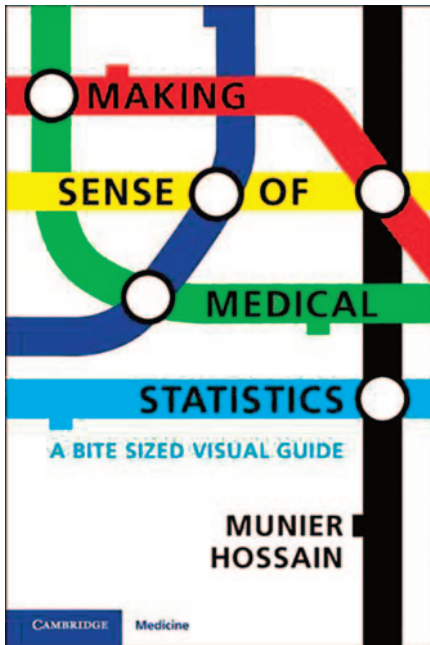


In the Bookstores



Making Sense of Medical Statistics

A Bite Sized Visual Guide

By Munier Hossain

Cambridge University Press, 2021

ISBN 9781108978156, paperback, 188 pages;

£15.24

With more and more of us reading books online or on Kindles, it is hard to judge the size of a book. Therefore, I requested a print version of this book so that I could judge if “a bite sized visual guide” really was what we would call “bite sized”, or if in fact, I would receive a tome that was more akin to *War and Peace*. When the relatively dinky 188 pages plopped onto my doormat I was more than relieved!

Munier Hossain is a consultant orthopaedic surgeon who teaches statistics and evidence-based healthcare to medical students, as well as being an editor of the *Bone and Joint Journal*. As such, he is well placed to identify which statistical tests are of most interest in clinical research and practice. As he notes, clinicians (and

medical writers!) do not need to learn the statistical formulae – but we do need to understand the concepts behind them, which tests are most appropriate, and how to interpret the results. This book aims to explain all of this in very easy to digest chunks.

Dr Hossain states that his aim is to make the book “fun, relevant, interactive and visual” and to a large extent, I think that he has achieved this well. It is a very easy-to-read book, split into 19 chapters that each deal with a different topic, but with increasing complexity as you might expect. The pages have sidebars with icons representing interesting anecdotes, key information, and questions to think about, and each chapter starts with learning objectives and ends with the take home messages. This “topping and tailing” is especially helpful if you just want to dip in for a quick refresher on a particular test or topic. For those wanting more information, more in-depth discussions, or practice questions beyond the questions-and-answers sections given in the book, there is more information available online.

Having discrete, manageable sections was really useful for me – it was easy to pick up and put down the book, and to skip to chapters that I was particularly interested in. The anecdotes were not especially aimed at physicians, and so were interesting for everyone, and the bullet points were especially helpful. I found the “Did you know” questions a bit distracting and at times annoying, but I think that was a personal preference and I’m sure that there are others who prefer to learn by being challenged with questions in that way (I quickly adjusted to ignoring the logo when I saw

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it on the sidebar). However, the take home messages and Q&A sections at the end of each chapter were excellent and helped to consolidate the learning from the chapter well.

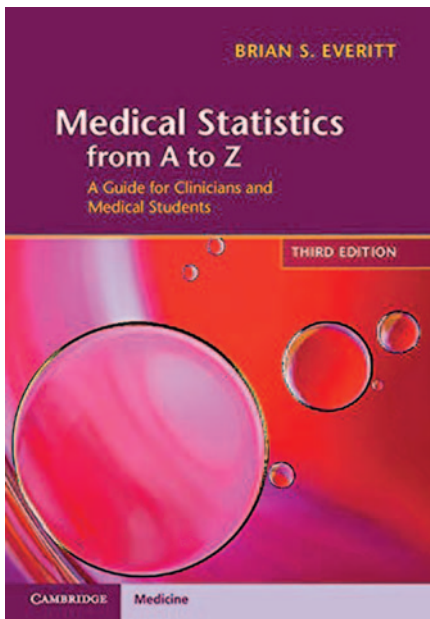
Although this is a small book, the graphics were well done and very legible. The final chapter discussed aspects of the coronavirus epidemic, which is both very timely and fascinating to read from a statistical viewpoint. The author cleverly uses the mishandling of the coronavirus statistics in government briefings to explain how data can be manipulated during clinical trial planning and reporting – one of the best ways to explain this that I have seen!

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particularly good for medical writers either brand new to the subject and needing to get started on statistics, or for those just needing a quick refresher. It is less useful for writers wanting a comprehensive coverage of medical statistical tests, their origins, and derivations – but perhaps more of that could be found online in the book’s “more information” (I confess that I did not look into this in any detail!). The Glossary section at the end is well worth a look and is almost worth having the book for that alone. Overall, I would highly recommend this book for

medical writers – there are few of us who don’t need to check up on some stats tests every once in a while, and this is a quick, easy, and highly digestible way to do it!



Medical Statistics from A to Z
A Guide for Clinicians and Medical Students
 By Brian S Everitt
 Cambridge University Press, 2021
 ISBN 978-1108826464 (paperback),
 3rd Edition, 292 pages; £29.99

Brian Everitt is Professor Emeritus at King's College, London, and has written many books on complex statistical methods. However, unlike many of his other books, *Medical Statistics from A to Z* is aimed at those with little experience of medical research and clinical trials. The compact guide undertakes to explain “non-technical definitions” of complex statistical and clinical terminology. The terms defined in the book cover a wide range of words, phrases, and abbreviations associated with medical statistics, epidemiological, and clinical research. In this third edition 150 new definitions have been added to *Medical Statistics from A to Z* to provide over 1500 terms in total.

As expected from the title, the terms are ordered alphabetically, and a suitable definition provided for each term or phrase. Additionally, within most definitions the author has provided references to allow a reader to access further information if they wish to delve deeper into the subject. This turns *Medical Statistics from A to Z* into a more superior reference handbook.

To assist the reader further, Professor Everitt has provided internal cross-references (noted in a different typeface) to guide the reader to related and useful clarifications elsewhere in the book. From my hard copy version, I cannot determine if these internal cross-references are all active links. From Amazon, I can see that some links in the Kindle version are active; if this function is fully active it will be very useful and allow the reader to efficiently navigate the connected points of information in the book.

The author has included 88 example figures to align with relevant associated definitions. For example, to supplement the definition of “scatter diagram” there are sample scatter plots provided. Within the definition the author usefully explains how to interpret each of the example plots presented in the accompanying figure. Additionally, cross references to other related data display methods are provided (namely: bubble plot, correlation coefficient, and scatterplot matrix) all of which have their own example figures to help the reader follow the explanation. The presentation of relevant figures embedded alongside descriptive explanations is useful in helping the non-statistician understand terms more fully.

As well as providing definitions, many statistical and clinical abbreviations are also defined. For instance, NOEL (no observed effect level) and NNT (number needed to treat). For pharmacokinetic terms AUC (area under the curve), T_{max} (author definition: the time at which a patient's highest recorded value occurs), C_{max} (author definition: the highest recorded response value for a subject) a figure depicting a

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time course of plasma concentration is provided to illustrate these pharmacokinetic terms. Again, use of an illustrative figure amplifies the helpfulness of the descriptive explanation.

Alongside some definitions, the author offers his own sage advice for inexperienced writers, for example: “Graphical deception” he defines as “...displays which may mislead the unwary either by design or error...” A misleading presentation of data should not be employed by writers under any circumstances, and by highlighting and defining this term the author is providing a reminder to be on the lookout for data which might be presented by others in this misleading way.

For those who are not experts in statistics, there are useful pointers and warnings using text presented in shaded boxes to highlight some difficulties that can occur with certain statistical techniques. For example:

“Imputation: Single imputation of missing values ‘invents’ data, which may lead to overstatements of precision, that is, standard errors that are underestimated, p-values of tests that are too small and confidence intervals that do not cover the true parameter at the stated rate. Multiple imputation overcomes some of these problems.”

Constructing the book as an A-Z of medical statistics allows the reader to quickly and easily identify definitions and clarifications which are often accompanied by the author's own nuggets of statistical wisdom. One minor point: a few non-statistical definitions look out of place, (e.g., “internet” or “Electronic mail”) and are likely to be a left over from an earlier edition (first published in 2003). They do not detract from the usefulness of the book and overall, this book should be a welcome resource for medical writers who are not statistical experts.



This is called the hash, pound, or number character. A hashtag is a keyword or set of keywords that is preceded by the # character. It is used in social media to create a thread of conversations around a specific theme or topic conveyed in short texts or microblogs. It is commonly used in Twitter, Instagram, YouTube, Pinterest, etc.

A dictionary of most common hashtags can be found at <https://www.hashtags.org/definition/~h/>. For your info, EMWA is compiling a list of standardised hashtags for our social media use.



This is called the “at” sign or symbol. The @ sign is part of email addresses and social media user names (“handles”). Our EMWA handles are as follows: @Official_EMWA (Twitter), @EMWA (LinkedIn), and @europeanmedicalwritersassociation (Facebook)

The two most important keys on your keyboard