

Language of publication has a small influence on the quality of reports of controlled trials of physiotherapy interventions

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Abstract

Objectives: To investigate whether the methodological quality is influenced by language of publication in reports of randomized controlled trials and controlled clinical trials of physiotherapy interventions.

Study Design and Setting: Bibliometric and methodological quality data from all reports of trials indexed on the Physiotherapy Evidence Database (PEDro) up to February 2011 were extracted. Descriptive statistics on the total PEDro score and the 11 individual PEDro items were calculated for each language of publication and for all non-English-language reports combined. Regression models were calculated to predict the total PEDro score and the presence of each of the 11 items of the PEDro scale using the language of publication as an independent variable.

Results: A total of 13,392 reports of trials were used for this study, 12,532 trials published in English and 860 published in other languages. Overall methodological quality was better for English reports than reports written in other languages ($\beta = 0.15$, 95% confidence interval = 0.04, 0.25). Specifically, reporting was better for items relating to random allocation, concealed allocation, and blinding of assessors, worse for more than 85% follow-up and intention-to-treat analysis, and no different for eligibility criteria and source specified, baseline comparability, blinding of subjects and therapists, reporting of between-group statistical comparisons, and reporting of point measures and measures of variability.

Conclusion: Language of publication is associated with the methodological quality of reports of physiotherapy trials. Although English reports are more likely to have better methodological quality than reports written in other languages, the magnitude of this influence is small. © 2013 Elsevier Inc. All rights reserved.

Keywords: Language; Methodological quality; Physiotherapy; Editorial policies; Risk of bias; Language bias

1. Introduction

The practice of evidence-based physiotherapy should be informed by relevant and high-quality clinical research [1]. Physiotherapy (or physical therapy) interventions broadly involve the use of education, therapeutic exercise, functional training, manual therapy, prescription of devices and equipment, airway clearance techniques, and electrotherapeutic modalities across a range of health conditions [2]. The best types of clinical research about the effects of an intervention are randomized controlled trials and systematic reviews of randomized controlled trials [3,4]. Two challenges for implementing evidence-based physiotherapy

are that the quality of reports of trials varies widely [5], and trials and reviews are published in a number of different languages. Similar challenges are also experienced in other areas of health care [6].

High-quality studies are the ones that present low risk of systematic error (or bias). There is some empirical evidence that the quality of reports of controlled trials in physiotherapy are slowly improving over time [7]. This improvement in quality may be due to a better understanding of important sources of bias, such as concealed allocation, intention-to-treat analysis, and blinding [7]. As physiotherapy commonly involves the use of complex interventions, it may not be possible to use design features to control some forms of bias (eg blinding of therapists and patients) is only possible when evaluating electrotherapy interventions. Reports of randomized controlled trials and controlled clinical trials in physiotherapy are published in multiple languages; and to

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What is new?**Key findings**

- Although language of publication is associated with the methodological quality and statistical reporting of physiotherapy trials, the magnitude of this influence is small.

What this adds to what was known?

- Previous studies on this topic were small and restricted to just a few languages. A more robust analysis from our study indicates that English-language trial reports have slightly higher methodological quality compared with reports published in languages other than English in the field of physiotherapy.

What is the implication and what should change now?

- As the risk of bias may be higher in reports of physiotherapy trials published in languages other than English, methodological quality and statistical reporting should be carefully evaluated for all trial reports (regardless of language of publication) before inclusion into summaries of evidence.

our knowledge, there are no studies that have investigated the influence of language of publication on the quality of trial reports in physiotherapy.

Although English-language reports appear to have similar [8,9] or slightly higher [10] methodological quality compared with reports published in languages other than English, only a few languages have been investigated (English, Chinese, German, French, Italian, Japanese, Portuguese, and Spanish) using a relatively small sample of trial reports. The largest evaluation compared 485 English-language reports with 115 non-English-language reports (42 German, 29 French, 12 Italian, 8 Japanese, 7 Spanish, 6 Portuguese, 3 Chinese, and 8 unspecified European languages) [10], whereas the other evaluations compared 133 English reports with 96 non-English reports (20 French only, 20 German only, 20 both French and German, 20 Italian, and 16 Spanish) [9] and 40 English reports with 40 German reports [8]. A more robust evaluation of the influence of language would be possible with a larger sample of published trials that included a broader range of languages. It is possible to perform this analysis with reports of trials of physiotherapy interventions because nearly all trial reports have been indexed on a single database, the Physiotherapy Evidence Database (PEDro - <http://pedro.org.au>) [11,12]. The PEDro indexes report clinical trials [13] (both randomized controlled trials and controlled clinical trials). Furthermore, reports indexed on

PEDro are assessed for methodological quality and completeness of reporting using the PEDro scale [5,14,15].

Although English is considered a “world language,” only 25% of the world population can speak or read English [16]; however, approximately 90% of all physiotherapy trials and systematic reviews are published in English. Although the Cochrane Collaboration recommends that reviews include reports of trials irrespective of language of publication [13], nearly 80% of systematic reviews of randomized controlled trials have restrictions with regards to the language of publication, mostly excluding trials published in languages other than English [17]. Perhaps these language restrictions occurred in these reviews because of the difficulty in identifying trials published in languages other than English, the languages spoken by the reviewers, or owing to the view that English language publications are sufficient for summaries of evidence such as systematic reviews or clinical practice guidelines [9]. Based on an analysis of 50 Cochrane reviews, excluding non-English language trials had little effect on the overall treatment effects [10]. One way to assess whether language restrictions are reasonable for systematic reviews is to assess the quality of reports of trials in both languages (English and non-English). If the quality of English and non-English trial reports are similar, there will be no reason for exclusion of trials based on the language of publication [9].

Our primary aim was to investigate whether the quality of trial reports is influenced by the language of publication (English vs. non-English), as rated by the 11-item PEDro scale. Our secondary aim was to describe the characteristics of the universe of physiotherapy trial reports published in each available language.

2. Methods

All trial reports (clinical controlled trials and randomised controlled trials) indexed on PEDro in February 2011 were downloaded. The variables downloaded were title, authors, journal name, year of publication, language, therapy being evaluated, and PEDro scale (ratings of each of the 11 items and the total PEDro score). We excluded trials that had incomplete PEDro scale ratings (i.e., reports that were still in the process of being indexed on PEDro) from the evaluation of the relationship between language and quality of reporting.

The PEDro scale was chosen for this study and trials indexed on PEDro are assessed for methodological quality and statistical reporting using the 11-item PEDro scale [5,14,15]. The items are: (1) eligibility criteria and source specified; (2) random allocation; (3) concealed allocation; (4) baseline comparability; blinding of (5) subjects, (6) therapists, and (7) assessors; (8) more than 85% follow-up; (9) intention-to-treat analysis; (10) reporting of between-group statistical comparisons; and (11) reporting of point measures and measures of variability. Each item

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