

CONTENTS

Preface **ix** ♦ Study Tips **xi** ♦ Acknowledgments **xiii**

PART I Overview of the Research Process

1

CHAPTER 1	Introduction to Research in Physical Activity.	3
	The Nature of Research	3
	Unscientific Versus Scientific Methods of Problem Solving	10
	Alternative Models of Research	14
	Types of Research	17
	Overview of the Research Process.	22
	Parts of a Thesis: A Reflection on the Steps in the Research Process.	22
	Summary.	24
CHAPTER 2	Developing the Problem and Using the Literature.	25
	Identifying the Research Problem	25
	Purpose of the Literature Review	29
	Basic Literature Search Strategies	31
	Steps in the Literature Search	32
	Summary.	50
CHAPTER 3	Presenting the Problem.	53
	Choosing the Title.	53
	Writing the Introduction.	54
	Stating the Research Problem	56
	Presenting the Research Hypothesis	58
	Operationally Defining Your Terms	59
	Basic Assumptions, Delimitations, and Limitations	59
	Justifying the Significance of the Study	62
	Differences Between the Thesis and the Research Article	63
	Summary.	64
CHAPTER 4	Formulating the Method.	67
	How to Present Methodological Details	68
	Why Planning the Method Is Important	68
	Two Principles for Planning Experiments	69
	Describing Participants	69
	Describing Instruments.	71
	Describing Procedures.	72
	Describing Design and Analysis	74
	Establishing Cause and Effect	76
	Interaction of Participants, Measurements, and Treatments	77
	Summary.	78

CHAPTER 5 Ethical Issues in Research and Scholarship 79

Seven Areas of Scientific Dishonesty 79

Ethical Issues Regarding Copyright 85

Model for Considering Scientific Misconduct 85

Working With Faculty 88

Protecting Human Participants 90

Protecting Animal Subjects 92

Summary 93

PART II Statistical and Measurement 97

Concepts in Research

CHAPTER 6 Becoming Acquainted With Statistical Concepts 99

Why We Need Statistics 99

Use of Computers in Statistical Analysis 101

Description and Inference Are Not Statistical Techniques 101

Ways to Select a Sample 101

Justifying Post Hoc Explanations 103

Difficulty of Random Sampling and Assignment:

How Good Does It Have to Be? 103

Unit of Analysis 104

Measures of Central Tendency and Variability 105

Basic Concepts of Statistical Techniques 109

Data for Use in the Remaining Statistical Chapters 112

Summary 112

CHAPTER 7 Statistical Issues in Research Planning and Evaluation. . . 115

Probability 115

Meaningfulness (Effect Size) 117

Power 118

Using Information in the Context of the Study 121

Summary 124

CHAPTER 8 Relationships Among Variables 125

What Correlational Research Investigates 125

Understanding the Nature of Correlation 126

What the Coefficient of Correlation Means 132

Using Correlation for Prediction 135

Partial Correlation 138

Uses of Semipartial Correlation 138

Procedures for Multiple Regression 139

Multivariate Forms of Correlation 142

Summary 144

CHAPTER 9 Differences Among Groups 147

How Statistics Test Differences 147

Types of *t* Tests 148

Interpreting *t* 153

Relationship of *t* and *r* 156

	Analysis of Variance	158
	Analysis of Covariance	171
	Experimentwise Error Rate	172
	Understanding Multivariate Techniques	173
	Summary	177
CHAPTER 10	Nonparametric Techniques	181
	Chi Square: Testing the Observed Versus the Expected	182
	Procedures for Rank-Order Data	187
	Correlation	188
	Differences Among Groups	189
	Summary	192
CHAPTER 11	Measuring Research Variables	193
	Validity	193
	Reliability	197
	Methods of Establishing Reliability	201
	Intertester Reliability (Objectivity)	203
	Standard Error of Measurement	203
	Using Standard Scores to Compare Performance	204
	Measuring Movement	205
	Measuring Written Responses	206
	Measuring Affective Behavior	206
	Scales for Measuring Affective Behavior	208
	Measuring Knowledge	210
	Item Response Theory	211
	Summary	213
PART III Types of Research		215
CHAPTER 12	Historical Research in Physical Activity	217
	Research Paradigms	217
	Lines of Inquiry and Topics	219
	Designing the Research	222
	Working With the Evidence	222
	Summary	230
CHAPTER 13	Philosophic Research in Physical Activity	235
	Identifying the Purposes of Philosophic Research	236
	Locating a Research Problem	239
	Analyzing a Research Problem	239
	Summary	247
CHAPTER 14	Research Synthesis (Meta-Analysis)	253
	Using Meta-Analysis to Synthesize Research	254
	Presenting Effect Size Data	263
	Summary	263

CHAPTER 15	Surveys	273
	Questionnaires	273
	Electronic Surveys	284
	Delphi Method	285
	Personal Interviews	285
	Normative Survey	288
	Summary	289
CHAPTER 16	Other Descriptive Research Methods	291
	Developmental Research	291
	Case Studies	295
	Job Analysis	297
	Observational Research	298
	Unobtrusive Research Techniques	302
	Correlational Research	303
	Summary	304
CHAPTER 17	Physical Activity Epidemiology Research	307
	Observational Versus Experimental Research	308
	What Is Epidemiology?	309
	Physical Activity Measurement Definitions	311
	Assessment of Physical Activity	312
	Epidemiologic Study Designs	315
	Reading and Interpreting a Physical Activity Epidemiologic Study	324
	Summary	327
CHAPTER 18	Experimental and Quasi-Experimental Research	329
	Sources of Invalidity	330
	Threats to Internal Validity	331
	Threats to External Validity	334
	Controlling Threats to Internal Validity	336
	Controlling Threats to External Validity	338
	Types of Designs	338
	Summary	351
CHAPTER 19	Qualitative Research	353
	Procedures in Qualitative Research	354
	Analysis of the Data	359
	Concluding Remarks	367
	Summary	368
CHAPTER 20	Mixed-Methods Research	371
	Combining Quantitative and Qualitative Methods	372
	Designing Mixed-Methods Research	373
	Specific Issues in Mixed-Methods Research	373
	Examples of Mixed-Methods Research	374
	Summary	375

PART IV Writing the Research Report 377

CHAPTER 21 Completing the Research Process 379

Research Proposal	379
Developing a Good Introduction	379
Describing the Method	381
The Proposal Process	382
Preparing and Presenting Qualitative Research Proposals	386
Writing Proposals for Granting Agencies	386
Submitting Internal Proposals	388
Completing Your Thesis or Dissertation	388
Results and Discussion	388
Handling Multiple Experiments in a Single Report	392
Using Tables and Figures	393
Summary	400

CHAPTER 22 Ways of Reporting Research..... 403

Basic Writing Guidelines	403
A Brief Word About Acknowledgments	404
Thesis and Dissertation Format: Traditional Versus Journal	404
Helpful Hints for Successful Journal Writing	410
Revising Research Papers	412
Writing Abstracts	415
Making Oral and Poster Presentations	416
Summary	419

Appendix: Statistical Tables 421

References 435 ♦ Author Index 445 ♦ Subject Index 447 ♦ About the Authors 457

♦ *Part I* is an overview of the research process including developing the problem, using the literature, and planning the study.

♦ *Part II* introduces statistical and measurement issues in research, including statistical descriptions, power, relationships among variables, differences among groups, nonparametric procedures, and measurement issues in research.

♦ *Part III* presents the various types of, or approaches to, research including historical, philosophical, research synthesis, survey, descriptive, epidemiological, experimental, qualitative, and mixed methods.

♦ *Part IV* is designed to help you complete the research process, including writing the results and discussion, organizing the research paper, developing good figures and tables, and presenting research in written and oral forms.

♦ The appendix includes statistical tables.

Instructors using this text in their courses will find an instructor guide, test bank, presentation package, and image bank available to them at www.HumanKinetics.com/ResearchMethodsInPhysicalActivity. The image bank is new to this edition and includes nearly all of the art, tables, and example elements from the text, which can be used to create custom presentations.

Although the format of the book remains similar to that of the fifth edition, we have made a number of changes that we hope improve and update the text. Various people have read and reviewed the previous edition and provided helpful comments, including the many students we have taught and faculty who use the book to teach research

eBook
available at
your campus bookstore
or HumanKinetics.com