## Contents

### Part I  Health Behaviors: Processes and Measures

1. **Social and Environmental Determinants of Health Behaviors** ........................................ 3  
   Verity J. Cleland, Kylie Ball, and David Crawford

2. **Cognitive Determinants of Health Behavior** ......................................................... 19  
   Mark Conner

3. **Assessment of Physical Activity in Research and Clinical Practice** .......................... 31  
   Lephuong Ong and James A. Blumenthal

4. **Dietary Assessment in Behavioral Medicine** .......................................................... 49  
   Marian L. Neuhouser

5. **Assessment of Sexual Behavior** .............................................................................. 59  
   Lori A.J. Scott-Sheldon, Seth C. Kalichman, and Michael P. Carey

6. **By Force of Habit** .................................................................................................. 73  
   Bas Verplanken

7. **Adherence to Medical Advice: Processes and Measurement** ................................. 83  
   Jacqueline Dunbar-Jacob, Martin P. Houze, Cameron Kramer, Faith Luyster, and Maura McCall

### Part II  Psychological Processes and Measures

8. **Ecological Validity for Patient Reported Outcomes** .............................................. 99  
   Arthur A. Stone and Saul S. Shiffman

9. **Item Response Theory and Its Application to Measurement in Behavioral Medicine** 113  
   Mee-Ae Kim-O and Susan E. Embretson

10. **Applications of Neurocognitive Assessment in Behavioral Medicine** .................... 125  
    Shari R. Waldstein, Carrington Rice Wendell, and Megan M. Hosey
## Contents

### Part I Physical Processes

11 Lay Representations of Illness and Treatment: A Framework for Action .......... 137
   Howard Leventhal, Jessica Y. Brelan, Pablo A. Mora, and Elaine A. Leventhal

12 Conceptualization, Measurement, and Analysis of Negative Affective Risk Factors .......... 155
   Timothy W. Smith

13 Hostility and Health .......... 169
   John C. Barefoot and Redford B. Williams

14 Positive Well-Being and Health .......... 185
   Andrew Steptoe

15 Coping and Health .......... 197
   Charles S. Carver and Sara Vargas

### Part III Social and Interpersonal Processes

16 Experimental Approaches to Social Interaction for the Behavioral Medicine Toolbox .......... 211
   Jerry Suls and M. Bryant Howren

17 Social Support and Physical Health: Links and Mechanisms .......... 225
   Tara L. Gruenewald and Teresa E. Seeman

18 Social Networks and Health .......... 237
   Ai Ikeda and Ichiro Kawachi

19 Social Norms and Health Behavior .......... 263
   Allecia E. Reid, Robert B. Cialdini, and Leona S. Aiken

   Gerard Hastings and Ray Lowry

### Part IV Epidemiological and Population Perspectives

21 Assessment of Psychosocial Factors in Population Studies .......... 291
   Susan A. Everson-Rose and Cari J. Clark

22 Socio-economic Position and Health .......... 307
   Tarani Chandola and Michael G. Marmot

23 Race, Ethnicity, and Health in a Global Context .......... 321
   Shawn D. Boykin and David R. Williams

24 Neighborhood Factors in Health .......... 341
   Mahasin S. Mujahid and Ana V. Diez Roux
25 Health Literacy: A Brief Introduction ..................................... 355
Michael S. Wolf, Stacy Cooper Bailey, and Kirsten J. McCaffery

26 Screening and Early Detection of Cancer: A Population Perspective ..................................... 367
Laura A.V. Marlow, Jo Waller, and Jane Wardle

27 The Impact of Behavioral Interventions in Public Health ........ 383
Noreen M. Clark, Melissa A. Valerio, and Christy R. Houle

Part V Genetic Process in Behavioral Medicine

28 Quantitative Genetics in Behavioral Medicine ................. 399
Eco de Geus

29 Candidate Gene and Genome-Wide Association Studies in Behavioral Medicine .......................... 423
Ilja M. Nolte, Jeanne M. McCaffery, and Harold Snieder

30 Functional Genomic Approaches in Behavioral Medicine Research ............................................. 443
Gregory E. Miller and Steve W. Cole

31 Genetics of Stress: Gene–Stress Correlation and Interaction .................................................. 455
Stephen B. Manuck and Jeanne M. McCaffery

32 Nicotine Dependence and Pharmacogenetics .................... 479
Riju Ray, Robert Schnoll, and Caryn Lerman

33 Genetics of Obesity and Diabetes .................................. 499
Karani S. Vimalesswaran and Ruth J.F. Loos

Part VI Development and the Life Course

34 A Life Course Approach to Health Behaviors: Theory and Methods ............................................. 525
Gita D. Mishra, Yoav Ben-Shlomo, and Diana Kuh

35 Prenatal Origins of Development Health ......................... 541
Christopher L. Coe

36 The Impact of Early Adversity on Health ......................... 559
Shelley E. Taylor

37 Health Disparities in Adolescence ................................... 571
Hannah M.C. Schreier and Edith Chen

38 Reproductive Hormones and Stages of Life in Women: Moderators of Mood and Cardiovascular Health .................................................. 585
Susan S. Girdler and Kathleen C. Light
39 Aging and Behavioral Medicine .................. 603
Brenda W.J.H. Penninx and Nicole Vogelzangs

Part VII Biological Measures and Biomarkers

40 Use of Biological Measures in Behavioral Medicine ........ 619
Andrew Steptoe and Lydia Poole

41 Laboratory Stress Testing Methodology ............... 633
William Gerin

42 Stress and Allostasis .................................. 649
Ilia N. Karatsoreos and Bruce S. McEwen

43 Neuroendocrine Measures in Behavioral Medicine ......... 659
Petra Puetz, Silja Bellingrath, Andrea Gierens,
and Dirk H. Hellhammer

44 Immune Measures in Behavioral Medicine Research:
Procedures and Implications ............................. 671
Michael T. Bailey and Ronald Glaser

45 Circulating Biomarkers of Inflammation, Adhesion,
and Hemostasis in Behavioral Medicine ............ 685
Paul J. Mills and Roland von Känel

46 The Metabolic Syndrome, Obesity, and Insulin Resistance .... 705
Armando J. Mendez, Ronald B. Goldberg,
and Philip M. McCabe

47 The Non-invasive Assessment of Autonomic
Influences on the Heart Using Impedance
Cardiography and Heart Rate Variability .............. 723
Julian F. Thayer, Anita L. Hansen,
and Bjorn Helge Johnsen

48 Cardiac Measures ..................................... 741
Gina T. Eubanks, Mustafa Hassan, and David S. Sheps

49 Behavioral Medicine and Sleep: Concepts, Measures,
and Methods ........................................... 749
Martica H. Hall

Part VIII Brain Function and Neuroimaging

50 Neuroimaging Methods in Behavioral Medicine .......... 769
Peter J. Gianaros, Marcus A. Gray,
Ikechukwu Onyewuenyi, and Hugo D. Critchley

51 Applications of Neuroimaging in Behavioral Medicine .... 783
Marcus A. Gray, Peter J. Gianaros,
and Hugo D. Critchley
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>Neuroimaging of Depression and Other Emotional States</td>
<td>803</td>
</tr>
<tr>
<td></td>
<td>Scott C. Matthews and Richard D. Lane</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>The Electric Brain and Behavioral Medicine</td>
<td>821</td>
</tr>
<tr>
<td></td>
<td>J. Richard Jennings, Ydwine Zanstra, and Victoria Egizio</td>
<td></td>
</tr>
<tr>
<td>Part IX</td>
<td>Statistical Methods</td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>Reporting Results in Behavioral Medicine</td>
<td>845</td>
</tr>
<tr>
<td></td>
<td>Michael A. Babyak</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>Moderators and Mediators: The MacArthur Updated View</td>
<td>869</td>
</tr>
<tr>
<td></td>
<td>Helena Chmura Kraemer</td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>Multilevel Modeling</td>
<td>881</td>
</tr>
<tr>
<td></td>
<td>S.V. Subramanian</td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>Structural Equation Modeling in Behavioral Medicine Research</td>
<td>895</td>
</tr>
<tr>
<td></td>
<td>Maria Magdalena Llabre</td>
<td></td>
</tr>
<tr>
<td>58</td>
<td>Meta-analysis</td>
<td>909</td>
</tr>
<tr>
<td></td>
<td>Larry V. Hedges and Elizabeth Tipton</td>
<td></td>
</tr>
<tr>
<td>Part X</td>
<td>Behavioral and Psychosocial Interventions</td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>Trial Design in Behavioral Medicine</td>
<td>925</td>
</tr>
<tr>
<td></td>
<td>Kenneth E. Freedland, Robert M. Carney, and Patrick J. Lustman</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>Methodological Issues in Randomized Controlled Trials for the Treatment of Psychiatric Comorbidity in Medical Illness</td>
<td>941</td>
</tr>
<tr>
<td></td>
<td>David C. Mohr, Sarah W. Kinsinger, and Jenna Duffecy</td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Quality of Life in Light of Appraisal and Response Shift</td>
<td>955</td>
</tr>
<tr>
<td></td>
<td>Sara Ahmed and Carolyn Schwartz</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Behavioral Interventions for Prevention and Management of Chronic Disease</td>
<td>969</td>
</tr>
<tr>
<td></td>
<td>Brian Oldenburg, Pilvikki Absetz, and Carina K.Y. Chan</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>Psychosocial–Behavioral Interventions and Chronic Disease</td>
<td>989</td>
</tr>
<tr>
<td></td>
<td>Neil Schneiderman, Michael H. Antoni, Frank J. Penedo, and Gail H. Ironson</td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>The Role of Interactive Communication Technologies in Behavioral Medicine</td>
<td>1009</td>
</tr>
<tr>
<td></td>
<td>Victor J. Strecher</td>
<td></td>
</tr>
</tbody>
</table>
65 Behavioral Medicine, Prevention, and Health Reform: Linking Evidence-Based Clinical and Public Health Strategies for Population Health Behavior Change ........................................... 1021
Judith K. Ockene and C. Tracy Orleans

Subject Index ............................................................. 1037
Handbook of Behavioral Medicine
Methods and Applications
Steptoe, A. (Ed.)
2010, XXIV, 1074 p., Hardcover
ISBN: 978-0-387-09487-8