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REVIEW ARTICLE

Describing reporting guidelines for health research: a systematic review

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Abstract

Objective: To describe the process of development, content, and methods of implementation of reporting guidelines for health research.

Study Design and Setting: A systematic review of publications describing health research reporting guidelines developed using consensus.

Results: Eighty-one reporting guidelines for health research were included in the review. The largest number of guidelines do not focus on a specific study type ($n = 35$; 43%), whereas those that do primarily refer to reporting of randomized controlled trials ($n = 16$; 35%). Most of the guidelines ($n = 76$; 94%) include a checklist of recommended reporting items, with a median of 21 checklist items (range: 5−64 items). Forty-seven (58%) reporting guidelines were classified as new guidance. Explanation documents were developed for 11 (14%) reporting guidelines. Reporting-guideline developers provided little information about the guideline development process. Developers of 50 (62%) reporting guidelines encouraged endorsement, most commonly by including guidelines in journal instructions to authors ($n = 18$; 36%).

Conclusions: Reporting-guideline developers need to endeavor to maximize the quality of their product. Recently developed guidance is likely to facilitate more robust guideline development. Journal editors can be more confident in endorsing reporting guidelines that have followed these approaches.

Keywords: Systematic review; Reporting guidelines; Research methodology

1. Introduction

More than 60,000 articles are indexed monthly in PubMed, the United States National Library of Medicine's public access portal to the health-related journal literature. Given the large and growing volume of published articles, readers commonly find research reports that fail to provide a clear and transparent account of the methods and adequate reporting of the results. If authors do not provide sufficient details concerning the conduct of their study, readers

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Competing interests: Drs Moher, Schulz, Simera, Hoey, and Professor Altman are all members of the EQUATOR (Enhancing the QUAlity and Transparency Of health Research) Network Steering Group.

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What is new?

Key findings

- There are lots of reporting guidelines covering a broad spectrum of research.
- Most guideline developers have not described how their guidance was developed.
- Few guideline developers have evaluated the effectiveness of their guidance.

What this adds to what was known?

- This is the first systematic review of reporting guidelines.

What is the implication and what should change now?

- Reporting-guideline developers need to optimize how their guidelines are developed and evaluated.
- Journals could be more cautious about the guidelines they endorse.

are left with an incomplete picture of what was done and found. Poorly reported research may result in misinterpretation and inappropriate application in clinical settings. Moreover, it provides misleading evidence that might be used to develop new research projects founded on the published studies. As such, funds devoted to support research may not be used optimally.

Several reviews documenting inadequate reporting exist. Chan and Altman [1] reviewed all 519 English and French reports of randomized controlled trials (RCTs) indexed on PubMed and published during December 2000. These researchers focused on the reporting of several characteristics, including generation of the randomization sequence and allocation concealment. Both processes are core features in the conduct of any RCT. They reported that 410 (79%) authors did not report on the method of sequence generation, and 425 (82%) did not mention any methods of allocation concealment. A 2006 update [2] surveyed all 616 reports of RCTs indexed on PubMed in December 2006 and found some improvements: 407 (66%) of the reports did not provide information about the sequence generation (down from 79% in 2000), and 460 (75%) reports did likewise for allocation concealment (down from 82% in 2000). Glasziou et al. [3] assessed descriptions of given treatments in 80 trials and systematic reviews published during a single year (October 2005 to October 2006) and subsequently summarized in *Evidence-Based Medicine*, a journal aimed at physicians working in primary care and general medicine. Treatment descriptions were deemed inadequate in 41 of those published studies, making their use in clinical practice difficult if not impossible to replicate.

Since the early 1990s, research groups consisting primarily of medical journal editors, methodologists, and content experts have developed reporting guidelines as tools to help improve the quality of reporting of health research articles. A reporting guideline is a checklist, flow diagram, or explicit text to guide authors in reporting a specific type of research, developed using explicit methodology. A consensus process, which involves obtaining agreement among stakeholders, such as journal editors, methodologists, and content experts [4], should be a crucial characteristic of developing a reporting guideline. Carefully developed reporting guidelines provide authors with a minimum set of items that need to be addressed when reporting a study. As an example, the recently published PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) statement is a 27-item checklist and four-stage flow diagram, developed by a team of 29 people [5]. Initial evaluations of reporting guidelines indicate that their use is associated with improved quality of reporting [6–8].

At the time of writing this article, more than 90 different reporting guidelines are included on the EQUATOR (Enhancing the QUAlity and Transparency Of health Research: www.equator-network.org) Network's Library for Health Research Reporting. Although that number indicates a considerable investment in the development of reporting guidelines, to date, no systematic review of the process of development or the contents of reporting guidelines exists, except for a systematic review of reporting guidelines for systematic review searches [9]. Such a review of reporting guidelines is important, because the results may provide information concerning the rigor of their development, help inform those interested in developing a new reporting guideline, and help users of reporting guidelines make sense of the proliferation of reporting guidelines in recent years. We set out to describe the process of development, content, and implementation of reporting guidelines for health research.

2. Methods

We based this study on a preexisting protocol available at http://www.ohri.ca/protocols/RGSR_Protocol.pdf. We defined a reporting guideline as described earlier. Our scope was health research, including clinical, laboratory, qualitative, and health economic research. We searched several relevant databases: Ovid MEDLINE(R), 1950 to February, week 2, 2009; EMBASE, 1980–2009, week 8; PsycINFO, 1806 to February, week 3, 2009; and the Cochrane Methodology Register (CMR) of the Cochrane Library 2009 (issue 1), for health research reporting guidelines.

We also searched the EQUATOR Network Library for Health Research Reporting, www.equator-network.org