

## Trial registration in Latin America and the Caribbean's: study of randomized trials published in 2010

Ludovic Reveiz<sup>a,\*</sup>, Xavier Bonfill<sup>b</sup>, Demian Glujovsky<sup>c</sup>, Carlos E. Pinzon<sup>d</sup>,  
Claudia Asenjo-Lobos<sup>e</sup>, Marcela Cortes<sup>f</sup>, Martin Canon<sup>g</sup>, Ariel Bardach<sup>c</sup>,  
Daniel Comandé<sup>c</sup>, Andrés F. Cardona<sup>h</sup>

<sup>a</sup>Public Policies and Research, Health Systems Based on Primary Health Care, Pan American Health Organization, Washington DC, USA

<sup>b</sup>Iberoamerican Cochrane Centre, IIB Sant Pau, CIBERESP, Universitat Autònoma de Barcelona, Spain

<sup>c</sup>Institute for Clinical Effectiveness and Health Policy (IECS), Centro Colaborador de la Red Cochrane Iberoamericana, Buenos Aires, Argentina

<sup>d</sup>Instituto de Investigaciones, Fundación Universitaria Sanitas, Centro Colaborador de la Red Cochrane Iberoamericana, Bogotá, Colombia

<sup>e</sup>Centro Rehabilitación Oral Avanzada e Implantología (CRAI) Universidad de Concepción—Chile

<sup>f</sup>Facultad de Medicina, Centro Colaborador de la Red Cochrane Iberoamericana, Universidad Católica de la Santísima Concepción, Chile

<sup>g</sup>Facultad de Medicina, Fundación Universitaria Sanitas, Bogotá D.C., Colombia

<sup>h</sup>Grupo Oncología Clínica y Traslacional, Instituto de Oncología, Fundación Santa Fe de Bogotá, Bogotá D.C., Colombia

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### Abstract

**Objective:** To determine the prevalence of trial registration in randomized controlled trials (RCTs) published in 2010 (PUBMED/LI-LACS) from Latin America and the Caribbean's (LAC) and to compare methodological characteristics between registered and nonregistered RCTs.

**Study Design and Setting:** A search for detecting RCTs in which at least the first/contact author had a LAC's affiliation was made. We determined if RCTs were registered in the International Clinical Trial Registry Platform (ICTRP). Data were independently extracted by two authors. The risk of bias (RoB) was assessed in all registered RCTs ( $n = 89$ ) and in a sample of nonregistered RCTs ( $n = 237$ ).

**Results:** The search identified 1,695 references; 526 RCTs from 19 countries were included. 16.9% (89/526) of RCTs were registered in the ICTRP; however, only 21 (4.0%) were prospectively registered. A significant difference was found in the overall assessment of the RoB between registered and nonregistered RCTs. Overall, registered RCTs were multinational, had larger sample size and longer follow-up, and reported more frequently information on funding, conflict of interests, and ethic issues. No significant differences were found when analyzing prospectively registered RCTs.

**Conclusion:** This study shows that trial registration rates are still low in LAC and the quality of reporting needs to be improved. © 2012 Elsevier Inc. All rights reserved.

**Keywords:** Randomized controlled trials; Trial registration; Publication bias; Methods; Latin America and the Caribbean; Cross-sectional study

Conflict of interests: none.

Ludovic Reveiz is a PhD candidate at the Universitat Autònoma de Barcelona.

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\* Corresponding author. Public Policies and Research Area of Health Systems Based on Primary Health Care, Pan American Health Organization PAHO/WHO, 525 23rd Street NW, Washington, DC 20037, USA.

E-mail address: lreveiz@paho.org (L. Reveiz).

### 1. Introduction

Although randomized controlled trials (RCTs) are considered the gold standard of evidence, they are subject to bias, including outcome reporting bias and publication bias [1]. Trial registration, full publication of the protocol, and full reporting of research results have been considered to reduce bias in literature and promoted to achieve higher levels of transparency and accountability of clinical trials [2,3].

Currently, the main source of essential protocol information can be found in trial registries, which aim at providing the essential information as defined by the World Health

### What is new?

The prevalence of trial registration in randomized trials published by Latin America and the Caribbean's authors could be improved. In addition, the report of trial registration in an International Clinical Trial Registry was associated with improved reporting and lower risk of bias of randomized controlled trials (RCTs). However, considering that most registered RCTs were not prospectively incorporated, significant difference among groups could be because of complex and varied reasons, including differences in publication standards of biomedical journals, wide-ranging knowledge, and interest of authors on the trial registration initiative, local legislation (i.e., multinational studies), or ethic committee enforcement among others. Further efforts to enhance RCT registration could contribute to this improvement.

Organization (WHO) standards [4]. Similarly, although the main source to disseminate trial results in a trustworthy way is the publication of the trial in a peer review journal, public results databases have been proposed as a complement to publication [5,6]. Also, trials registration may be associated with adequate reporting; a previous study [7] found that authors reporting trial registration in an International Clinical Trial Registry may have a higher adherence to the CONSORT (Consolidated Standards Of Reporting Trials) statement [8].

It is difficult to estimate the real number of clinical trials conducted and published worldwide and particularly in Latin America and the Caribbean's (LAC). According to a recent evaluation, from the total number of Phase II/III trials ( $n = 7,355$ ) for all industry-sponsored trials registered in the U.S. trial registry ([clinicaltrials.gov](http://clinicaltrials.gov)) initiated between July 2008 and December 2010, 7.9% were conducted in LAC (one trial could be conducted in more than one continent) [9]. In addition, a search performed in the International Clinical Trial Registry Platform (ICTRP) found that 1,323 clinical trials were registered in 2010, in any of the countries of LAC (a trial can also be conducted in more than one country and is thus counted more than once), 732 of which were currently ongoing [10].

Because there is no information on essential characteristics of randomized trials conducted in the region regarding trial registration, the aim of this study is to determine the prevalence of trial registration in RCTs published in PUBMED and LILACS in 2010 in LAC as well as to compare methodological characteristics between registered and nonregistered RCTs. We hypothesized that there were differences in reporting quality items/risk of bias (RoB) between registered and nonregistered RCTs.

## 2. Methods

### 2.1. Study design

We conducted a cross-sectional study to evaluate the prevalence of trials registration and the RoB and other characteristics of RCTs published in PUBMED and LILACS in 2010 in LAC.

### 2.2. Sample

#### 2.2.1. Eligibility criteria

Inclusion criteria: 1) the report was published between January 1 and December 31, 2010. RCTs published "ahead" electronically by journals were included; 2) the report was published as an original article; 3) the study groups were reported to have been randomly assigned (the report had to explicitly use the word 'random' or variations thereof, otherwise it was excluded); 4) only studies randomizing humans or cluster of human were included (e.g., example randomization of extracted teeth, biopsies, and so forth among others were excluded); 5) RCTs in which at least the first author had a LAC's affiliation; 6) the study was conducted in at least one LAC country site; and 7) duplicate RCTs were excluded if identified.

#### 2.2.2. Selection of RCT reports

A structured search for identifying RCTs in those journals was made in Medline (PubMed) ([Appendix](#)) and LILACS (using filter proposed by BIREME's web page <http://lilacs.bvsalud.org/for> locating RCT; no country filter was used) from January 1st to December 31st, 2010. Titles and abstracts from references were identified and screened. When there was uncertainty, the full study was obtained to determine inclusion. Data were extracted from full studies of abstracts deemed appropriate for inclusion. There was no restriction for language. Data were recorded and analyzed using SPSS version 17 (SPSS, Inc., Chicago, IL, USA).

#### 2.2.3. Data extraction

RCTs under consideration were allocated and assessed by two reviewers for extracting information and assessing the RoB as described in the Cochrane Collaboration Handbook [1]. The instrument was checked in a pilot test by all assessors. Disagreements were resolved by a third reviewer.

We did not evaluate secondary publications (i.e., other RCTs, protocols) when the methods of the study were not fully reported in the publication and the trialists reported that the methodology was detailed in another publication.

### 2.3. Outcomes

#### 2.3.1. Primary outcome

The primary outcomes were the following: 1) Registration in a recognized International Clinical Trials Registry of the ICTRP network (including Registry name and