PEDro: this well-known, unknown Physiotherapy Evidence Database

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Abstract:
Aim of this contribution is to present some unknown features of the already well-known database PEDro (Physiotherapy Evidence Database) with some useful skills to make your search more effective.

PEDro: who is it?

PEDro stands for Physiotherapy Evidence Database, and surely it is well known in the world of rehabilitation medicine. We can try to explore it a little bit deeper, to find out something unknown to make our searches clearer or more effective.

PEDro (http://www.pedro.fhs.usyd.edu.au/index.html) is a free, web-based database of evidence relevant to physiotherapy. It is maintained by the Centre for Evidence-Based Physiotherapy, located at the Musculoskeletal Division, The George Institute for International Health (University of Sydney). The Centre's mission is to maximise the effectiveness of physiotherapy services by facilitating the clinical application of the best available evidence.

The database is available in many languages (English, Italian, French, Korean, German, Portuguese, Arabic, Spanish, Polish and Japanese), according to the flags on the homepage. PEDro contains – as to October, 2008 - citations of over 13.500 randomised controlled trials, systematic reviews and evidence-based clinical practice guidelines relevant to physiotherapy. Where possible, abstracts and links to full-text versions of the documents are also provided. It contains no items of other scientific literature, i.e., not scientific journal articles. It is updated once per month, on the first Monday. It includes any trial, review or guideline that satisfies the rigorous criteria of inclusion as stated on the website (http://www.pedro.fhs.usyd.edu.au/criteria.html), regardless of the time of publication: the oldest record, yet suitable, was published in 1929. To give just an idea of the solidity of such criteria: systematic reviews are not included unless they contain a "Method" section; guidelines are not included unless they are produced under the auspices of a health profession association, or professional societies, or public/private organizations, or government agencies: they also must be publicly available and they must contain a "Recommendation" section useful for physiotherapy practice; clinical trials are eligible only if they involve comparison of at least two interventions – which have to include treatments, prevention strategies, diagnostic tests… -, one of which has to be part of physiotherapy practice. Clinical trials are also rated with a checklist known as "PEDro scale", whose number appears in the results list. The PEDro scale deals only with internal validity of the trials and whether they contain sufficient statistical information. The ten single scale items are reported for each item in the complete record visualization – obtained by clicking on the title in the list, as shown in fig. 1:
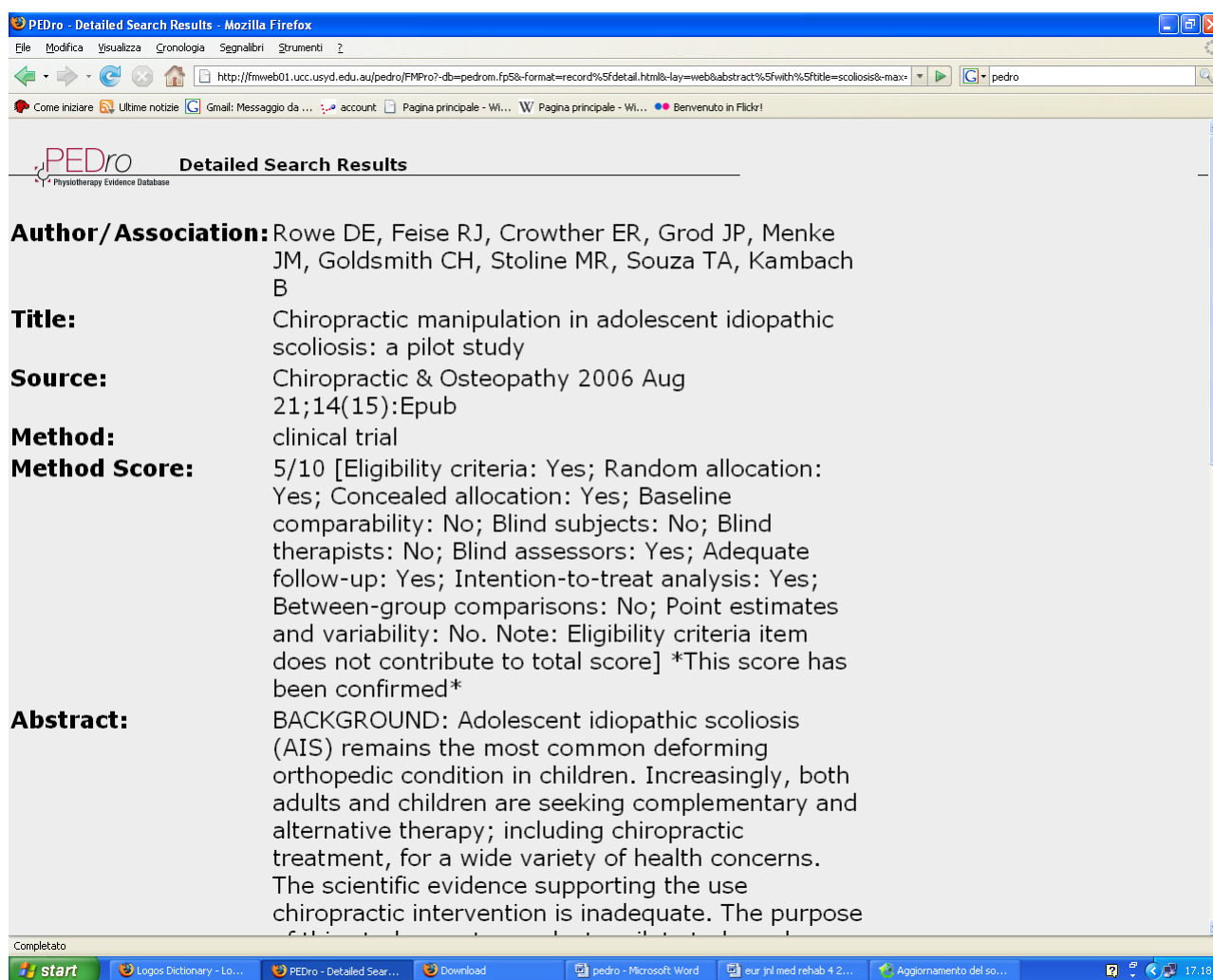
Fig. 1: "PEDro scale" score in detail for a clinical trial.

The PEDro score determines the ranking of the trials in the results list. Systematic reviews and clinical practice guidelines, which get a score of N/A that stands for Not Applicable, are presented sorted by year, starting from the more recent one. The system presents - please keep it in mind when facing a long list of results - first the guidelines, followed by the systematic reviews, and then by the trials with their own score. If someone disagrees with a score, he/she can email PEDro staff and explain the reasons of the supposed incorrect rate. PEDro also welcomes contributions by new volunteers to help locate and rate trials, reviews and guidelines – always by emailing the staff.

How to search PEDro and get effective results

The "Search" label on the homepage navigation toolbar opens a window menu with three options: Advanced search, Simple search, Search help – the latter being a longer version of the skills outlined here.
In the "Simple search" query box you can just type your query term, and the system retrieves all the documents containing your words, no matter if in the title or the abstract or anywhere else in the record. It could be a little bit dispersive, e.g. for "stroke" it gives back 839 results, going from rehabilitation to prevention to generic cardiovascular risks.
The "Advanced search" interface has been appositely created to bypass this lack of effectiveness: let's have a look at fig. 2:

Fig. 2: PEDro advanced search interface

As you can see, you can type tour query term in the search box – relating only with the title and the abstract of the documents – and then you can refine or limit your search by further steps like Therapy, Problem, Body part, Subdiscipline. Please note that you do not need to enter search term in each of the pull-down menus: in many cases it could be absolutely counterproductive and bring to a zero result list. Imagine that you are interested in finding a practice guideline dealing with the post stroke rehabilitation for patients with problems in hand coordination. Let's see step by step – but in the practice you can obviously make all these choices at once. By typing "stroke" we get 835 results. Refining only by Therapy, choosing "behaviour modification", we reduce to 39 records. Refining again by Problem, with "motor incoordination", we get 17 items. Limiting by Body Part, "hand or wrist", we have 7 results. Limiting by Method, "Practice guidelines", we get only one record, precisely fitting with our information need.

Let's note that by default the system operates in an "AND" mode: if you remember, AND is the Boolean operator used to restrict the number of item retrieved, as the system searches for all the terms together: it means Stroke AND Behaviour modification AND Motor incoordination AND Hand or wrist AND Practice guidelines. That's why could be counterproductive to fill in all the fields. You can see that this option, "Match all search terms", is set by default at the end of the Advanced search interface.

On the other hand, if you choose the "OR" mode – "Match any search term" -, the system will retrieve any of the terms you put in the search mask. It increases the number of records, sometimes in an ineffective way. But it is useful when your search deals with synonyms or narrow terms, like "lateral epicondylitis" OR "tennis elbow": with one search you can find both. It could also be useful

to combine terms from different pull-down menus, like "Pain" in the Abstract-title box and "Electrotherapy" in the Therapy field.

Other limits, on the right side of the screen, are: author, title, source, date of publication, date of inclusion in the database, and even PEDro score. To select a range of years, you have to use three periods (…) between the years, e.g. 2000…2008.

Once you got the result list, you can flag the most interesting items and then, clicking on the "Display selected records" button at the end of the page, you can visualize the complete record with the abstract, the complete bibliographical references, the PEDro score in case of clinical trials, and the link to the full text when available. You can print the list of selected just by activating the "Print" option of your Web browser, or save it just by using the "Save as" option of your Web browser. If you want to e-mail the list, you can simply do it by clicking the "E-mail results" button ant the end of the page. E-mailing is also an intermediate step to save results in the EndNote format. PEDro requires you to download an EndNote filter (available from the link in the homepage, http://www.pedro.fhs.usyd.edu.au/index.html).

Using wildcards

Just few words about wildcards: you have to get used with them for word variations. If you are looking for a singular/plural term, just type the root and the system, by default, searches for any record containing these letters at the beginning of the word: e.g. typing "fractur" you will retrieve items containing "fracture" and "fractures". The same for adjectives and related nouns: typing "spin" you will get all the "spine" and "spinal" records. Making the system consider a word not like a root is simple, just by typing = before your term: e.g. "=brain" will retrieves only "brain" itself and not "braincase, brainstem, brainwave" and so on.

Instead, if you are looking for a variation that includes a letter or a group of letter at the beginning of the word, you need to put an asterisk <u>before</u> your term: e.g. "*edema" will retrieves "edema", "oedema", "lymphedema" and "lymphoedema". Please notice that in this case PEDro will not perform at the same time the final variations.

For a single letter truncation, PEDro requires the @ symbol: e.g. if you don't remember the exact spelling of an author, you can type "R@uch" and have results for "Rauch" or "Rouch".

To find an exact phrase, let's enclose the words in inverted commas: "idiopathic scoliosis" will not retrieve scoliosis alone.