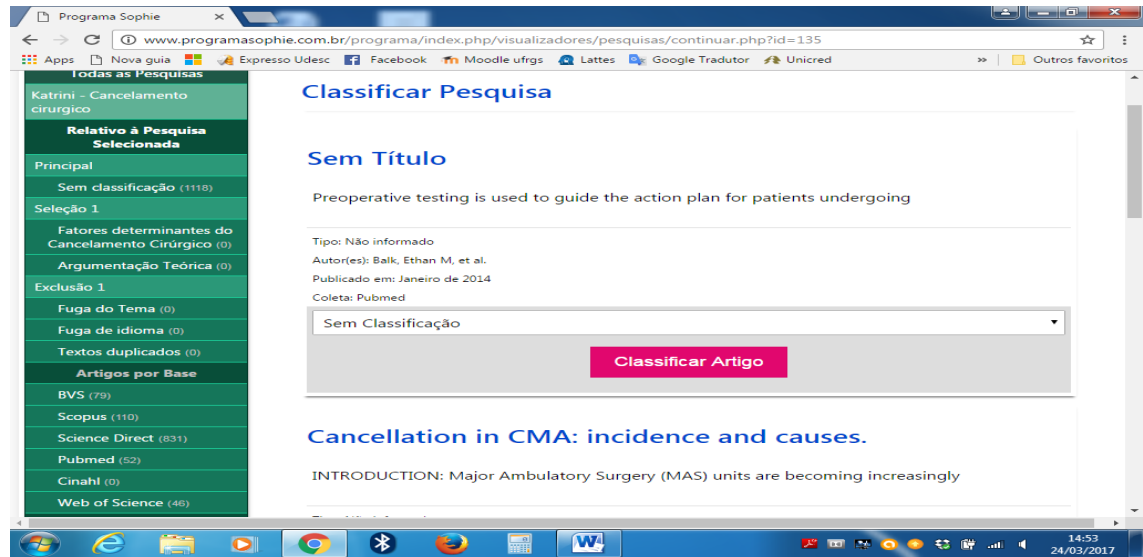


Figure 6. Start screen of the classification of texts in the Sophie Program. Chapecó (SC), Brazil, 2017.

The truth of the information and the amount of information available is the sole responsibility of the database that generated the RIS file. The Internet application does not correct or verify the information that the

database passed, through the RIS file. Content verification is the responsibility of the user when reviewing articles.

The Sophie Program has, by default, five articles per page, with the following

information: language, title, abstract, type of document (eg article, thesis, newspaper), authors, date of publication, and database the manuscript was located. Then, after the abstract, an icon called "Read Article" may appear, according to figure 7, which will allow, the user, to read the entire article at the address entered by the database.

It is not all the databases that provide the address for reading the complete article. For this reason, the "Read Article" icon will not always be available in the Sophie Program.

Such an icon will only be available if the primary database informs the access address.

At the end of each article displayed, there is a space reserved for the classification of the article, according to the inclusion and exclusion criteria registered by the user. After sorting the article, it will no longer be available in the main listing (Unclassified), but listed according to the previously classified criteria, which makes it easier to find the text later, as shown in figure 7.

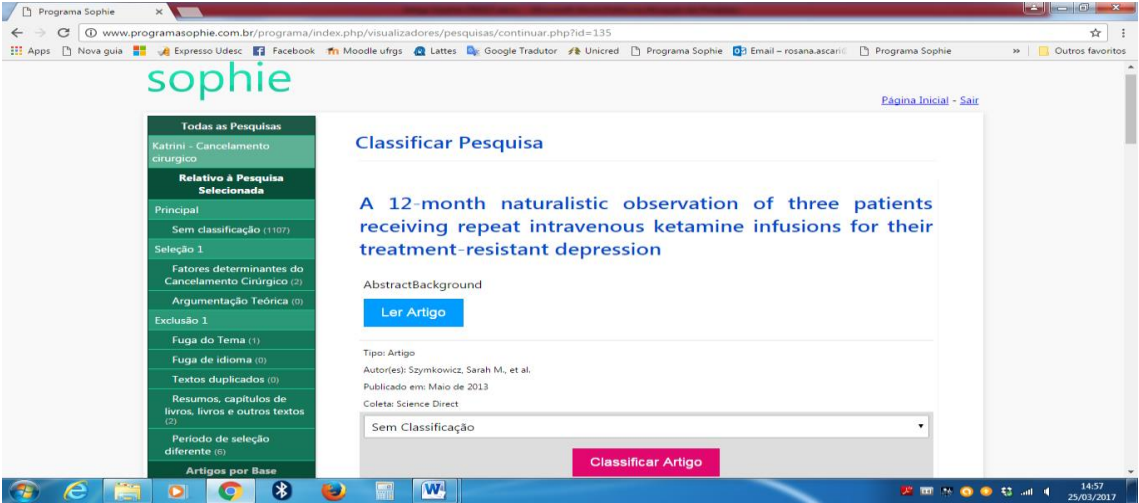


Figure 7: Screen for classifying texts in the Sophie Program. Chapecó (SC), Brazil, 2017.

The user will be able to navigate between created lists (selection / deletion) and the main listing in the left column, as needed, also, being possible, to change from one classified article in a list to another at any time.

Finally, there is a tool in charge of showing the progress reports from the classification of the manuscripts to the integrative review. In the reports, the following information can be seen: a) quantity of article by classification, including those that have not yet been classified; b) quantity of article by database; c) quantity of articles per language; d) quantity of articles by type of document.

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