

EDITORIAL

RESEARCH AND PUBLISHING IN REHABILITATION MEDICINE

A number of papers has been published in recent years on aspects of publication specifically related to Physical and Rehabilitation Medicine (PRM). There are a number of specific problems in research design in rehabilitation, especially when it comes to randomized controlled studies. Some of these problems are discussed in this Editorial. Moreover, some of the information presented at the last congress of the International Society of Physical and Rehabilitation Medicine (ISPRM) in Istanbul, in the session “Editor’s summit” is summarized here, and some current aspects of structuring research and publication in PRM are discussed.

Editor sessions at international congresses

Increased contact between different journals in a country or in a discipline is of value; for instance, concerning arrangements with publishers or printing companies, aspects of scientific misconduct and fraud, conflict of interest, and matters related to the review process and how to organize manuscripts. There are special congresses on these matters, such as the International Congresses on Peer Review and Biomedical Publication, where valuable information is exchanged. Within the field of PRM increased contact between journals and increased information from the journals has been the result of “Meet the editors” sessions at several international congresses in recent years, started by an initiative of the late Haim Ring. The earlier sessions mainly comprised presentations of the journals, whereas at the last of these sessions (the “Editors summit”) at the ISPRM congress in Istanbul in 2009, specific topics were reviewed and discussed.

A report from the “Meet the Editor” session at the World Congress of the ISPRM in Seoul in 2007 was published in several journals representing the contributing editors (1). In this report it was concluded that the field of PRM will continue to expand, with an audience that has a broader range of scientific and clinical interests. The value of electronic publishing and of publication of articles ahead of print was emphasized as means to make material available electronically and eligible for citation before the printed version is available. The volume of research in the field, and consequently the number of manuscripts produced, is increasing. At the same time, the standards for high-quality articles are going up, and thus there are increasing challenges for editors. More high-quality journals may be needed, and new journals should be started, particularly in regions other than Europe and America. The potential of open access will increase, and journals may therefore require new means of funding. Among the topics discussed at the “Editors summit” session in 2009 were: publishing reviews, trends in peer review, publishing clinical trials in rehabilitation (see below), and the role of the editors in combating scientific misconduct. Thus, at the presentation by Dahong Zhuo (First

Affiliated Hospital, Sun Yat-sen University, Guangzhou, China) the roles of the editors and the journals were summarized as gatekeepers of the medical literature, as educators and advocates against scientific misconduct, and to define guidelines for good research ethics, as editorial judges, as correctors and to publish corrections or retractions when an author’s misconduct has been detected and verified. It can be noted that it may not be an easy task to detect scientific misconduct, and that the support of reviewers is needed. Luckily, journals in PRM seem to have been relatively free of such events, although there have been some attempts at double publication or publication of a manuscript prior to withdrawal from another journal to which it was originally submitted. Collaboration between journals and editors concerning scientific misconduct is therefore important.

Registration and requirements of clinical trials

In a world with an increasing number of clinical trials, it is necessary to enable research coordination, to inform on projects that are to be carried out, in order to avoid unnecessary duplication of studies, or to enhance the possibility of collaboration in multicentre studies, but also in order to detect deviations from good research and publication ethics. It is therefore important to register clinical trials in a public register such as ClinicalTrials.gov, and the *Journal of Rehabilitation Medicine*, as other PRM journals, strongly recommends this.

In reporting clinical trials it is recommended to follow the structure set out in Consolidated Standards of Reporting Trials (CONSORT). It is also important to be aware of the specific problems in rehabilitation research, as also discussed for other non-pharmacological treatments (2). Among the specific aspects in rehabilitation research, Nelson & Mathiovetz (3) noted treatment fidelity (treatment delivery, treatment receipt and treatment enactment), non-blinded interventionist and non-blinded participant. Typical for rehabilitation studies is that the patient (participant) usually cannot be fully blinded and that the person giving the treatment or intervention will know about it, so that attitudes towards the intervention may have an effect on the participant. If possible, in comparing two or several treatments, the interventionists should have a positive attitude towards the interventions given. It should be stressed that it is necessary to use blinded evaluators for all rehabilitation studies. These aspects must be considered carefully by the reviewers and journal editors. It must also be remembered that non-randomized studies and single-case studies with the subjects as their own controls, as also studies with qualitative methodology, can be appropriate in rehabilitation research, not least as a first step in a project, but also when randomization is unethical or practically impossible. It is therefore important in publication to maintain a positive attitude towards non-

randomized studies with good design and be aware of when they are an appropriate alternative.

Conflict of interest

There is increasing concern about conflict of interest in rehabilitation research. Not only are grants provided by commercial companies, but research may also be performed in direct collaboration with them. It is important that it is stated clearly that the results are treated, discussed and reported free of any commercial influence. In a recent article, Segal et al. (4) discussed industry-sponsored research and it was noted that organizations in physical and rehabilitation medicine had so far not published ethical guidelines for the conduct of industry-sponsored research, as has been done in a number of other medical specialties. It was considered important to include groups of patients who stand to benefit from the research, to have independent reviews, to disclose potential risks and benefits, and to have an unrestricted timely presentation of the results whether positive or negative. The presentation of negative results is also important for several reasons, and these should be kept in mind by both researchers and editors.

Several types of conflict of interest may exist. It is up to the editors and editorial boards to decide to what extent this should be accepted, even if disclosed. Current views on conflicts of interest and how to handle them should be open for discussion in the scientific publications and within the professional organizations. Generally, researchers are encouraged to reduce conflict of interest to the greatest extent possible, for example, by avoiding serving on speakers' bureau, as recommended by the Journal of the American Medical Association (JAMA), and being paid by industry for lectures. Rehabilitation researchers with considerable financial interest in products should avoid being principal investigators in studies on those products. If a scientific paper is presented by researchers employed in the industry, this must not mean that it cannot be accepted in scientific journals, but how this conflict of interest is handled and disclosed must be reviewed carefully by the editor and editorial board. It is also up to the readers to evaluate the disclosed conflict of interest. Transparency is important, and the registration of clinical trials, as recommended by the International Committee of Medical Journals Editors, is one such important way. An appropriate evaluation by an ethics committee at the university is another way to guarantee transparency and adherence to accepted ethical standards. It is an obligation of journals to ensure that published studies, when relevant, have been accepted by an ethics committee.

Current aspects of research and publication in human functioning and rehabilitation

The content and structure of research in the rehabilitation field has been discussed extensively in recent years. One important and valuable approach has been developed in connection with the International Classification of Functioning, Disability and Health (ICF). A related approach was recently published in a Special Issue of the *Journal of Rehabilitation Medicine* (2007; No. 4). A structure for research in rehabilitation was outlined (5) and an extensive list of journals with publications related to rehabilitation was provided (6).

The scientific fields in Human Functioning and Rehabilitation Research (HFRR) (5) were identified as:

- *Basic sciences*: Human functioning sciences and Biosciences in rehabilitation
- *Applied rehabilitation sciences*: Integrative rehabilitation sciences and Biomedical sciences and engineering
- *Professional rehabilitation sciences*

It can be clearly supposed that those areas will be covered by various professions and that PRM physicians will mainly conduct research in the last 3 fields, although a background in one of the mentioned basic science fields may be fruitful and will broaden perspectives in the more applied research fields. However, in a letter by DeLisa (7) a warning was raised that implementing a unified concept across basic, applied and professional sciences may risk obscuring the specific scientific fields and expertise required. In a reply (8) from some of the authors of the Special Issue, it was stated that, through the common denominator HFRR, the whole area and the distinct, but related, scientific fields would become more visible to the public and policy-makers. This would be of importance in enhancing the understanding and status of rehabilitation-oriented research. Comments against the promotion of five new fields were also raised in two other Letters to the Editor in the *Journal of Rehabilitation Medicine* (9, 10), which advocated the creation of only one new discipline. Use of the term "Rehabilitation Science", as used in the University of Washington (9), and to adhere more closely to the ICF (10) term "Human Functioning Sciences", were suggested. In a subsequent reply by Reinhardt & Stucki (11) the importance of a structure towards which research programmes can be oriented was stressed. It was advocated to foster exchange between disciplines and levels of science and to avoid the building of new silos or falling back into old patterns of confronting biomedical and social models without noticing that these are not mutually exclusive. Rehabilitation Sciences and Human Functioning Sciences may further be perceived as aspects of the General Health Sciences. A continuous constructive discussion of these complicated matters is encouraged.

When it comes to publication, the list of journals presented by Reinhardt et al. (6) comprises not less than 231 titles; however, some journals of relevance for rehabilitation may still be missing, and only those published in English were listed. The list was intended to serve as an initial guide for identification of possibilities for the submission of publications and as sources of scientific information. Few of the journals would be characterized as PRM journals, or more specifically, rehabilitation journals. It is reasonable to assume that the papers submitted to these journals will be mainly from the Applied and Professional rehabilitation sciences.

Thus, in a rather broad and not so easily defined field such as PRM, it can always be discussed what the main scope of the journals should be and whether some areas such as experimental studies in animals related to PRM areas, studies in healthy persons, but with rehabilitation aspects, and epidemiological studies on disability should be published in PRM journals. The *Journal of Rehabilitation Medicine* is open to this discussion, and at a recent Editorial Board meeting it was advocated also to publish more experimental biomedical

research. The problem will still be whether we will obtain the best material if the scope is too broad. Any comments on this and other topics for publication are welcome directly to the Editor or as Letters to the Editor.

In an editorial in *Journal of Rehabilitation Medicine* Henk Stam (12) discussed to what extent countries in Europe contributed to the growing body of knowledge in PRM compared with other continents. The nationality of the research groups that published in 4 multidisciplinary PRM journals with the highest impact factor at that time was identified. It was found that many countries in the continent or southern part of Europe were probably under-represented. It was assumed that high-quality research from such groups might be published in national journals, in some instances not in English. This has since changed somewhat, as some journals now publish in English. The importance of publishing in English and in indexed journals was stressed and considered as a priority of the national societies of PRM in Europe. A recent promising initiative has been taken by the European Society of Physical and Rehabilitation Medicine (ESPRM) to establish a European web of journals, in order to increase awareness with regard to the more local journals. A similar approach will also be taken from the ISPRM, as expressed in a recent "policy" paper (13). One model to have high-quality material submitted to national or local journals to be published in English would be that a few manuscripts are selected for translation to English and first published in an "international" journal, and subsequently in their own language in a "local journal". It is also important to strengthen the role of the European and American-based journals with published impact factors from the Science Citation Index (SCI): *Clinical Rehabilitation, Disability and Rehabilitation, Journal of Rehabilitation Medicine, Archives of Physical Medicine and Rehabilitation and American Journal of Physical Medicine and Rehabilitation*, as recognition from the scientific community and from other specialties will presently be based mainly on them. This naturally means a special responsibility for the editors and the editorial boards of these journals to determine the best structure and the appropriate scope of their journals. The development of new common standards for publication in rehabilitation journals based on the ICF has been stressed (14) and seems to be a suitable means to enhance both the quality and the visibility of research in rehabilitation and PRM.

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