

Book review

How to Design, Analyse and Report Cluster Randomised Trials in Medicine and Health Related Research. M. J. Campbell and S. J. Walters (2014). Chichester: John Wiley & Sons. Hardback, 264 pages, ISBN-13: 9781119992028. eBook, 272 pages, ISBN-13: 9781118763605.

Cluster randomized controlled trials (cRCTs) are becoming extremely popular. In developing countries, for example, community trials or household trials are increasingly used. This calls for textbooks for undergraduate students. Campbell and Walters provide such a textbook, and they have done a great job.

The book includes 10 chapters, the first three of which are related to design aspects. Chapter 1 is a general introduction, where basic and fundamental terms are discussed and the example trials used in later chapters are presented. Chapter 2 deals with specific design questions, whereas Chapter 3 is devoted to sample size calculation of cRCTs using different outcomes of interest. Simple statistical approaches to data analysis are provided in Chapter 4. Chapters 5 and 6 deal with regression models. Interestingly, the authors restrict Chapter 5 to the analysis of quantitative outcomes using various statistical approaches. Regression methods for binary, count, and survival outcomes are all considered in Chapter 6, which has about the same length as Chapter 5. How to write a study protocol for cRCTs is the topic of Chapter 7, and the reporting of a cRCT according to the CONSORT statement for cRCTs is discussed in Chapter 8. Several practical aspects for the planning and analysis of cRCTs, such as complex interventions or the handling of missing data, would not have fit in any of the previous chapters. These aspects are nicely organized and presented separately in Chapter 9. Finally, the use of R, Stata, and SPSS for cRCTs is illustrated in Chapter 10.

The book has several strengths. First, practical aspects about study design, analysis, and reporting are always the focus. As a result, the technical level of the book is low. Since both authors have long-standing experience in cRCTs, their tips are invaluable. Second, the authors provide code chunks for planning and analyses using Stata, SPSS and, most importantly for researchers in Africa and other developing countries, R. The codes in the main text are simple to follow, and the programs provided in appendices at the end of each chapter are easy to understand for trained biostatisticians. A wish for the next edition is extensive commentaries on these codes to make them still better accessible for less experienced R users. Third, the authors provide problems and solutions, which make the book useful for classroom teaching. Fourth, programs, data and solutions to the problems are available online.

However, the book has one major weakness at the moment. Two links are provided in the preface to gain access to additional material. Specifically, programs, data and solutions should be provided at sheffield.ac.uk/scharr/sections/dts/statistics according to a statement in the book. Instead, this link directs the user to campbell-walters.weebly.com at the very end of the Sheffield statistics web page. The link www.wiley.com/go/cluster_randomised has also been listed as leading to an accompanying website. However, at the time of writing this book review, the link did not lead to online resources of the book but to a general Wiley online resource web page. The reviewers are convinced that these problems can be solved easily.

Overall, the reviewers are enthusiastic about the book. The authors have covered all important areas of cRCTs, using a practical and pragmatic approach to the topic. The code is helpful for the practical implementation of the examples. The material is simple to understand, which will appeal to applied researchers, not only to biostatisticians. As such, we clearly recommend this book to all

researchers interested in cRCTs. For biostatisticians involved in cRCTs and investigators of cRCTs, it is a must-have on the bookshelf.

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