

FOURTH EDITION



THE HANDBOOK



of
HEALTH
BEHAVIOR
CHANGE



Kristin A. Riekert
Judith K. Ockene
Lori Pbert
Editors



SPRINGER  PUBLISHING COMPANY



***The* HANDBOOK of HEALTH
BEHAVIOR CHANGE**

Kristin A. Riekert, PhD, is an Associate Professor of Medicine in the Division of Pulmonary and Critical Care Medicine, Department of Medicine at the Johns Hopkins University and Co-Director of the Johns Hopkins Adherence Research Center (JHARC). Dr. Riekert received her PhD in Clinical Psychology from Case Western Reserve University where she specialized in pediatric psychology. She completed postdoctoral training in health psychology at the Johns Hopkins University. Dr. Riekert is Principal Investigator or Co-Investigator on several National Institutes of Health and foundation sponsored intervention trials focused on improving adherence and health outcomes in cystic fibrosis, asthma, chronic kidney disease, sickle cell disease, and secondhand smoke reduction.

Judith K. Ockene, PhD, MEd, MA, is a tenured Professor of Medicine and Chief of the Division of Preventive and Behavioral Medicine, University of Massachusetts Medical School. She holds the Barbara Helen Smith Chair in Preventive and Behavioral Medicine and is Associate Vice Provost for Gender and Equity. Dr. Ockene is the recipient of numerous National Institutes of Health grants funding research in the prevention of illness and disability and the promotion of health and quality of life for individuals and communities. Much of her research addresses the risk behaviors of tobacco, alcohol, and diet; women's health; and training physicians and medical students in counseling patients for behavior change. She also teaches medical, graduate, and public health students and clinicians how to help patients make lifestyle changes. Dr. Ockene has over 250 peer-reviewed publications and was a scientific editor of two Surgeon General's Reports on Smoking and Health. She is a past member of the U.S. Preventive Services Task Force and past President of the Society of Behavioral Medicine. Dr. Ockene has received several school, state, and national mentoring awards, including the Society of Behavioral Medicine Distinguished Mentor Award in 2009.

Lori Pbert, PhD, is a Professor of Medicine and Associate Chief of the Division of Preventive and Behavioral Medicine in the Department of Medicine at the University of Massachusetts Medical School (UMMS). She is Director of the Center for Tobacco Treatment Research and Training (CTTRT) and of the UMMS Tobacco Treatment Specialist Training and Certification Program. Dr. Pbert is a clinical and translational researcher with over 25 years of experience conducting clinical and community-based trials. She is the recipient of numerous grants from National Institutes of Health funding research in the design and evaluation of behavioral interventions for health promotion and risk behavior change in real-world settings. Dr. Pbert teaches medical and graduate students, physicians, and other health care providers in the theory and practice of health behavior change. She is a fellow in the Society of Behavioral Medicine and a founding member of the American Academy of Pediatrics Center for Child Health Research Tobacco Consortium.

The HANDBOOK *of* HEALTH BEHAVIOR CHANGE

FOURTH EDITION

KRISTIN A. RIEKERT, PhD
JUDITH K. OCKENE, PhD, MEd, MA
LORI PBERT, PhD

Editors


SPRINGER PUBLISHING COMPANY
NEW YORK

Copyright © 2014 Springer Publishing Company, LLC

All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior permission of Springer Publishing Company, LLC, or authorization through payment of the appropriate fees to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, 978-750-8400, fax 978-646-8600, info@copyright.com or on the Web at www.copyright.com.

Springer Publishing Company, LLC
11 West 42nd Street
New York, NY 10036
www.springerpub.com

Acquisitions Editor: Sheri W. Sussman
Composition: Exeter Premedia Services Private Ltd.

ISBN: 978-0-8261-9935-5
e-book ISBN: 978-0-8261-9936-2

13 14 15 16 / 5 4 3 2 1

The author and the publisher of this Work have made every effort to use sources believed to be reliable to provide information that is accurate and compatible with the standards generally accepted at the time of publication. The author and publisher shall not be liable for any special, consequential, or exemplary damages resulting, in whole or in part, from the readers' use of, or reliance on, the information contained in this book. The publisher has no responsibility for the persistence or accuracy of URLs for external or third-party Internet websites referred to in this publication and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

Library of Congress Cataloging-in-Publication Data

Handbook of health behavior change / edited by Kristin A. Riekert, Judith K. Ockene, Lori Pbert.—4th edition.

p. ; cm.

Includes bibliographical references and index.

ISBN 978-0-8261-9935-5—ISBN 978-0-8261-9936-2 (e-book)

I. Riekert, Kristin A., editor of compilation. II. Ockene, Judith K., editor of compilation.

III. Pbert, Lori, editor of compilation.

[DNLM: 1. Health Promotion. 2. Behavior Therapy. 3. Health Behavior. 4. Patient Compliance. WA 590]

RA776.9

613-dc23

2013034868

Special discounts on bulk quantities of our books are available to corporations, professional associations, pharmaceutical companies, health care organizations, and other qualifying groups. If you are interested in a custom book, including chapters from more than one of our titles, we can provide that service as well.

For details, please contact:

Special Sales Department, Springer Publishing Company, LLC
11 West 42nd Street, 15th Floor, New York, NY 10036-8002
Phone: 877-687-7476 or 212-431-4370; Fax: 212-941-7842
E-mail: sales@springerpub.com

Printed in the United States of America by McNaughton & Gunn.

This book is dedicated to all the people and families who work hard to maintain a healthy lifestyle and take care of their loved ones' health in the midst of multiple personal, social, and cultural challenges, and to the health care professionals who work tirelessly to help their patients and communities live healthier lives.

Contents

Contributors xi

Preface xvii

Acknowledgments xxi

I THEORETICAL MODELS OF HEALTH BEHAVIOR CHANGE

1. Individual Theories 3

Noreen M. Clark and Mary N. Jaricic

2. Understanding Population Health From Multi-Level and Community-Based Models 27

Miriam L. Fitzgibbon, Angela Kong, and Lisa Thasing-Humphreys

3. Health System Models 47

Russell E. Glasgow and Karl C. Flange

II BARRIERS TO AND FACILITATORS OF LIFESTYLE CHANGE AND DISEASE MANAGEMENT

4. Psychosocial Predictors of Behavior Change 69

Suzanne L. Williams, Kelly B. Heskard-Zabierek, and M. Robin DiMatteo

5. Developmental Influences on Behavior Change: Children, Adolescents, and the Elderly 87

Crystal E. Lim, Elizabeth Schneider, and David M. Jaricic

6. Culture, Behavior, and Health 109

Milagros C. Reed, Monica L. Wang, and Janice S. Bedeian

III LIFESTYLE CHANGE/DISEASE PREVENTION INTERVENTIONS

- 7. Dietary Behaviors: Promoting Healthy Eating** 139
Caroline A. Thomson and Gary D. Foster
- 8. Physical Activity Behavior** 155
Yannis A. Côté, Jyoti Y. Sood, Sandra J. Wäster, and Abby C. King
- 9. Addressing Tobacco Use and Dependence** 179
Yael Meiri, Deena Jelinek, Roshelle B. Geyer, and Judith W. Ockene
- 10. Alcohol Prevention and Treatment: Interventions for Hazardous, Harmful, and Dependent Drinkers** 217
Ruth M. Gilbert and Peter Kater
- 11. Reducing Stress to Improve Health** 229
Ellen A. Drapeau, Jonathan Colquhoun, and Deborah M. Irving
- 12. Building a Science for Multiple-Risk Behavior Change** 245
Judith J. Prochaska, James M. Prochaska, and James O. Prochaska

IV CHRONIC DISEASE MANAGEMENT INTERVENTIONS

- 13. Chronic Disease Management Interventions: Cardiovascular Disease** 271
Lucy L. Fitzgibbon and Deborah M. Mordkoff
- 14. Diabetes Management Behaviors: The Key to Optimal Health and Quality of Life Outcomes** 291
Kang W. Chou, Jennifer K. Royman, and Michael A. Drazin
- 15. Behavioral Management of Chronic Respiratory Diseases: Examples From Asthma and Chronic Obstructive Pulmonary Disease** 309
Josie S. Ableson, Kristin A. Reider, Michelle M. Golin, Cynthia S. Ross, and Marilee C. Gillies
- 16. Chronic Infectious Disease Management Interventions** 337
Scott D. Rhodes, Anne M. Wilkin, Chien Abraham, and Laura G. Berenson
- 17. Adherence to Treatment and Lifestyle Changes Among People With Cancer** 347
Angie G. Finkenauer, David V. Johnson, and David Cella
- 18. Obesity** 363
Yan Y. Bian and Deborah W. Gah

V COMMUNITY, SYSTEM, AND PROVIDER INTERVENTIONS TO SUPPORT HEALTH BEHAVIOR CHANGE

19. **School Interventions to Support Health Behavior Change** 383
Rebecca M. Lee and Steven T. Gortmaker
20. **Prevention and Management of Chronic Disease Through Worksite Health Promotion** 397
Stephanie C. Traenkle and Barbara Latimer
21. **Health Care Provider and System Interventions Promoting Health Behavior Change** 417
Aimee C. Delancey, Jeffrey L. Coakley, and Christopher J. Hunter
22. **The Role of the Built Environment in Supporting Health Behavior Change** 437
Angie L. Crockett and Christa E. Dunton

VI HEALTH BEHAVIOR CHANGE RESEARCH METHODOLOGY

23. **Principles of Health Behavior Measurement** 465
Margot L. Hilliard
24. **Translational Research Phases in the Behavioral and Social Sciences: Adaptations From the Biomedical Sciences** 483
Stephanie C. Traenkle, Deborah L. Gaskin, Mylynn C. Reed, Sherry L. Pagoto, Kristin L. Schneider, Lisa Pbert, Monica C. Wang, Jennifer L. Allen, and Judith K. Ockene

Contributors

Claire Abraham, BA Department of Social Sciences and Health Policy, Wake Forest School of Medicine, Winston-Salem, North Carolina

Jennifer D. Allen, ScD, MPH, RN Department of Medical Oncology, Dana Farber Cancer Institute, Harvard Medical School, Boston, Massachusetts

Laura H. Bachmann, MD, MPH Department of Internal Medicine, Wake Forest Baptist Medical Center, Winston-Salem, North Carolina

Jamie S. Bodenlos, PhD Department of Psychology, Hobart and William Smith Colleges, Geneva, New York

Deborah J. Bowen, PhD Department of Community Health Sciences, Boston University, Boston, Massachusetts

Matthew M. Burg, PhD Yale University School of Medicine and Columbia University Medical Center, New York, New York

Lora E. Burke, PhD, MPH, RN Department of Health and Community Systems, University of Pittsburgh School of Nursing, Pittsburgh, Pennsylvania

David Cella, PhD Department of Medical Social Sciences, Feinberg School of Medicine, Northwestern University, Chicago, Illinois

Noreen M. Clark, PhD Center for Managing Chronic Disease, University of Michigan, Ann Arbor, Michigan

Angie L. Cradock, ScD Department of Social and Behavioral Sciences, Harvard School of Public Health, Boston, Massachusetts

M. Robin DiMatteo, PhD Department of Psychology, University of California–Riverside, Riverside, California

Anne C. Dobbmeyer, PhD, ABPP Department of Defense, Deployment Health Clinical Center, Walter Reed National Military Medical Center, Bethesda, Maryland

Ellen A. Dornelas, PhD Helen & Harry Gray Cancer Center, Hartford Hospital and University of Connecticut School of Medicine, Farmington, Connecticut

Dustin T. Duncan, ScD Department of Social and Behavioral Sciences, Harvard School of Public Health, Boston, Massachusetts

Michelle N. Eakin, PhD Department of Medicine, Division of Pulmonary and Critical Care Medicine, Johns Hopkins Adherence Research Center, Johns Hopkins University School of Medicine, Baltimore, Maryland

Barbara Estabrook, MSPH, CHES Department of Medicine, Division of Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, Massachusetts

Marian L. Fitzgibbon, PhD Department of Medicine and University of Illinois Cancer Center, University of Illinois at Chicago, Chicago, Illinois

Gary D. Foster, PhD Center for Obesity Research and Education, Temple University, Philadelphia, Pennsylvania

Jonathan Gallagher, MPsySc Department of Psychology, Beaumont Hospital, Dublin, Ireland

Russell E. Glasgow, PhD Division of Cancer Control and Population Sciences, National Cancer Institute, Rockville, Maryland

Jeffrey L. Goodie, PhD, ABPP Department of Family Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland

Steven L. Gortmaker, PhD Department of Family Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland

Lauren A. Grieco, PhD Stanford Prevention Research Center, Department of Medicine, Stanford University, Stanford, California

Michael A. Harris, PhD Department of Pediatrics, Oregon Health & Science University, Portland, Oregon

Kelly B. Haskard-Zolnierok, PhD Department of Psychology, Texas State University, San Marcos, Texas

Rashelle B. Hayes, PhD Department of Medicine, Division of Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, Massachusetts

Laura L. Hayman, PhD, RN Department of Nursing, University of Massachusetts–Boston, Boston, Massachusetts

Marisa E. Hilliard, PhD Department of Pediatrics, Psychology Section, Baylor College of Medicine and Texas Children's Hospital, Houston, Texas

Korey K. Hood, PhD Department of Pediatrics, Madison Clinic for Pediatric Diabetes, University of California, San Francisco, San Francisco, California

Christopher L. Hunter, PhD, ABPP Department of Defense, Office of the Chief Medical Officer, TRICARE Management Activity, Defense Health Headquarters, Falls Church, Virginia

Mary R. Janevic, PhD Center for Managing Chronic Disease, University of Michigan, Ann Arbor, Michigan

David M. Janicke, PhD Department of Clinical and Health Psychology, University of Florida, Gainesville, Florida

Denise Jolicoeur, MPH, CHES Division of Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, Massachusetts

Eileen Kaner, PhD Institute of Health and Society, Newcastle University, Newcastle Upon Tyne, UK

Abby C. King, PhD Departments of Health Research and Policy and Medicine, Stanford Prevention Research Center, Stanford University School of Medicine, Stanford, California

Angela Kong, PhD, MPH, RD Institute for Health Research and Policy and University of Illinois Cancer Center, University of Illinois at Chicago, Chicago, Illinois

Rebekka M. Lee, ScD Department of Social and Behavioral Sciences, Harvard School of Public Health, Boston, Massachusetts

Stephenie C. Lemon, PhD Department of Medicine, Division of Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, Massachusetts

Crystal S. Lim, PhD Department of Clinical and Health Psychology, University of Florida, Gainesville, Florida

Ruth McGovern, PhD Institute of Health and Society, Newcastle University, Newcastle Upon Tyne, UK

Monika M. Mruk, BSN Department of Nursing, University of Massachusetts–Boston, Boston, Massachusetts

Judith K. Ockene, PhD Department of Medicine, Division of Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, Massachusetts

Sherry L. Pagoto, PhD Department of Medicine, Division of Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, Massachusetts

Lori Pbert, PhD Department of Medicine, Division of Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, Massachusetts

Amy H. Peterman, PhD Department of Psychology, Health Psychology PhD Program, University of North Carolina at Charlotte, Charlotte, North Carolina

Janice M. Prochaska, PhD Pro-Change Behavior Systems, Inc., South Kingstown, Rhode Island

James O. Prochaska, PhD Department of Psychology, Cancer Prevention Research Center, University of Rhode Island, Kingston, Rhode Island

Judith J. Prochaska, PhD, MPH Stanford Prevention Research Center, Department of Medicine, Stanford University, Stanford, California

Cynthia S. Rand, PhD Department of Medicine, Division of Pulmonary and Critical Care Medicine, Johns Hopkins Adherence Research Center, Johns Hopkins University School of Medicine, Baltimore, Maryland

Jennifer K. Raymond, MD Department of Pediatrics, Oregon Health & Science University, Portland, Oregon

Scott D. Rhodes, PhD, MPH Department of Social Sciences and Health Policy, Wake Forest School of Medicine, Winston-Salem, North Carolina

Kristin A. Riekert, PhD Department of Medicine, Division of Pulmonary and Critical Care Medicine, Johns Hopkins Adherence Research Center, Johns Hopkins University School of Medicine, Baltimore, Maryland

Milagros C. Rosal, PhD Department of Medicine, Division of Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, Massachusetts

Elizabeth Schneider, PhD Department of Clinical and Health Psychology, University of Florida, Gainesville, Florida,

Kristin L. Schneider, PhD Department of Medicine, Division of Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, Massachusetts

Jylana L. Sheats, PhD Stanford Prevention Research Center, Department of Medicine, Stanford University, Stanford, California

Kurt C. Stange, MD, PhD Department of Family Medicine, Case Western Reserve University, Cleveland, Ohio

Cynthia A. Thomson, PhD, RD Mel & Enid Zuckerman College of Public Health, Canyon Ranch Center for Prevention & Health Promotion, University of Arizona, Tucson, Arizona

Melanie W. Turk, PhD, RN Duquesne University School of Nursing, Pittsburgh, Pennsylvania

Lisa Tussing-Humphreys, PhD, RD Department of Medicine and University of Illinois Cancer Center, University of Illinois at Chicago, Chicago, IL

David Victorson, PhD Department of Medical Social Sciences, Feinberg School of Medicine, Northwestern University, Chicago, Illinois

Monica L. Wang, ScD Department of Medicine, Division of Preventive and Behavioral Medicine, University of Massachusetts Medical School, Worcester, Massachusetts; Department of Social and Behavioral Sciences, Harvard School of Public Health, Boston, Massachusetts

Josie S. Welkom, PhD Department of Medicine, Division of Pulmonary and Critical Care Medicine, Johns Hopkins Adherence Research Center, Johns Hopkins University School of Medicine, Baltimore, Maryland

Aimee M. Wilkin, MD, MPH Department of Internal Medicine, Wake Forest Baptist Medical Center, Winston-Salem, North Carolina

Summer L. Williams, PhD Department of Psychology, Westfield State University, Westfield, Massachusetts

Sandra J. Winter, PhD Stanford Prevention Research Center, Department of Medicine, Stanford University, Stanford, California

Preface

The adoption and maintenance of healthy lifestyle behaviors and adhering to prescribed therapies are key to optimal health. Four lifestyle behaviors in particular—getting regular physical activity, eating a healthy diet, not smoking, and limiting alcohol consumption—contribute to a longer and healthier life. Indeed, people who engage in all four of these behaviors are significantly less likely to die early from cancer, cardiovascular disease, and other causes compared to people who do not (Ford, Zhao, Tsai, & Li, 2011). Unfortunately, in 2010, 51% of noninstitutionalized American adults had at least one chronic illness; 26% had two or more (Ward & Schiller, 2013). Moreover, chronic illnesses comprised 7 of the top 10 causes of death in 2008 including heart disease, cancer, chronic lower respiratory diseases, stroke, Alzheimer’s disease, diabetes, and kidney disease. Together, these 7 chronic illnesses accounted for approximately 67% of all deaths in the United States (Heron, 2012). It is clear that increased attention to the adoption and maintenance of behaviors for optimal health can have significant public health impact.

The overarching goal of the fourth edition *The Handbook of Health Behavior Change* is to inform health care providers, policy makers, health services, and behavioral, and social science researchers of the most current theories, challenges, and interventions for supporting health behavior change, including lifestyle behaviors and chronic disease management. *The Handbook of Health Behavior Change* was first published in 1988 and with each edition there has been growing appreciation for the critical role health behavior plays in maintaining health and well-being. Research has evolved from a primary focus on understanding predictors of engaging in positive health behaviors and the impact of health behaviors on the onset, progression, and exacerbation of diseases to the evaluation of interventions in controlled clinical trials. Now 25 years later, the themes of the previous editions continue to be relevant. In addition, the fourth edition includes new chapters that reflect current practices in the field of health behavior change, including an emphasis on the need to implement and disseminate interventions in real-world settings and a call for a focus on eliminating ever growing health disparities.

Understanding theoretical frameworks that guide the development of strategies and interventions to achieve change in behaviors and inform health behavior research is the first step in supporting meaningful and lasting health behavior change. Therefore *Section I: Chapters 1 to 3* focus on the most frequently used theoretical models in health behavior change research. While each theory is unique, there are many commonalities among them as well. As such, for the fourth edition this section has been reorganized based on the level at which the theories are operating: individual theories, community and population-based models, and health system models. This new organization allows the reader to better understand the strengths and weaknesses of each model relative to other theories operating on the same level.

Section II: Chapters 4 to 6 provide updated reviews of the factors that predict or serve as obstacles to lifestyle change and adherence. The authors in this section consider individual characteristics, psychosocial factors, and the family, community, and broader social and cultural context. Specific challenges faced by vulnerable populations such as children, adolescents, and the elderly and considerations for interventions at different developmental stages are presented. In addition, the interrelationships among culture, health disparities, and health behavior change and the need to take these into account when designing health behavior change programs and policies are addressed in the context of the growing cultural diversity in the United States.

Lifestyle changes, including the big four noted above (physical activity, nutrition, and tobacco and alcohol use), are the topics of *Chapters 7 to 12 in Section III*. This section provides updated reviews of the challenges in maintaining and changing these behaviors as well as the efficacy of various intervention strategies. Beyond these four lifestyle behaviors, there is a chapter on stress management, given the increasingly recognized role of stress in contributing to the development of chronic illnesses, such as cardiovascular disease and cancer, as well as overall mortality. This chapter provides a review of a variety of approaches for addressing stress that are often integrated into other behavior change interventions. Recognizing that risky lifestyle behaviors most often co-occur and are best considered within the context of their interdependence, the final chapter in this section tackles the complexities of multiple-risk behavior change.

Section IV: Chapters 13 to 18 address the challenges of adhering to lifelong medical regimens. The chapters focus on many of the most prevalent chronic illnesses that contribute to avoidable mortality including cardiovascular disease, diabetes, respiratory diseases (specifically asthma and chronic obstructive pulmonary disease [COPD]), infectious diseases (including HIV, other sexually transmitted diseases, and tuberculosis), cancer, and obesity. These chapters highlight the prevalence of nonadherence to regimen components as well as review the efficacy of interventions to support and improve treatment adherence.

New to the handbook, *Section V: Chapters 19 to 22* focus on the development and evaluation of behavior change interventions implemented within a variety of contexts including community settings such as schools and work places, health care systems, and the built environment. This focus on the environments in which behavior change interventions may take place highlights the opportunities and challenges of working within these systems. It also reflects the growing recognition of the importance of implementation science—that interventions must be developed and evaluated in the contexts in which they will ultimately be disseminated.

Section VI: Chapters 23 and 24 flow nicely from the preceding sections and highlights methodological innovations in health behavior change research. The first chapter focuses on the technological innovations in behavior measurement that have occurred since the third edition. Many new opportunities now exist to objectively measure behavior with less burden and more precision. These innovations are allowing health care providers to begin using these tools in clinical care to shape and modify behavior. Perhaps more than any other innovation, the ongoing development and influence of dissemination and implementation of science theories and methodologies have greatly influenced health behavior research. The final chapter of the handbook highlights the importance of conducting translational research and sets out a framework and set of recommendations for moving the field of behavior change research forward to enhance population health.

Across the different behaviors, illnesses, systems, and populations discussed in each chapter, several cross-cutting themes emerge to guide future research directions. First, interventions need to be developed that are informed by and advance theoretical

models in order to understand the mechanism of change and translate the application of successful interventions to other settings, populations, and behaviors. Second, new and updated theories, interventions, and research methodologies are needed to tackle the complexity of addressing multiple behaviors and challenges concurrently, reflecting the reality that rarely does a person need to change one behavior to improve health or manage a chronic illness, and it is uncommon that there is only one challenge to behavior change. Third, given the profound racial and economic health disparities seen worldwide, it is not surprising that a common theme across the chapters is the need to reduce health disparities. This needs to be accomplished by not only providing culturally sensitive behavior change interventions, but also reducing external barriers by improving access to resources such as health care, nutritious foods, and recreational facilities, and decreasing disproportionate exposure to environmental factors that cause illnesses or exacerbate symptoms. Fourth, a common theme throughout the handbook is that the most efficacious interventions are multicomponent; however, an equally prevalent theme and future direction are needed to make interventions more accessible. Innovative approaches to harmonize these two seemingly opposite themes are needed. Fifth, technology is proposed in many chapters as a potential solution to this challenge, but currently most technology-based solutions are simplistic and much more work is needed in this area. And finally, in addition to specific chapters targeting dissemination of interventions to community and care settings, most chapters note this as a critical area of future research. If we cannot effectively deliver interventions to target audiences, we cannot improve the health of our population.

In total, the fourth edition of *The Handbook of Health Behavior Change* represents an updated and thorough examination of the factors that influence people's ability to change behaviors to enhance their health and the intrapersonal, interpersonal, sociocultural, environmental, systems, and policy factors that can both positively and negatively affect this barrier one makes and one's ability to achieve a desired behavior goal. Beyond understanding predictors, the handbook provides comprehensive reviews of the empirical evidence for various intervention approaches that have been evaluated and offers recommendations for next steps in research to continue to move the field forward. In addition to new and updated information, the fourth edition has been substantially revised to remove redundancy between chapters, and to provide content in a more concise and accessible manner including the addition of learning objectives at the start of each chapter. This book is particularly valuable to students at the graduate and advanced undergraduate level in the fields of public or population health, health communications, medical sociology and anthropology, preventive medicine, and health psychology. The content of the handbook will also be informative to clinical investigators, behavioral and social scientists, and health care practitioners who grapple with the challenges of supporting individuals in their efforts to make well-informed decisions regarding their health-related behaviors, change difficult health habits, and adopt and maintain new behaviors.

REFERENCES

- Boss, E. S., Zima, G., Isel, J., & Li, C. (2013). Low-risk lifestyle behaviors and all-cause mortality: Findings from the National Health and Nutrition Examination Survey III Morbidity Study. *Journal of Preventive Medicine*, 57(1), 1922–1929.
- Fleming, M. (2012). Deaths leading causes for 2010. *National Vital Statistics Reports*, 60, 1–94.
- Ward, B. W., & Schiller, J. S. (2013). Prevalence of multiple chronic conditions among US adults: Estimates from the National Health Interview Survey, 2010. *Preventing Chronic Disease*, 10, P85.

Acknowledgments

The editors warmly acknowledge Charlotte Gerczak, Communications Associate and Assistant to the Editors for *The Handbook of Health Behavior Change*, Fourth Edition, for her unwavering commitment to keeping this new edition on track by reminding them of deadlines and tasks that needed to be done, corresponding with authors, proofreading chapters, and tackling organizational challenges.

I

Theoretical Models of Health Behavior Change

Theories attempt to explain cause–effect relationships and help to provide a basis for understanding and predicting the occurrence of health-related behaviors, behavior change, and maintenance of change. Therefore, they also help to frame the development of strategies and interventions to achieve change in behaviors and guide health behavior research. No single theory is all encompassing, often making it necessary to use multiple theories to understand how to promote specific behavior change. Using a socio-ecological framework as described in Chapter 2 by Fitzgibbon et al. and colleagues we understand that theories are also needed to address each of the multiple levels of influence on behavior, encompassing the levels of genetics, the individual, the population, or environment, community entities such as the health care system, and policies.

Chapters in Section I provide a detailed review of a wide variety of theories and models of behavior and behavior change, including theories addressing factors on the individual level (Chapter 1), on the community or population level (Chapter 2), and those factors in health care systems affecting the health behaviors of patients and the treatment-delivery behaviors of clinicians (Chapter 3). Each chapter emphasizes that none of these levels that affect behavior act on their own; rather, they do so within the context of the others. Therefore, in order to tackle our public health challenges described throughout this book, behavior change depends on a comprehensive approach of intervening on multiple levels.

Chapter 1, “Individual Theories” by Clark and Janevic, provides an overview of six commonly used individual-level theories and models: social cognitive theory, self regulation model, health belief model, theory of planned action, transtheoretical model, and relapse prevention model. It concludes by asking researchers and clinicians to consider “the need for more rigorous testing and subsequent theory modification to move the field forward” and describes how we might do this. The authors call for “taking theory testing and development in new directions to help ensure the relevance of individual-level theories in an environment where a strong evidence base and multi-level, multi-disciplinary approaches are viewed as critical to addressing today’s biggest public health challenges.”

Chapter 2, “Understanding Population Health From Multi-Level and Community-Based Models” by Fitzgibbon, Kong, and Tussing-Humphreys, addresses how socio-ecological models that address the multiple levels of influence on behavior can be used for developing interventions that support healthy lifestyles. The authors note that we must pay attention to the communities in which people live and work, and they discuss

- [*download online Butcher Bird: A Novel of The Dominion*](#)
- [*Social Constructivism and the Philosophy of Science \(Philosophical Issues in Science\) pdf*](#)
- **[Dictionary of Construction Terms pdf](#)**
- [Modelland pdf, azw \(kindle\), epub](#)
- [La Cuisine: Secrets of Modern French Cooking pdf, azw \(kindle\), epub](#)

- <http://ramazotti.ru/library/Sea-of-Silver-Light--Otherland--Book-4-.pdf>
- <http://ramazotti.ru/library/The-Handbook-of-Portfolio-Mathematics.pdf>
- <http://berttrotman.com/library/Twilight-of-a-Queen--The-Dark-Queen-Saga--Book-5-.pdf>
- <http://thermco.pl/library/Savory-Baking--75-Warm-and-Inspiring-Recipes-for-Crisp--Savory-Baking.pdf>
- <http://korplast.gr/lib/La-Cuisine--Secrets-of-Modern-French-Cooking.pdf>