

ISCO3 Library Report

INTRODUCTION

The ISCO3 library was created to maintain and update an electronic database of scientific articles, documents, publications on physical and electronic media and videos related to ozone therapy. Since 26 June 2011, this task has been carried out by one of the ISCO3 member, Professor Gregorio Martínez Sánchez.

The library contains items that are not available in other databases (PubMed, Embase and Scopus), as well as documents generated by the ISCO3 scientific committee itself. Currently, as of June 2023, the library has 3957 items.

Another purpose of this library is to make available to ozone therapists, researchers and people interested in the subject, all the available material, if the copyright allows it. All this to provide the best scientific evidence available to all the people involved in the development and practice of ozone therapy, so it should be a reference tool.

Access to this database is designed for two groups of users, those with advanced knowledge of electronic databases (PubMed, for example), and those without such knowledge.

The platform on which this library is hosted is Zotero, which was born as a bibliographic management programme, free to use and with a limited storage capacity at no cost for registered users. Among the functions of this manager is the possibility of using auto-generated tags and the possibility of adding them manually, to facilitate the management of the elements. It also allows the visualization of the abstract, the inclusion of annotations, and the generation of links between the different articles, by subject, author, or by the characteristics determined by the user. This metadata can be modified and exported between different managers or to other programmes.

The same platform has software available on the most widely used computer systems (Windows, Mac, Linux and even iOS), and with the possibility of integration with the main web browsers (Firefox, Chrome, Edge and Safari), with the possibility of synchronising the data stored between the different applications. Along with the above, the ability to integrate Zotero with office suites (OpenOffice and Microsoft Office, including its latest version and LaTeX), for the management of references in the main scientific journal styles (Chicago, MLA, APA, Vancouver, etc.), and the possibility of integrating it with other software (through plugins) such as Obsidian, Wordpress, or statistics software (R/Rstudio), as well as allowing dissemination groups. This means that the choice of Zotero to host this library offers multiple favorable possibilities for the dissemination and management of information.

However, the use of the library can be severely limited by other factors that have nothing to do with the platform, but rather with external aspects. The first is the limitation that users may have in understanding how Zotero works. Although there is a lot of documentation (and even video tutorials) to learn how to use all Zotero's functions, the

learning curve can be an obstacle for new users, or for those who have little time to review the most relevant aspects of performing a specific search. A solution to this problem will be discussed in the final section of this document.

The second problem is the way in which the different elements are organized within the library. The ISCO3 OZONE library (the name that identifies the library within the platform) has a meticulously organized structure, which, however, is not intuitive to explore, and on the other hand, several of the library's elements do not have the metadata that would allow them to be "previewed" and connected to other content.

Before exposing the solutions to this second problem, it is pertinent to make an analysis of the contents of the library, to be able to dimension the state of the library and to present the possible solutions, as well as the time margins for the implementation of these, as well as other final comments with the aim of improving the library.

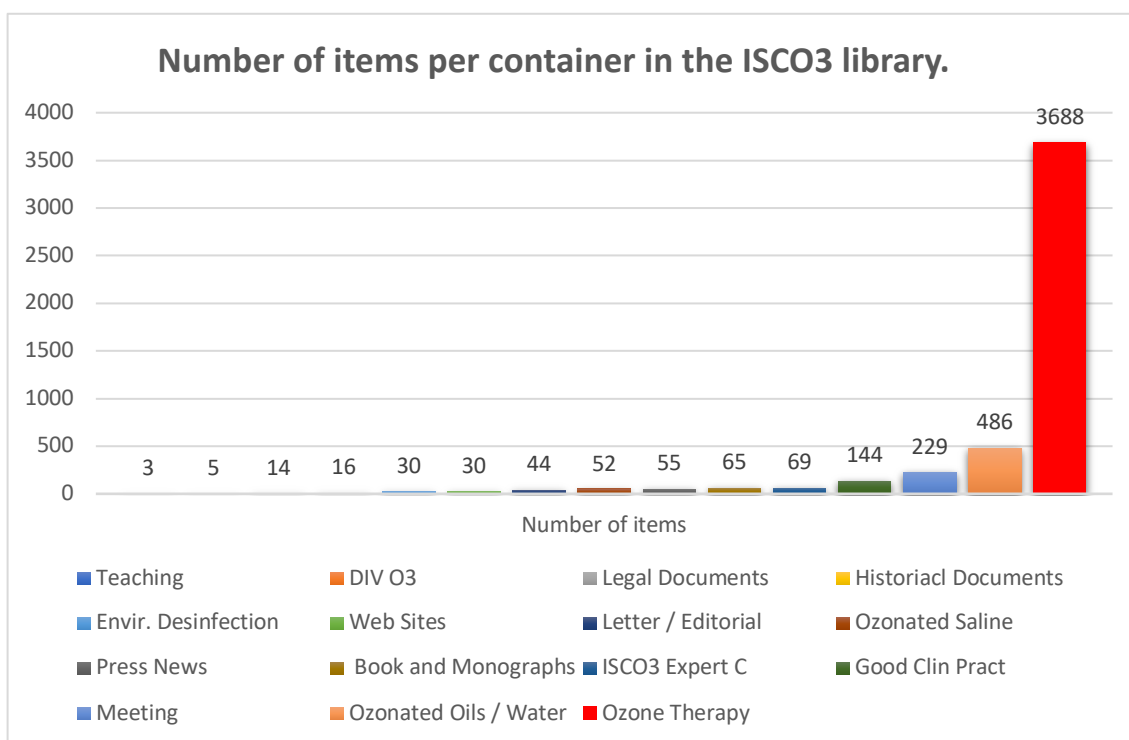
STRUCTURE OF THE LIBRARY

On the Zotero platform, the visual organization follows the folder structure, like that of the most widely used operating systems. Within the folders, it is possible to organize in subfolders, again following the scheme of the operating systems.

The initial classification by subject, as well as the number of elements contained in these folders, are as follows:

- Book and Monographs (65)
- DIV O3 (5)
- Envir. Desinfection (30)
- Good Clin Pract (144)
- Historiavl Documents (16)
- ISCO3 Expert C (69)
- Legal Documents (14)
- Letter / Editorial (44)
- Meeting (229)
- Ozonated Oils / Water (486)
- Ozonated Saline (52)
- Ozone Therapy (3688)
- Press News (55)
- Teaching (3)
- Web Sites (30)

Graph N°1: Number of items per container in the ISCO3 library.



It is observed that the greatest number of elements of those that make up the library are found in the container destined for ozone therapy. This folder/container has subdivisions, which are shown below with the number of elements in each one:

- Physico Chemistry (8)
- Engineering (24)
- Veterinary (74)
- Pre-clinical (785)
- Clinical (2792)

The "Clinical" section also has subdivisions, corresponding to 30 clinical topics. Of these topics, one has no elements ("Psychiatric Disorders"), and 5 others have less than 10 elements ("Geriatrics", "Pediatrics", "Cost-effectiveness", "Proctology", and "Sport"). The elements are shown in the table below:

Table Nº 1: Number of items per Clinical topic.

Clinical Topic	Nº of elements
Psychiatric Disorders	0
Geriatrics	1
Pediatrics	2
Cost-effectiveness	6
Proctology	9
Sport	9
Dose Resp	15
Genitourinary Disorders	15
Aesthetics	17
Meta Analysis	21
Kidney / Urinary	27
Anti Aging / Antioxidant	28
Hepatic / Biliary D.	30
Ear, Nose, Throat	31
Pulmonary Disorders	31
Gastroenterology	40
Ophtalmologic D	51
Surgery	52
Endocrinology, Metab.	71
Immunol. Allergic D.	71
Toxicity / Side Effects	73
Gynecology / Obstetrics	85
Cardiovascular	130
Neurologic Disorders	131
Hematology, Oncology	153
Infectious Diseases	205
Dermatology	210
Review	240
Dental and Oral	310
Musculoskeletal D.	597

The topic with the most items is "Musculoskeletal Disease", followed by "Dental and Oral". In relation to infectious diseases, there are 3 sections referring to COVID-19, with 77 articles (not reflected in the table). It should be noted that reviews and meta-analyses are not classified according to subject area.

ANALYSIS BY CONTENT

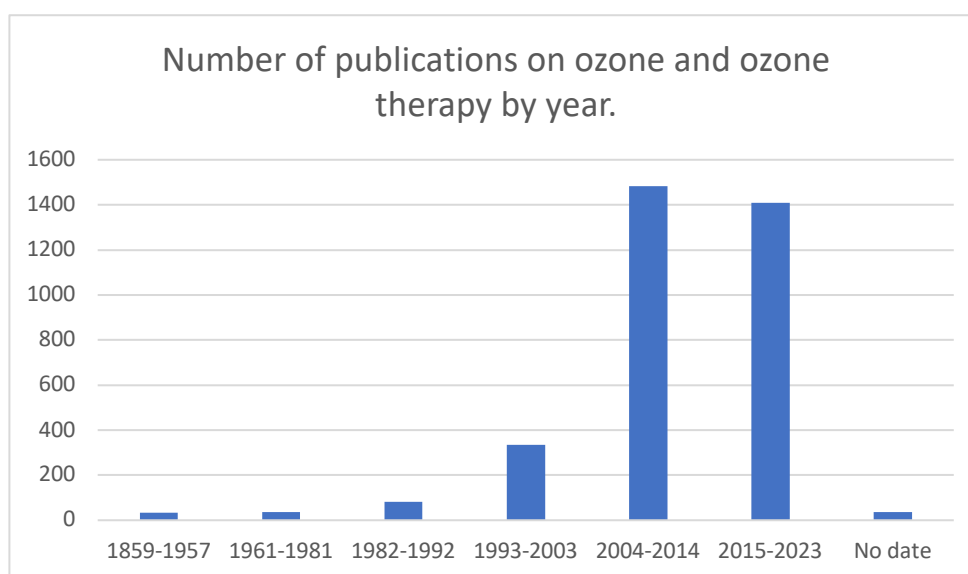
In a second analysis of the library, now by type of content, it is determined that the main type of item is publications in scientific journals. These publications are very heterogeneous, so I have allowed myself to continue with the analysis of different aspects of these, as well as of the other types of content that make up the library.

As mentioned, most of the items in the library correspond to scientific journal articles, so the first analysis has been done on this type of items.

Firstly, an attempt was made to group the articles according to their date of publication. This allows an estimate to be made of the importance of a topic in the scientific community over the years, and allows trends to be identified, an analysis which has not been carried out, but which will be considered for future analysis.

Figure 2 shows the number of publications per year. Groupings have been made to facilitate the process of visualizing the graph.

Graph Nº2: Number of publications on ozone and ozone therapy by year.*



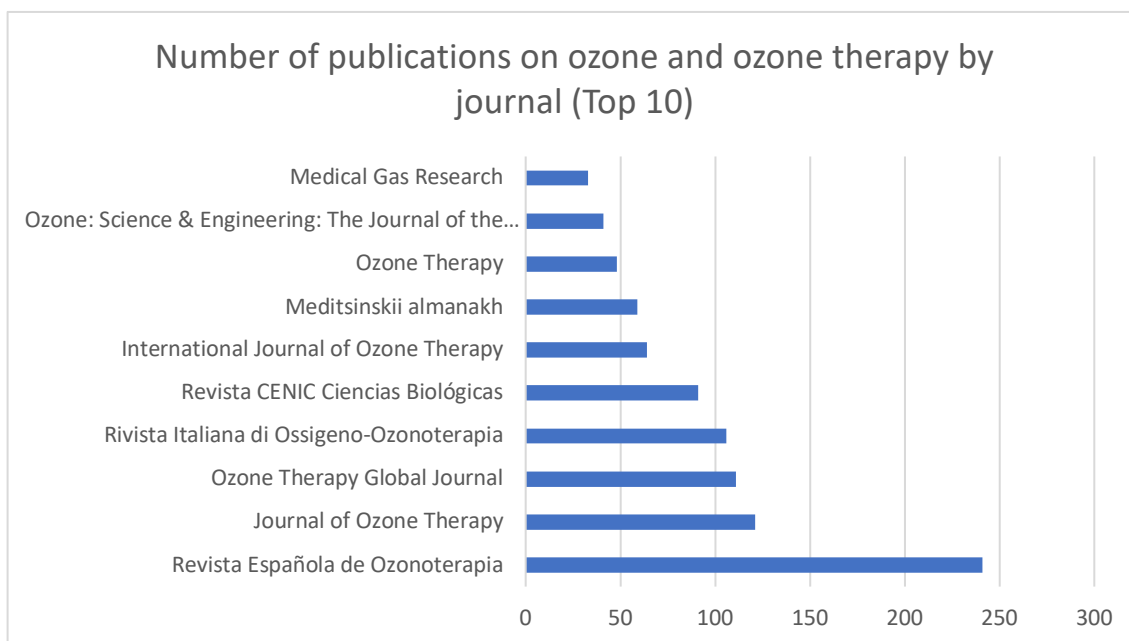
The first group of articles were published from 1859 to 1957 (33 articles), the second group is from 1961 to 1981 (36 publications), the third from 1982 to 1992 (82 articles), the third from 1993 to 2003 (336 articles), the fourth is from 2004 to 2014 (1482 articles), the fifth period is from 2015 to 2023 (1410 articles), and the sixth group are articles (35 in total) that have no date indexed in Zotero, for a total of 3414 items indexed as scientific articles published in scientific journals.

Secondly, we have reviewed the journals where these articles have been published. Of the journals where the articles have been published, 1252 have been identified. In 101

*: The grouping into the first two groups has been done arbitrarily, due to the low number of articles, and to facilitate the visualization of the graph.

articles, the name of the journal was not identified. Graph N°3 shows the 10 journals where the most publications have been made.

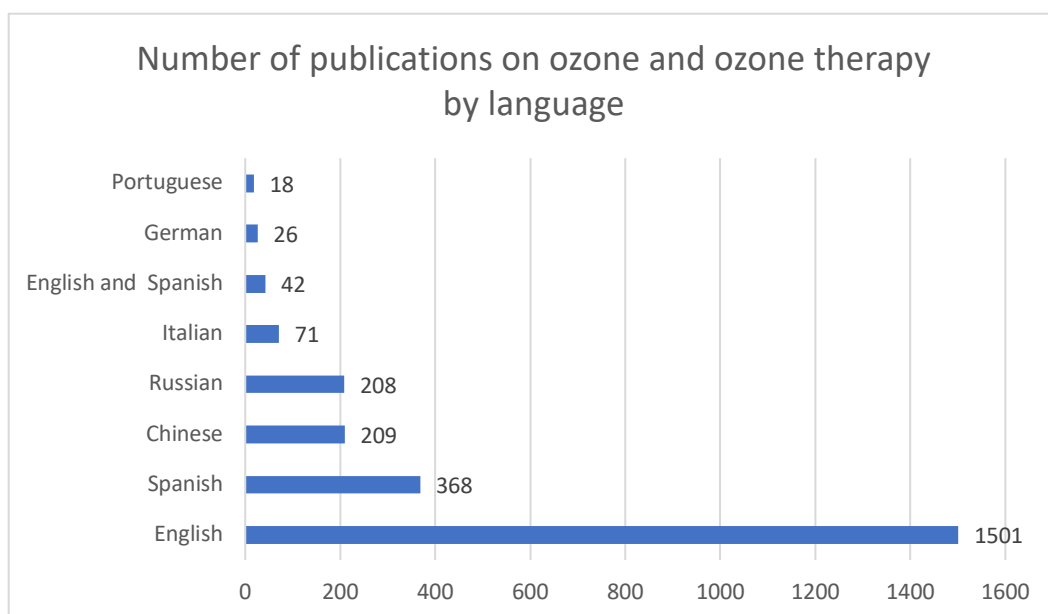
Graph N°3: Number of publications on ozone and ozone therapy by journal.



It is observed that the main journal is the Revista Española de Ozonoterapia (241 publications), followed by Journal of Ozone Therapy (121) and Ozone Therapy Global Journal (111). It should be noted that there are other prestigious journals such as Lancet (4 articles), BMC journals (6 articles) or Plos One (5), to name a few.

Regarding the language of the publications, the most widely used language is English, as is the norm in scientific publications. The second most used language is Spanish, followed by Chinese and Russian. Publications in 22 languages have been identified in the library, but there are 923 publications where the language is not identified. By frequency, it could be assumed that the majority will be in English, but they have not been checked for any other language than the 22 identified. Graph N°4 shows the distribution of publications by language, but only the 7 most important ones have been taken, given that for the remaining languages, the number of publications is less than 10 articles.

Graph Nº4: Number of publications on ozone and ozone therapy by language.



OTHER ITEMS

The other items contained in the ISCO3 library, including books, theses, ISCO3-generated documents, journals, presentations and internet resources, have been reviewed less comprehensively.

BOOKS

There are 40 books catalogued, and 10 book sections. The oldest book is from 1979, and the newest is from 2021. One book has no publication date. In terms of languages, English is the most used (35) followed by Spanish (5). As mentioned in the introduction, access to these resources is determined by the intellectual property restrictions of each book.

THESES

The library hosts 12 theses, produced between 2004 and 2018. The most used language in the theses has been Spanish (4) followed by English and Portuguese (3 each), and German (2).

TECHNICAL DOCUMENTS

Under the label documents (218), there are mainly documents produced by ISCO3 (141). The documents are mainly recommendations and guidelines. Of the total number of documents, only 78 (36%) have a viewable file, of which 49 (22.5%) belong to ISCO3.

JOURNALS, PRESENTATIONS AND REPORTS

In this category, you will find 5 non-scientific journal articles, 5 presentations and 1 case report. Of these items, 7 are in English, 3 in Italian and 1 in Spanish.

INTERNET RESOURCES

Internet resources are divided into Webpage, Forum Post, Blog Post, TV Broadcast, Video Recording. Several of these elements have links that no longer lead to the original elements.

TAGS

Of the total content in the ISCO3 library, there are 1557 (39.4%) items containing tags. Of this total, when examining only publications, 1545 (47.1%) have tags. Of the Technical Documents section, generated by ISCO3, only one contains tags. The same is true for the journals and presentations section, with 10 items, only one of which contains tags.

RECOMMENDATIONS

Having done the analysis of the structure of the library and its contents, I will now make some recommendations to improve the usability of the library for interested professionals, scientists and/or researchers.

In the introduction to this document, it was pointed out that there are two major problems for optimal use of the ISCO3 library. The first is the difficulty for users who are not used to the Zotero platform. However, and considering that the ISCO3 library is intended to help professionals in the search for articles or documents that help in their clinical practice, it is necessary to consider the development of information retrieval skills from databases (PubMed, Embase or Scopus, for example) as fundamental in order to maintain a clinical practice in accordance with the best scientific evidence available.

Ozone therapy is not exempt from being the target of hoaxes, falsehoods and detractors, whose analysis is beyond the scope of this document, but it also has the disadvantage that there are people who through ignorance and/or irresponsibility, misuse the techniques, with terrible consequences for the therapists who use ozone, and even lethal consequences for patients who in the search for alternatives to the ailments that afflict them, fall into the hands of the former.

Also because of this, we have the obligation as professionals who choose to train and incorporate ozone therapy in our clinical practices, to expand our ability to argue in a solid and reasoned way, the application of this and any other therapy, in accordance with the "state of the art" of the field of our activity.

Having said that, we must encourage therapists not only to be trained in the formal techniques of ozone therapy application, but also to be interested in keeping up to date with the best practices and recommendations that this scientific committee generates, for their application in their professional practice.

In order to translate all of the above into concrete actions, I suggest the elaboration of online workshops for the students of the "Ozone therapy and ozone-induced growth factors" diploma course as an additional activity within the training, based on specific tasks in the use of the ISCO3 library, as well as some basic features of the Zotero platform, which can improve performance in specific aspects such as the final work of the diploma course. The proposal to carry it out with diploma students is because they have the motivation to use the information with a very clear and useful purpose during this training. This does not exclude that there may be other interested parties within the community, but possibly the focus should be on the basic knowledge necessary for a better management of the library.

The second problem mentioned in the introduction has to do with the way the ISCO3 library is structured. There are several points to be made in this respect, without detracting from the enormous effort made by Professor Gregorio Martínez Sánchez in the organization and maintenance of this library.

In a general library-wide way, it should be mentioned that the lack of metadata is a problem that makes it difficult to browse the documents, regardless of the way they are classified in the different folders (containers). The most important element is the impossibility of viewing the abstracts of the documents, regardless of whether they are

accompanied by files (mostly PDF) or not. The display of abstracts reduces the time it takes to open other windows (if it is in the native programme) or tabs (if the display is done in the browser).

As an example, when carrying out systematic or semi-systematic reviews, the initial evaluation of the articles to be included in the reviews is carried out through the contents of the abstracts.

Another problem with the lack of metadata is that one of the features that makes Zotero a very versatile tool is the use of tags. Although they do not replace the Keywords of biomedical databases, tags increase flexibility when searching, generating relationships, and sorting content. Many of Zotero's advanced features include tag management. The importance given by the Zotero platform development community to tags is that they allow content to be filtered without the need to separate the content into different folders (containers), and they also improve the graphic interface, which is quite poor compared to other paid platforms of the same type. This is why the absence of tags in the library has been emphasized in the document.

Another Zotero feature that is underutilized in the library is the ability to post notes. Notes can be placed at the beginning of the folder containing a particular subject, serving as a thematic index of the same, or explaining what the user can expect to find in that folder, scope, contents, revision status of the items, or whatever may be relevant to facilitate the user's first contact with said contents.

Finally, with respect to the metadata functions included in Zotero that is not used, it is the ability to generate relationships between different items. These relationships can be established between articles by the same author (for example), or a topic on which there may be different opinions.

As an example, the WFOT publication "Study on the scientific basis of ozonized saline solution", which advises against the use of saline solution, can be related to Razumovskii's article "Mechanism and kinetics of the reaction of ozone with sodium chloride in aqueous solutions". It is not the scope of this report to demonstrate the validity of the technical aspects of these articles, but they are given as examples, since they are articles stored in different containers, but are directly related, where the use of tags is complementary, but insufficient to generate a direct link between the discussion of the two articles.

To clarify the example, two images are attached that show this function, the first in the browser interface, and the second in the native Windows application.

Image Nº1: The use of the "Related" function in Zotero's web interface.

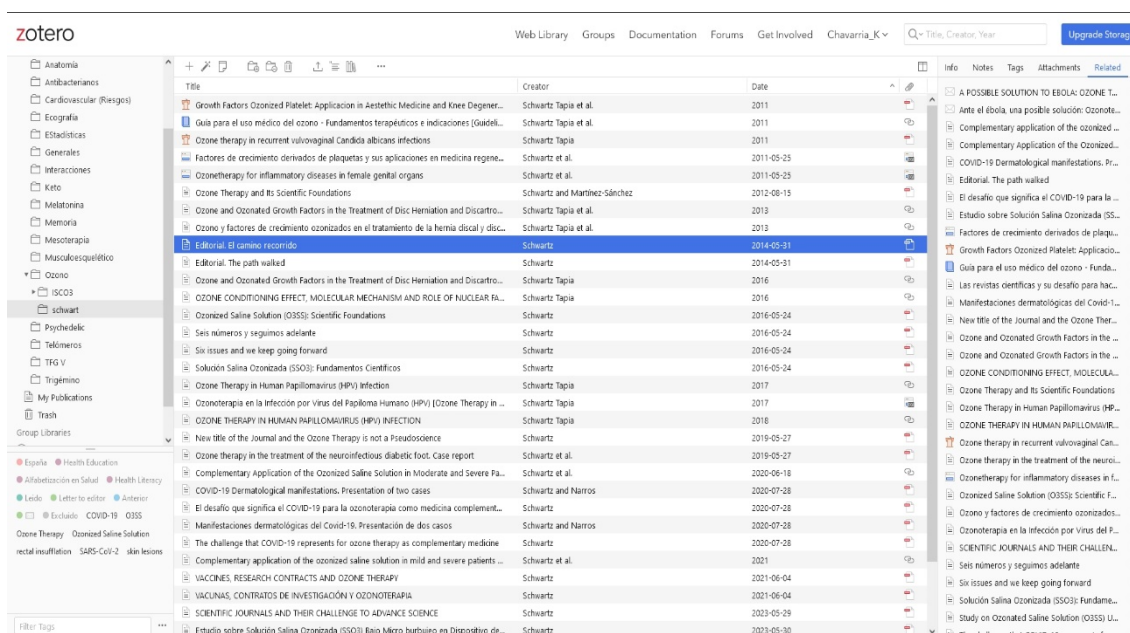
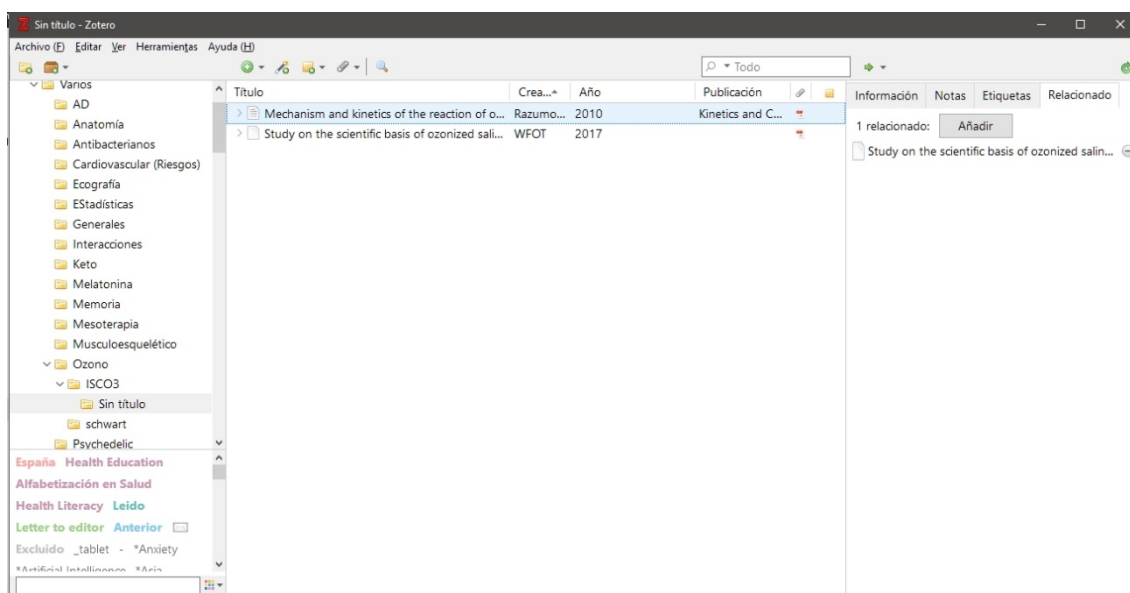


Image Nº2: The use of the "Related" function in the native Zotero application for Windows.



SPECIFIC ASPECTS IN THE ORGANISATION OF THE ISCO3 LIBRARY

Once the aspects common to all the sections have been described, some details about the organization of the library are commented on, which may serve as a starting point to facilitate future modifications aimed at improving navigation and content management. One striking aspect is the overlapping of related content in different folders. An example of this is that in the main directory (we could say root directory, to maintain the structural similarity of the Windows operating system) there is a folder called "Legal", and another folder with the same name, but other contents in "Good Clin Pract".

These aspects are details, but in the case of the differentiation between the sections contained in "Ozonated Oils / Water", "Ozonated Saline" and "Ozone Therapy", it is not so clear and seems a bit forced this distinction, in my humble opinion. This is where the use of tags would allow the contents to be grouped together, making them easier to see and distinguish.

One proposal to explore is to reduce the number of sections to general, clinical, technical (related to generators), and other non-scientific aspects. With the proposed changes in the use of metadata, the navigation of the contents could be improved.

It should be borne in mind that, although there are many items in the library, the fact that only a fraction of them are available hinders their use in some way, because items that cannot be shared openly due to copyright should be listed but not necessarily appear as library items.

Again, by way of example, the use of a spreadsheet for items that are not available in the library could help to focus the use of the resources that are available, making the experience less overwhelming when it comes to seeing too many results.

There remains one important aspect to draw attention to. In the folder called ISCO3 Expert C, there are the CVs of 41 members of the ISCO3 committee. A quick check of the names reveals that the vast majority of the members' CVs are not active members of the committee. On the other hand, given that the library is a resource open to the public, and the archives contain personal information, to maintain compliance with current data protection laws (GDPR), this data should no longer be publicly accessible.

In closing, there are other solutions that have not been discussed, such as the generation of a database hosted on a server external to Zotero, which has advanced search functions. This type of solution has been avoided because, among other things, it also makes it necessary to improve the current information (metadata) and the associated economic costs, which will not necessarily have a positive impact on the use of the library as a resource for consultation and reference, which is the purpose for which the ISCO3 library was created.