

11th edition

Statistics at Square One

M J Campbell &
T D V Swinscow

 WILEY-BLACKWELL

BMJ Books

Reviews of earlier editions

Statistics in medicine

(1997 by John Wiley & Sons, Ltd. *Statist. Med.*, 16, 2627D2631 (1997))

STATISTICS AT SQUARE ONE. Ninth Edition, revised by M. J. Campbell, T. D. V. Swinscow, BMJ Publ. Group, London, 1996. No. of pages: 140. Price: £11. ISBN 0-7279-0916-9

This book was first published in 1976 and now reaches a revised ninth edition. As the publishers announce that over 86,000 copies have been sold it is fair to call the book a best seller. It aims to reach a medical audience interested in having a clear account of statistics in medicine. This being such a difficult task let alone the writing of a good book on statistical methods and thinking it must be said that the attempt is quite successful. The book makes basic statistical notions clear and easy for the reader. In general it balances very well the introduction of statistical techniques with good and simple explanations of some of their rationale. It does a good job in making the reader comfortable with basic concepts and certainly prepares him to have a rewarding conversation with the statistician. The first chapter presents several graphical and tabular forms of displaying data and summarizing them. Modern computing availability is taken into account (throughout the book). This chapter and again all others presents exercises which should not be hard for the reader to work on. Another feature of the book which makes the reading lively and somewhat interactive is the answered and discussed 'common questions'. These are indeed very frequently heard by the statistician. Chapter 2 deals with descriptive statistics in clear and easy to read form while the next chapter introduces notions of sampling. The idea of randomness is thus presented without the usual previous material on mathematics of probability calculus (and gambling examples). This is a general quality of the book: probability is used in the strict amount a physician can handle. Chapter 3 does also a very good job in making clear the difference between population and sample mean standard deviations. Some basic notions of design are also hinted at. Chapters 4 and 5 proceed with confidence intervals and test errors. The exposition remains generally clear and nice to read. The reader might at this point become confused with the different notions of 'confidence' and 'probability'. The presentation, however, makes the best that can be done in order to elucidate the matter. The difficulty for the reader is inherent to the logic of unconditional (frequentist) thinking.

The book goes on with proportions, *t*-tests and chi-squared statistics. At this point *P*-values are already introduced and the reader should feel the reading of results in medical journals less obscure. All the examples are from medical data. There is good material on two by two tables and exact tests.

Rank methods are presented next with some comparative discussion, followed by a chapter on correlation and regression. There are warnings (which are never enough) on causality versus association.

Chapter 12 deals with survival analysis and presents (the construction) of Kaplan-Meier curves.

The last chapter study design and choosing a statistical test briefly presents fundamental issues of design. This chapter also has a table on page 129 which somehow wraps up the whole book presenting the 'choice of test according to the nature of input and outcome variables. This table might give the reader the idea that there exist optimal tests for every situation and that situations depend on the nature of data (quantitative, ordinal, 2). The last paragraph in the text warns against mechanical use of the table but there should be more suggestion and encouragement for the reader to see the statistician. Almost every chapter has well chosen references for further reading as well as exercises. Tables of usual test distributions are provided at the end of the book. A table of random numbers is also available. An important drawback in the book is the absolute absence of references to Bayesian techniques. This makes the book somewhat incomplete or outdated.

In conclusion, the book is an excellent introduction to the language and techniques of classical statistics with perfect suitability for a medical audience. It should be very useful for short courses intending to make the physician able to talk to statisticians.

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10th edn T. D. V. Swinscow and M. J. Campbell, 2002 London, BMJ Books viii + 158 pp.,
£11.95 ISBN 0-7279-1552-5

This little book became a best seller at its first appearance in 1976; since then there have been many reprintings and editions.

The changes in this 10th edition are threefold. Readers are now expected to use a personal computer for data analyses, not a pocket calculator; the preface gives much helpful information about free software and other packages and appropriate Web sites. Probability tables are retained, though the book encourages the use of packages to make exact probability statements. Secondly, the use of binary data, as in much medical literature (relative risk, odds ratios, the number needed to treat or harm, etc.), now receives detailed attention. Thirdly, the book recognizes that its readers need to understand and interpret statistical results, even though they may never do any statistical calculations themselves. The chapters contain new sections on reading and reporting statistics. There remain opportunities to try out calculations for oneself. Also there are many helpful and readable references, including [Campbell's \(2001\)](#) companion to this publication for more advanced topics.

Reference Campbell, M. J. (2001) *Statistics at Square Two*. London: BMJ Books.

Freda Kemp

Epidemiol Community Health 2003;57:542 doi:10.1136/jech.57.7.542-b

Statistics at square one, 10th edn

T D V Swinscow, M J Campbell. (Pp 158; £11.95). BMJ Books, 2002. ISBN 0-7279-1552-5

[Bart Michiels](#)

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This book provides a nice overview of many basic statistical methods. It is clearly focused to be used by, for example, epidemiologists who need some statistical guidance. Topics that are discussed include: descriptive statistics, testing of hypotheses/construction of confidence intervals both for continuous as well as binary data, non-parametric statistics, linear regression, survival analysis.

There is a big change in this 10th edition, compared with the previous editions: because almost everyone has access to a computer nowadays, many details on the calculations for a pocket calculator have been removed. Instead, reference is made to easy software packages, even freeware if available. As a result of this, exact statements on p values are made, instead of, like in the previous editions, giving boundaries based on the distribution tables. Luckily, these tables are still kept at the end of the book.

In each chapter, an interesting section on reading and reporting statistics in the medical literature has been added. Another nice expansion in this new edition is made in the section on binary data, where summary statistics like relative risk and odds ratio are included.

The book touches many subjects, and describes them very concisely. This is convenient if you want to look up a method and apply it. But if you want to know many details on a technique, you better look into one of the references. It is good that not only formulas and calculations are given, but that also some explanation is given on related issues like trial set up or sample size.

At the end of each chapter, there is a section called “common questions”. These are very pleasant to read, and they provide short answers to typical questions. The only drawback is that these answers are in many cases not reflected in the body of the chapter.

It is a short book, covering many statistical techniques. I have very much enjoyed reading it. The book is too concise if you want to study techniques in depth, but ideal to learn how to apply all the statistical theory that is covered.

Errata for Statistics at Square One, 11th edition

Last updated on 11/19/2009

Errata is under construction. I'll update it if I find additional errors.

Chapter 1, page 5

In the paragraph that begins with “An interesting property of the median ...”, “table 1.3” should read “figure 1.2”.

Formula on page 79 of Chapter 7 “t ttests” (below). The d should be a t

$$d = \frac{(\bar{x}_1 - \bar{x}_2)}{SE (\bar{x}_1 - \bar{x}_2)}$$

The answer to one of the exercises in chapter 6 is wrong. The answer key says that the answer to question 6.1b is “true”. I believe the correct answer is “false”.

Chapter 10 twice references online resources from Vassar (pp. 112, 115), but in the URL the authors misspell the name of the university (www.faculty.vasser.edu/lowry, rather than www.faculty.vassar.edu/lowry). In addition, this URL itself is a dead link; you need to enter a bit more information to actually get to the right page (<http://faculty.vassar.edu/lowry/VassarStats.html>)