Peter D. Fabricant

Practical Clinical Research Design and Application

A Primer for Physicians, Surgeons, and Clinical Healthcare Professionals

Springer

Practical Clinical Research Design and Application

Peter D. Fabricant

Practical Clinical Research Design and Application

A Primer for Physicians, Surgeons, and Clinical Healthcare Professionals

Springer

Peter D. Fabricant, MD, MPH
Associate Professor of Orthopedic Surgery
Hospital for Special Surgery
New York, NY, USA

ISBN 978-3-031-58379-7 ISBN 978-3-031-58380-3 (eBook)
https://doi.org/10.1007/978-3-031-58380-3

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

To Son and Avery, my constant source of support and encouragement in every way.

Preface

The practice of medicine and surgery requires dedication to lifelong learning. As such, every practicing physician, surgeon, advanced practice provider, and allied health professional interacts regularly with peer-reviewed literature, either while creating it or consuming it. Despite the countless hours over many years spent in formal clinical training, many clinicians and clinician-authors lack advanced training or a working nuanced knowledge of research methodology and study design. Institutions have responded to this gap by reinforcing their ranks with statistical and methodological support in the form of data analysts, epidemiologists, and biostatisticians. However, clinicians are too often unable to "talk the methodological talk" to guide them. This ultimately results in a stark disconnect between clinically relevant aspects of research (i.e., what clinicians want to study) and appropriate study design (i.e., choosing and executing the correct methodology to answer the question).

I wrote this book after realizing the need for a concise, readable, and practical guide for clinicians to read and reference. Although many textbooks will "get into the weeds" with statistical and epidemiological theory and equations, they are not easily digestible by trainees and practicing clinicians who want pragmatic knowledge of this content in order to design their own studies or enhance their understanding of the medical literature.

It is my hope that this book can serve as a standalone text "written by a clinician, for clinicians," but from the perspective of someone with formal training in research methodology, biostatistics, and epidemiology.

New York, NY, USA — Peter D. Fabricant, MD, MPH

Acknowledgments

I would like to sincerely thank Dr. Shevaun Doyle who inspired the idea for this book and spent many hours reviewing and editing the work, and Dr. Rob Rozbruch for helping formulate my ideas into a formal book proposal.

My wife, Dr. Son McLaren, deserves special recognition for her thoughtful and thorough editorial critique as well as serving as a friendly debate partner for much of this book's contents.

I would also like to thank my research assistants during this time, Preston Gross and Ruthie Jones, for their help with manuscript preparation and figure production.

Finally, I would like to acknowledge my mentors, colleagues, and Hospital for Special Surgery, all of whom have created an environment in which to build a thriving clinical practice while meaningfully contributing to research and education.

Contents