

FOURTH EDITION

INTRODUCTION TO

Research and Medical Literature

for Health Professionals

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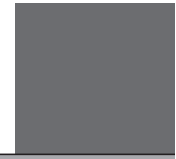
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Dedication

This book is dedicated to all the people who made it happen. The contributors to this book have put forth their effort to improve the research capabilities of all healthcare professionals, present and future. It is rare for authors from so many professions to collaborate on such an effort.

We further dedicate this book to our friends and colleagues at Jones & Bartlett Learning. They work behind the scenes to make us look good.

Ultimately, the contributors and publishers want this to be a successful book that helps every reader in their understanding of research and what it means to the people who benefit from our healthcare efforts.

JGF

JDB



Preface

The editors of and contributors to this book are dedicated teachers, researchers, administrators, and practitioners in healthcare professions. They have worked tirelessly to make this book readable, understandable, and useful for students and practitioners in healthcare professions. Our intent is to provide a tool that can be the first step in understanding research and, perhaps, the first step in a research career. We hope this book places that first step on a sound footing without intimidation.

Research articles, news flashes, and advertisements bombard us daily. To make sense of it all, we must be able to interpret and apply the information in our patients' best interests. This skill is a critical requirement of clinical practice in today's world, and it requires an understanding of the research process.

CONCEPTUAL APPROACH

We have tried to present our material in stepwise order, beginning with the protection of human subjects and the formation of a research question. Next, we consider different types of literature review and research methodologies. The analysis,

results, and discussion sections follow. We also consider the writing and publication process. Finally, a chapter on the interpretation of the literature covers the skills a health professional must develop to be a consumer of the literature.

Ultimately, understanding the research process and interpretation of the research literature are inextricable—this book addresses both at the basic level. Our contributors represent a wide range of healthcare and education professionals with expertise in different aspects of research; however, each contributor has written with the novice researcher or clinician in mind. Prior knowledge of research is not assumed.

ORGANIZATION AND FEATURES

Each chapter begins with a Chapter Overview designed to relate the essential information covered in the chapter. Basic Learning Objectives for the chapter are also provided. The important key terms for each chapter are highlighted in bold font, with definitions provided in the glossary. In most chapters, tables and figures are used to help summarize key information. The overall scheme allows

the reader to move naturally through the research process, ending with concepts needed to interpret the research of others.

NEW TO THIS EDITION

The changes in this edition are based on the feedback from readers of the previous edition. A newly revised chapter on the regulatory protection of human subjects provides readers with a comprehensive look at the workings of the institutional review board. We have added new chapters covering systematic reviews, qualitative research, and statistics. Along with these new chapters, the editing and reorganization of the chapters from the previous edition provides the reader enhanced content without expanding the scope of the book beyond the beginner stage.

INSTRUCTOR RESOURCES

Qualified instructors can receive the full suite of Instructor Resources, including the following:

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J. Glenn Forister

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Foreword

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Over the past two decades, I have devoted thousands of hours, as a teacher, advisor, and thesis or dissertation committee member, to working with scores of students dealing with a research project of some type. These students in the allied health professions, nursing, dentistry, and biomedical sciences requested assistance with refining research questions, tying theories together, laying out research designs, planning for data collection and analyses, and relating their research findings to their research goals and specific aims. Other students required assistance in interpreting published research and applying the results to their anticipated practice. In the process, I often scoured my personal library of references on research methods and statistics to find just the right chapter or article that would enable the student to gain the insight they required to become more independent as a “consumer” of research literature or fledgling researcher. I often came up short because the book wasn’t exactly what the student needed. The examples were from a different discipline, making the information difficult to apply; the content was too basic and theoretical, making the information difficult to understand; or the information was outdated, not taking into account technological advances that make the conduct of research easier.

I wish now that I had had a book such as *Introduction to Research and Medical Literature for Health Professionals, Fourth Edition*, to lend. It would have made my task simpler and would have enlightened the student far better than what I was able to provide at the time. This book, edited by my colleagues J. Glenn Forister and J. Dennis Blessing, is the first research methods textbook written specifically for students in the allied health professions. Both gentlemen are respected physician assistant educators, researchers, and scholars. Dr. Blessing has received numerous national awards for his contributions to education and research, and Mr. Forister is recognized as an outstanding teacher and researcher.

Why a book on allied health research methods? On the one hand, one may argue that research methods are research methods and data analysis techniques are data analysis techniques, regardless of the discipline, and that is true to some extent. On the other hand, there are many good reasons for a book specifically for allied health professions students.

First, the allied health professions are maturing at a rapid rate and are evolving into distinctive professions in their own right, with their own professional concerns, clinical techniques, roles within healthcare systems, and practice traditions. These factors often

lead to research questions that can and should be answered and, in turn, research findings must be understood and applied by students and practitioners.

Second, as the allied health professions evolve, greater demands are placed on practitioners for responsibility and accountability in health care. Increasingly, practitioners are expected to participate as full members of healthcare teams who contribute expertise on par with physicians, nurses, dentists, and other team members. Therefore, allied health professionals must stay current on the research in their disciplines and must understand how research finding *A* or technique *X* applies to the care of their patients or clients, because it is unlikely that other members of the team will be able to contribute that same expertise.

Third, allied health professionals must demonstrate the efficacy of their contributions to health and wellness. Evidence-based care, economic imperatives, and professional ethics require us to show concretely that research finding *A* or technique *X* actually does result in better outcomes or reduce costs. The days of justifying a procedure or clinical practice by invoking tradition are quickly fading away.

Finally, allied health research tends to be grounded in the real-life experiences of allied health clinicians, many of whom have extended therapeutic care relationships with patients, clients, and their families. Other allied health personnel such as laboratory scientists and health information professionals may have no or limited direct contact with patients or clients. Their vital contributions lead to other research opportunities that range from basic scientific mechanisms to investigations into human factors (person–program or person–machine interfaces) that result in more accurate laboratory tests or more efficient, productive, and useful information systems. The nature of these relationships and their role in treatment, healing, and wellness can and should shape the kinds of research questions that are posed, methods used for answering the questions, and even the theory that shapes practice.

Fulfilling as a research career may be, it is unlikely that a large proportion of students reading

Introduction to Research and Medical Literature for Health Professionals, Fourth Edition, will pursue a career in allied health research. Some will practice in clinical settings as clinician-researchers, research partners, or research participants. The majority, however, will be informed consumers of research as they apply new knowledge, new procedures, and new techniques to day-to-day clinical care. All will require competencies in reading and comprehending research reports, interpreting and applying results, judging the adequacy of research practices, and drawing justifiable conclusions.

The editors and authors of this book are expert educators, researchers, and academics who have “been there and done that.” They speak from experience in guiding students and conducting research. This book is a valuable introduction to the major considerations in planning and carrying out research projects, guidelines for judging the quality of investigations, cautions for interpreting and applying findings, and essential resources. The topics range from the process for identifying a “researchable” problem and focusing research questions to finding the appropriate journal for your manuscript. Research techniques are explained from positivist and post-positivist paradigms to qualitative methods. Ethical considerations of human research are described, and guidelines for writing a research report are provided. Community-based participatory research, an emerging expectation in biomedical research, is explained and guidelines are provided for planning and conducting such research. Chapters and sections that describe the full array of study types that fall under the term *research* are particularly valuable because they can stimulate creative thinking about options for answering research questions and, even, what kinds of questions are “legitimate.”

Regardless of the ultimate career aspirations of the allied health professions student reading this book, this is one that you will keep on your shelf and refer to often. I know that I will keep a copy (or two or three) handy for that student who knocks on my door asking for some advice about a perplexing research project.



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