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INTRODUCTION TO THE SCIENTIFIC METHODOLOGY

COVID-19 and research methodology

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COVID-19 is a recently described disease. About six months after its recognition, a large number of articles on the topic have been published. Agencies dedicated to research and healthcare, databases and journals have released access to the medical literature on COVID-19, at no cost to the user[1]. This initiative was useful, but science does not advance in leaps, despite the legitimate need for results. In this context, we see papers published in renowned journals, and then removed, in addition to those, mistakenly interpreted by the lay press. As expected, this can confuse the doctor who finds himself immersed in information that is not always reliable. This fact again brought to the fore the need for the doctor to know how to search for reliable sources of information on biomedical issues.

This paper aims to describe some search strategies used in the PubMed portal that facilitate the obtaining of bibliographic references directed to a specific search. Although this is not the purpose of this paper, we also recommend other search engines, as described below:

Embase: is a database similar to PubMed, although more linked to the European literature[2]. Access is by institutional subscription and cannot be accessed individually: https://www.elsevier.com/solutions/embase-biomedical-research

Cochrane Library: It is a database that includes Cochrane reviews, which are systematic reviews and metanalyses that summarize and interpret results from a set of medical researches. The authors of these reviews are all volunteers. The work is carried out according to strict standards and peer-reviewed. It is an essential resource for research in evidence-based medicine[2]. It can be accessed at https://www.cochranelibrary.com/

Trip database: It is a search database that also allows the user to search for quality research in order to base clinical practice on the best available evidence[3]. Uses resources similar to PubMed. It can be accessed at: https://www.tripdatabase.com/

BVS: The Virtual Health Library - BVS MS, is a division of the Library of the Ministry of Health where bibliographic information produced by the Ministry of Health of Brazil is published[4]. It is also possible to access international databases, such as Medline and Lilacs. Available at http://bvsms.saude.gov.br/

Medline (Medical Literature Analysis and Retrieval System Online): It is a database that includes access to bibliographic references and abstracts of journal articles focused on health. In this database, more than 5,200 journals are indexed in about 40 languages[5]. Medline is available on the PubMed portal, and through the Virtual Health Library (http://brasil.bvs.br/)

Below we describe some search strategies for searching bibliographic references in PubMed. We use the images obtained in examples of possible research that could interest our daily practice.

PubMed is a free resource from the National Library of Medicine of the United States of America (USA). It provides resources such as links to websites with full text and filters for selecting queries, among others. According to data released on its own pages[6], approximately 2.5 million users are registered daily.

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Simplified search

A simple way to search is to use the search box (Search Box).

When opening the website, we can fill in, for example, the term COVID-19 (figure 1).

We see that 27,563 papers are shown (figure 2). To make our research feasible, we must filter the findings. For this, PubMed provides us with the following filters, located to the left of the page: text availability, article attributes, article type, publication date, language and age. It is possible to find other filters by clicking on "additional filters", they are species, sex, subject and journal.

If, for example, we want to read about treatment in children, we can choose the filters: article type (Clinical trial and Randomized controlled trials) and ages (Child: birth-18 years). Which reduces our search to 4 articles (figure 3). It is important to note that every time a new search is performed, it is necessary to disable the selected filters. If there is any question that there is still an active filter, just check the location indicated in the larger rectangle highlighted in figure 3.

Another interesting feature available on PubMed is the indication of similar articles (similar articles) to the one you selected. For example, in the research presented in figure 3, one of the articles retrieved was "The management of emergency spinal surgery during the COVID-19 pandemic in Italy". When we click on the title, we will see a page with some information, such as, title, author, summary (figure 4) and below we can find the option (similar articles) similar articles. (Figure 5).

Search by author/journal

If you are interested in finding a specific author or journal, just type the name in the search box. In the example, we searched for Garner P, which retrieved 402 papers (figure 6).

For the example of the journal, we searched for "Pediatrics Journal" (figure 7), which produced 3,263 articles. However, it is important to note that if the journal is not indexed to Medline, its articles will not be located.

CONCLUSION

Many resources are available for the doctor to stay up to date. It is necessary to be clear about what our questions are in order to seek the best answers and for the patient to get the best benefit from scientific development.

It is worth remembering that, regardless of the database or the relevance of the journal, when reading the selected articles we must make our assessment of the extent to which their results can be generalized and applied to our current purpose. It is also essential that we make a critical analysis of the quality of these articles. Therefore, we recommend reading the series of articles by Guyatt GH, Sackett DL, Cook DJ et al .: Users' Guides to the Medical Literature[7], published in JAMA in the 1990s and now also available as an e-book.

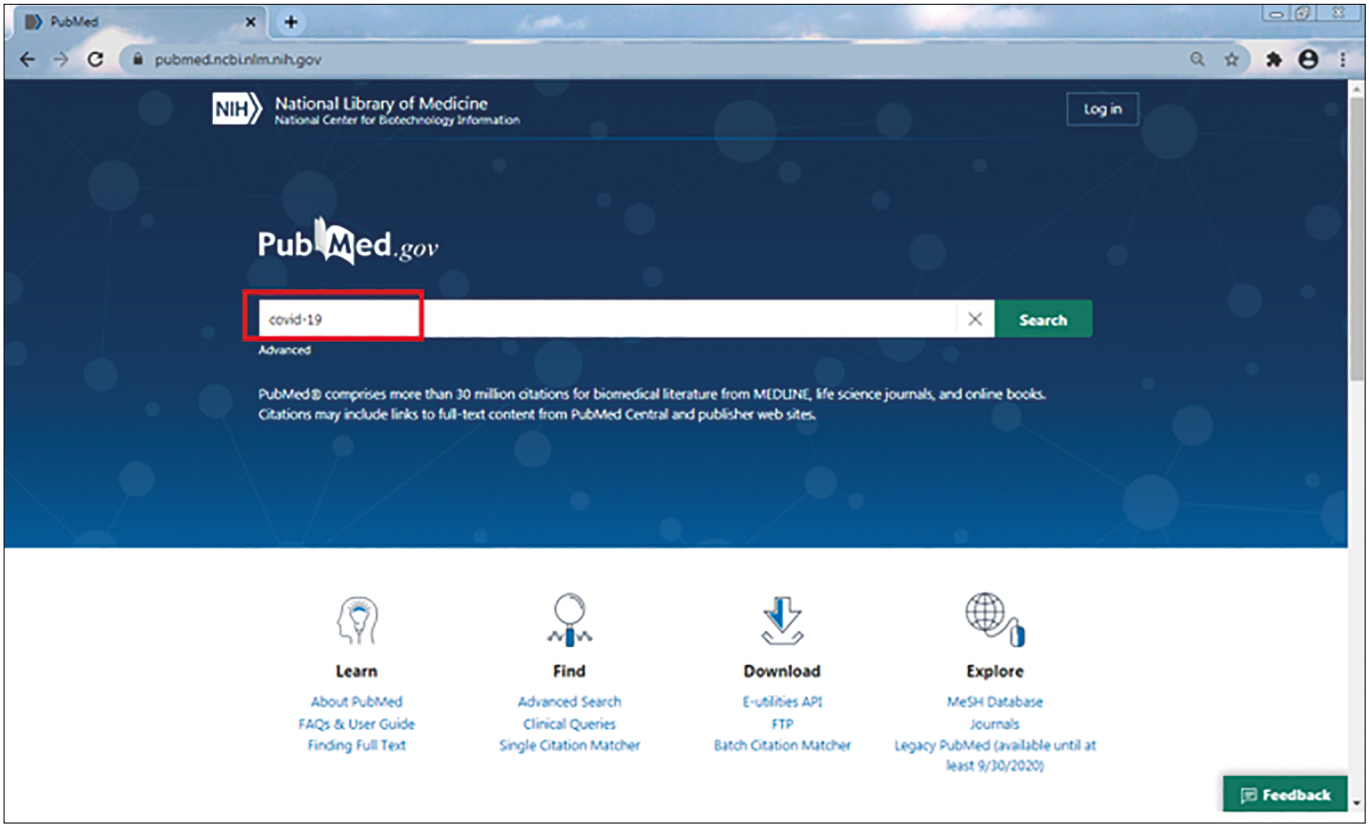

Figure 1. Print Screen of the Pubmed page.

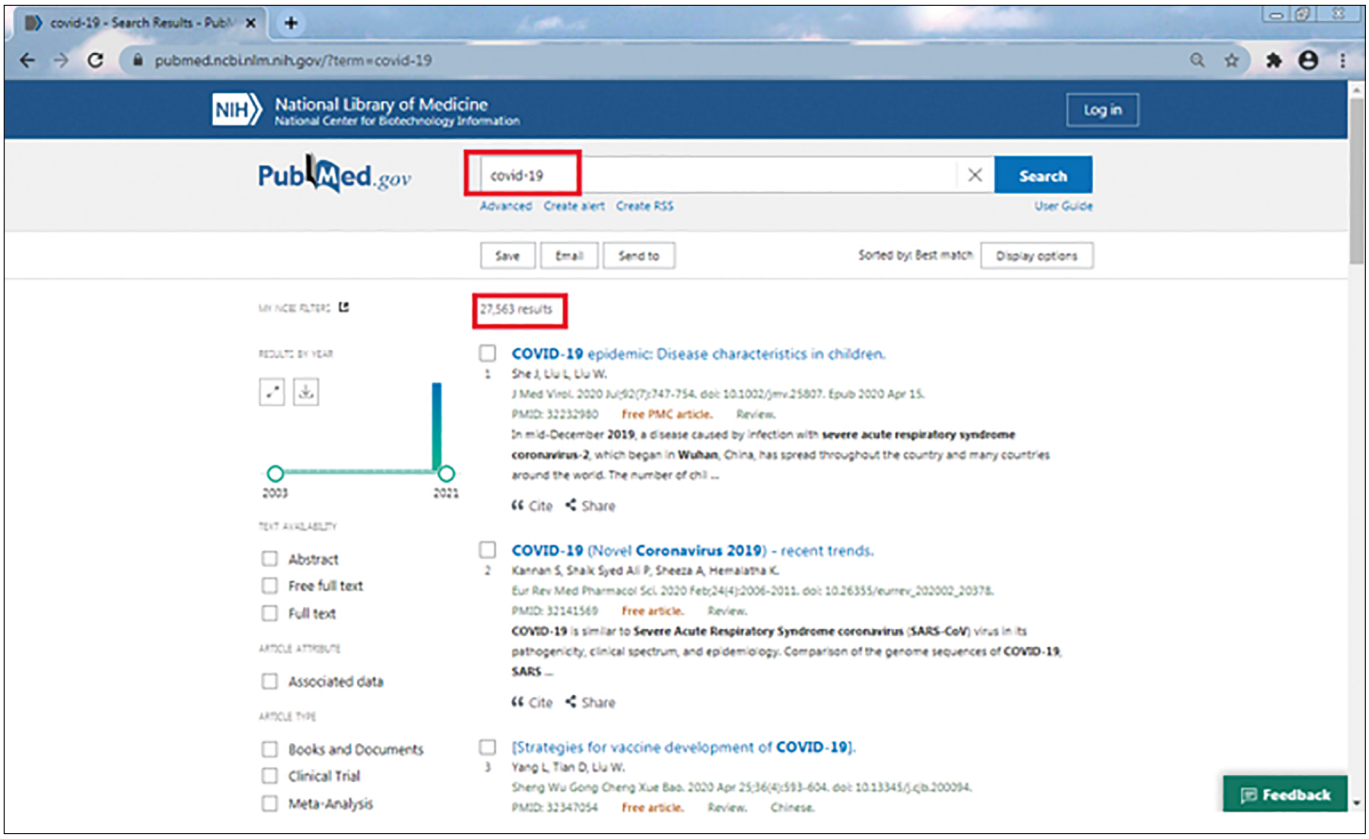

Figure 2. Print Screen of the Pubmed page.

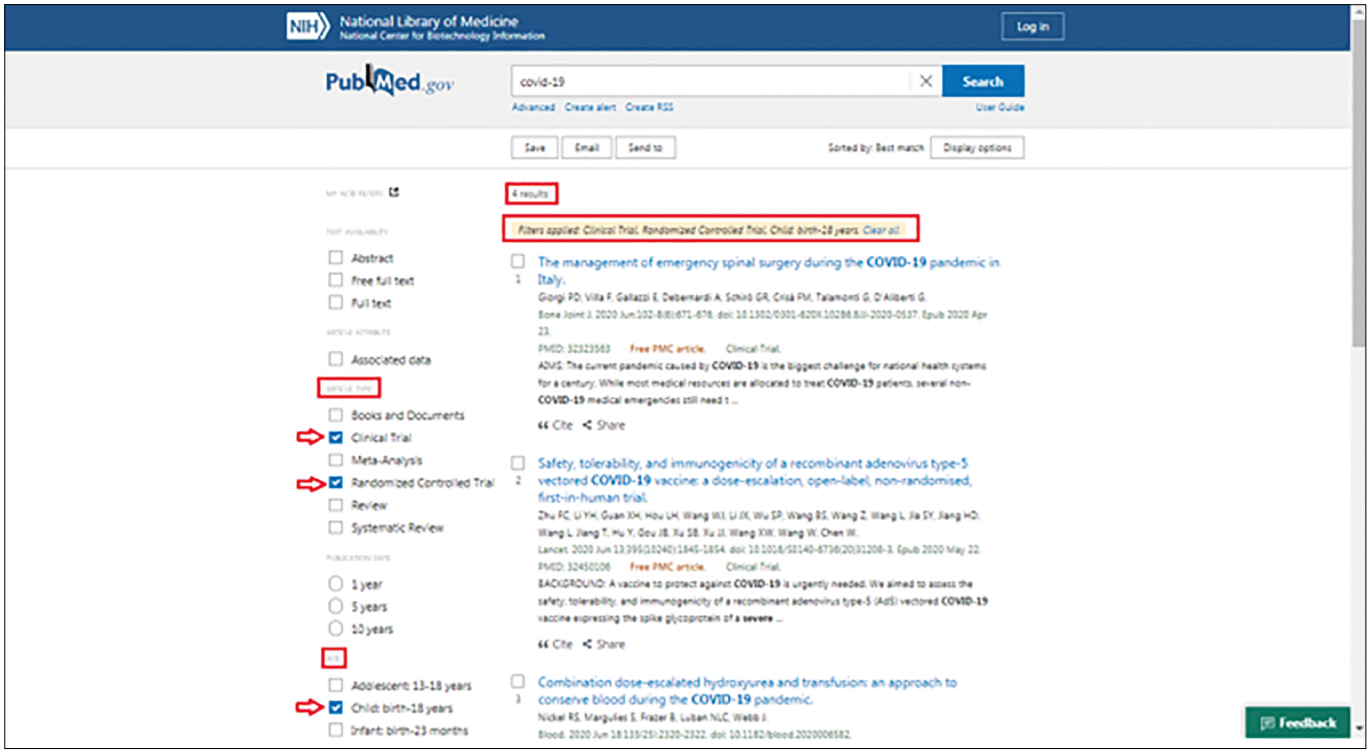

Figure 3. Print Screen of the Pubmed page.



Figure 4. Print Screen of the Pubmed page.

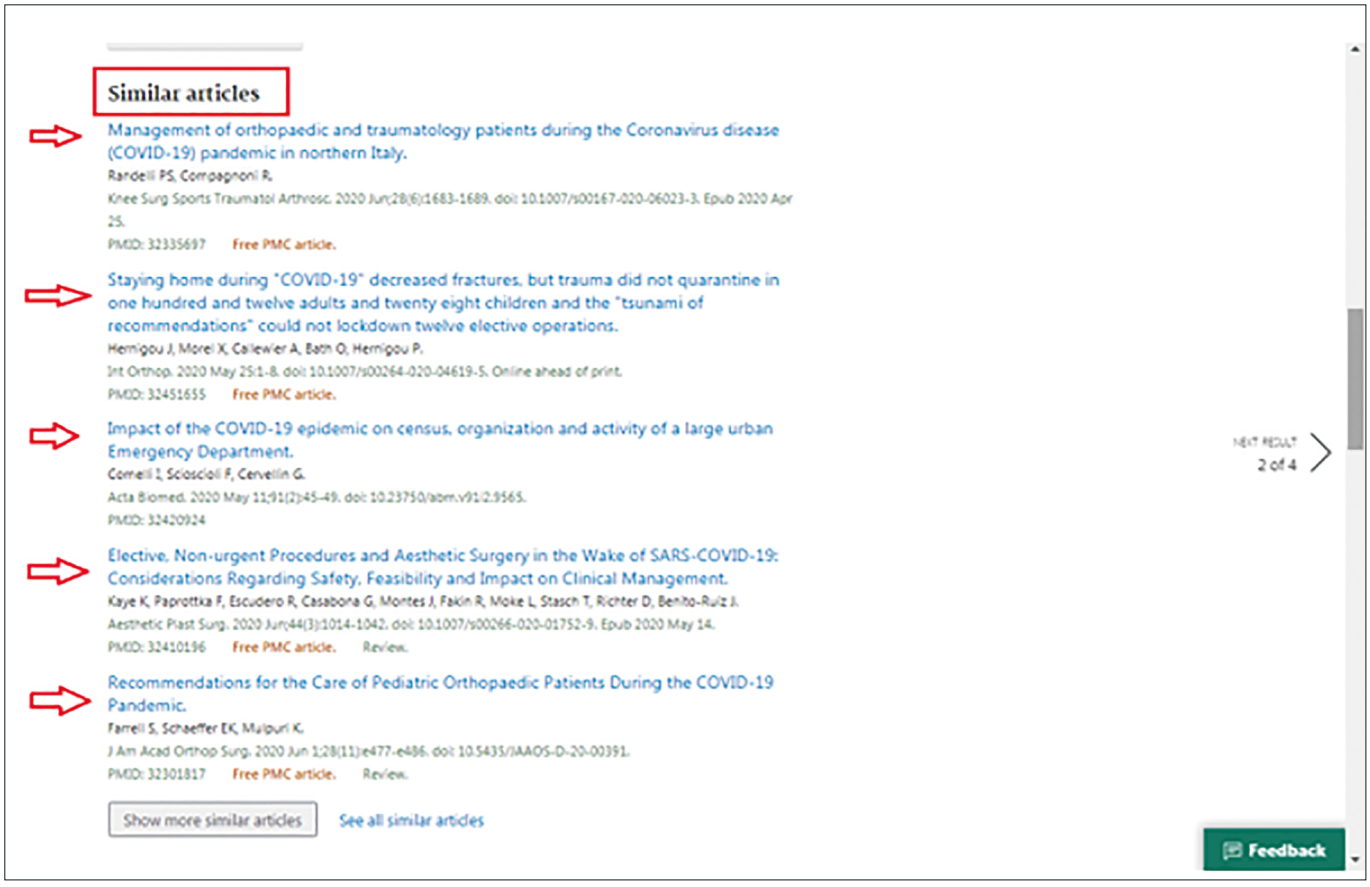

Figure 5. Print Screen of the Pubmed page.

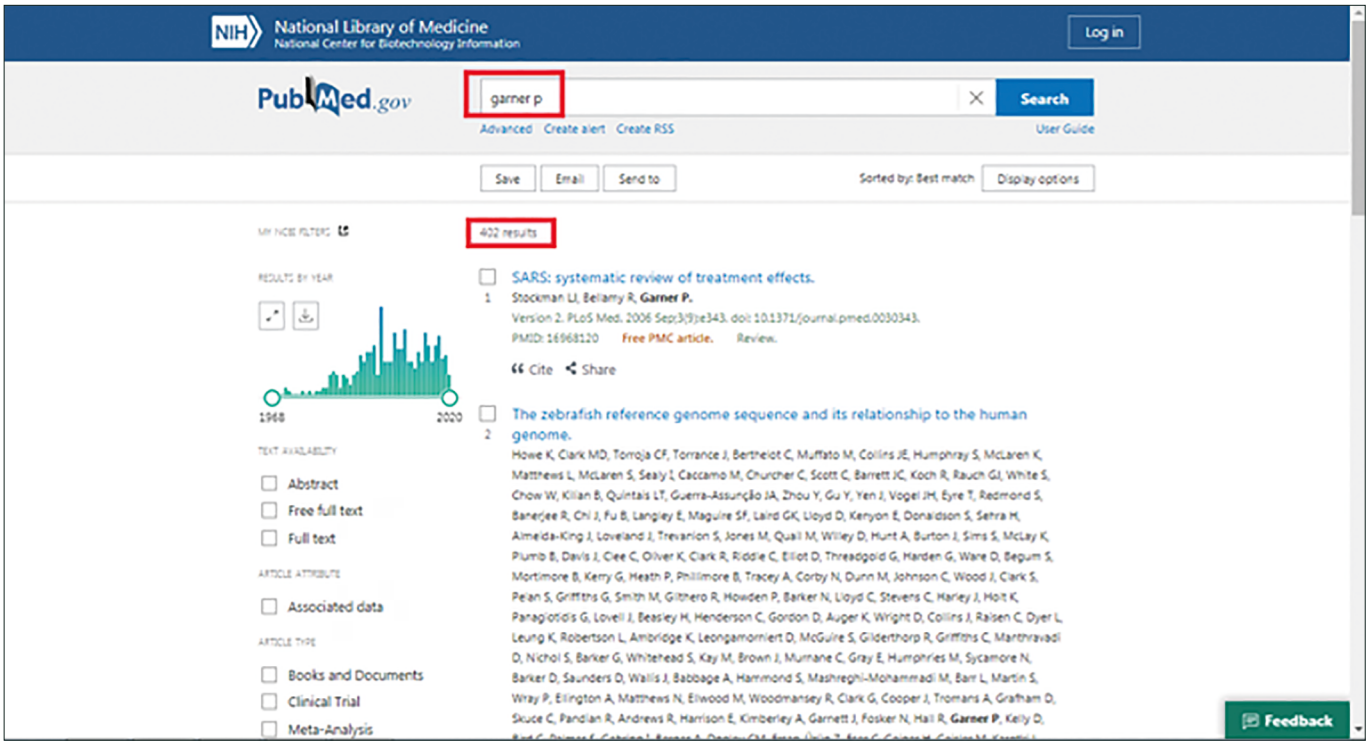

Figure 6. Print Screen of the Pubmed page.

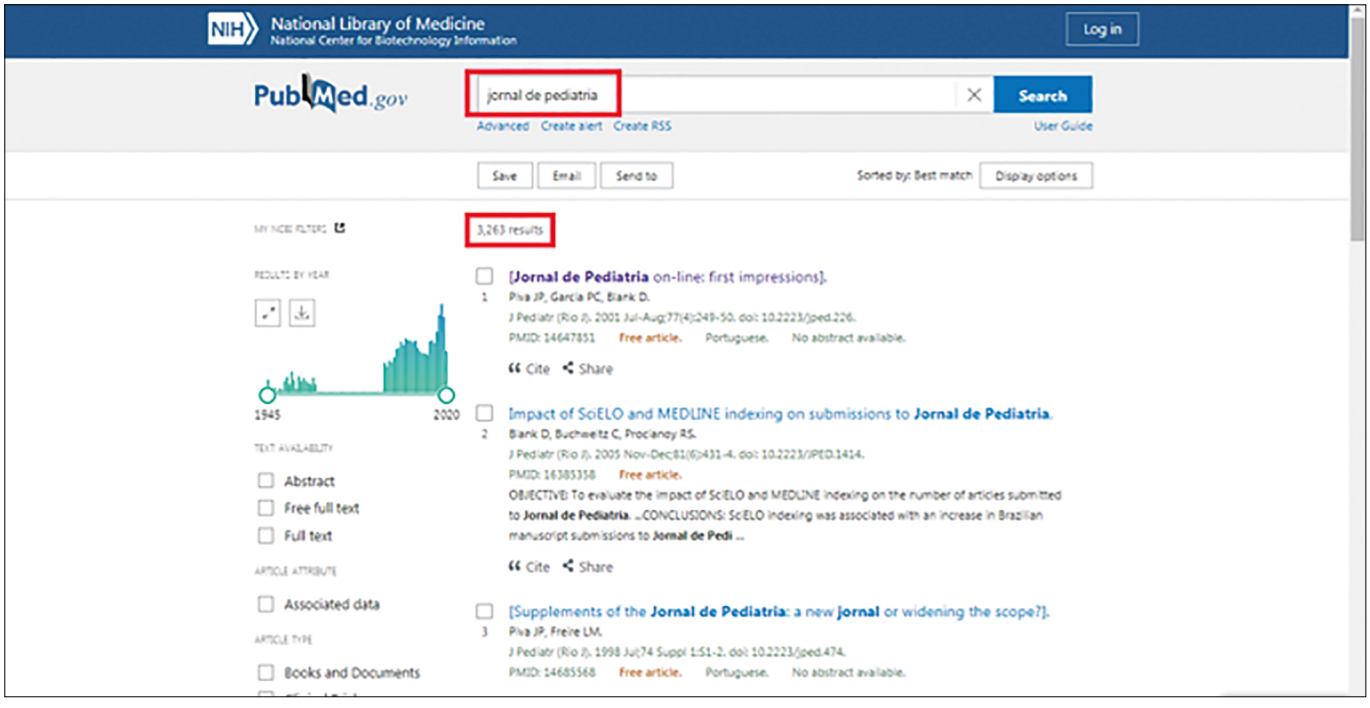

Figure 7. Print Screen of the Pubmed page.

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