

Exercise for Aging Adults

Gail M. Sullivan • Alice K. Pomidor
Editors

Exercise for Aging Adults

A Guide for Practitioners

 Springer

Editors

Gail M. Sullivan, MD, MPH
UConn Center on Aging
University of Connecticut School
of Medicine
Farmington, CT, USA

Alice K. Pomidor, MD, MPH
Department of Geriatrics
Florida State University College
of Medicine
Tallahassee, FL, USA

Videos to this book can be accessed at
<http://link.springer.com/book/10.1007/978-3-319-16095-5>

ISBN 978-3-319-16094-8 ISBN 978-3-319-16095-5 (eBook)
DOI 10.1007/978-3-319-16095-5

Library of Congress Control Number: 2015937421

Springer Cham Heidelberg New York Dordrecht London
© Springer International Publishing Switzerland 2015

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made.

Printed on acid-free paper

Springer International Publishing AG Switzerland is part of Springer Science+Business Media
(www.springer.com)

Preface

The first patient today is an 80-year-old retired ballet dancer, who now teaches French at the senior center, takes opera singing lessons, and enters Argentine tango competitions. I tell her she is my model of successful aging. She laughs and replies, “I have to exercise my mind and body or I feel too slow!” This exemplary patient inspires us as health care professionals to work harder to understand the motivations and needs of more typical older adults, those who believe that retirement signals a time to acquire a recliner and grab the remote. No matter the age or functional level, exercise in many ways resembles Ponce de Leon’s fabled “fountain of youth” in enabling older adults to stay independent, at home, and with fewer conditions usually associated with aging.

Later that morning at the assisted living facility, I watch residents as they participate in the daily exercise class. One person is standing and swaying to the music. The other residents are sitting, in fact many of them dozing, while a single aide bounces a balloon towards the seated individuals. The effectiveness of this exercise class is questionable, yet currently this is the only activity available aside from walking to meals. In contrast, exercise does not mean playing a session of basketball as many older adults believe. For most older adults, movements to enhance flexibility, strength, balance, and aerobic capacity lie somewhere in between these extremes.

The goal of this book is to provide professionals working with older adults, at all levels of function and with various disease conditions, with activities that can be implemented immediately in a variety of settings. The intent of this book is to bridge the gap between what research has demonstrated is beneficial for older adults and implementation of these strategies in real-world settings. Each chapter provides key points about the topic, an illustrative case, and helpful resources, to jump start knowledge translation from the page directly to adults in common sites of care: clinic, home, assisted living, nursing home, hospital, or gym. We have also provided links to videos, developed specifically for this book, to demonstrate activities which can be used immediately for training staff, educating trainees, or demonstrating activities to older adults.

The first three chapters of this book provide justifications for implementing suggestions found in the latter chapters and can be used to prepare for discussions with administration, supervisors, trainees, or clinical staff. The up-to-date information in these chapters may be used as background information to motivate and/or reassure individuals regarding the need to start or add new activities and for leaders to start or enhance exercise programs.

The latter chapters of this book include specific, evidence-based techniques to increase physical activity for a variety of older adults. Experts describe strategies to employ with older adults with stable chronic conditions, with existing functional problems, in mixed group settings, and with specific conditions such as dementia or visual impairments that require adaptive approaches. One chapter describes in detail the motivational interviewing technique for talking to older adults about exercise, to move more older persons from ambivalence and towards commitment to making lifestyle changes. As cultural background determines in large part one's views about health and exercise, one chapter explores the state of research in this area and provides suggestions for successful programs targeted to diverse groups.

At the end of the book, chapters describe community-based and large-scale, system-wide strategies to initiate and sustain exercise programs for large groups of older adults. These programs require broad buy-in from diverse stakeholders, yet have been successfully implemented in diverse groups with a decade of experience for some interventions.

Each chapter can stand alone, such that you do not need to start at chapter one and read through to the end of the book. In today's overly busy world, we want to give you "just in time" tools that can be used with the older adults you will see and care for today. As aging "boomers" ourselves, we are passionate about adding value to years, as stated eloquently more than 50 years ago by John F. Kennedy:

It is not enough for a great nation merely to have added new years to life—our objective must also be to add new life to those years [1].

We hope you enjoy reading this book and use it frequently. Please write and give us feedback.

Farmington, CT, USA
Tallahassee, FL, USA

Gail M. Sullivan, MD, MPH
Alice K. Pomidor, MD, MPH

Reference

1. Kennedy JF. Special message to the Congress on the needs of the nation's senior citizens (February 21, 1963). In: Public Papers of the Presidents of the United States; 1963. p. 189. <http://www.bartleby.com/73/22.html>. Accessed 9 Dec 2014.

Acknowledgments

We would like to acknowledge the many patients who have inspired us to “get moving.” Sincere thanks also to Wade Grayson, Managing Editor, who worked hard to keep everyone on track and in the correct style. Finally, we thank our families for tolerating our decision to say “yes” to yet another compelling, yet not absolutely mandatory, assignment.

Contents

1	The Physiology of Aging and Exercise	1
	Maren S. Fragala	
2	Benefits of Exercise for Older Adults	13
	Melissa J. Benton	
3	Risks of Exercise for Older Adults	29
	Liza Stathokostas and Gareth Jones	
4	Types of Exercise: Flexibility, Strength, Endurance, Balance	41
	Lynn B. Panton and Ashley L. Artese	
5	Motivational Interviewing for Older Adults	59
	Kenneth Brummel-Smith	
6	Writing an Exercise Prescription for Older Adults	67
	Debra J. Rose	
7	Cultural Considerations for Exercise in Older Adults	85
	Rosaly Correa-de-Araujo	
8	Exercises for Adults in Nursing Home and Assisted Living Facilities	97
	Barbara Resnick	
9	Exercise for Hospitalized Older Adults	111
	Gail M. Sullivan	
10	Frailty and Older Adults	123
	Ellen Binder	

11 Community-Based Exercise Programs for Older Adults 131
Jennifer Sokol Brach

**12 Implementing and Disseminating Exercise Programs
for Older Adult Populations**..... 139
Marcia G. Ory, Samuel D. Towne Jr., Alan B. Stevens,
Chae Hee Park, and Wojtek Jan Chodzko-Zajko

Index..... 151

Videos

Video 4.1 Fitness Assessments for Older Adults. This video demonstrates 6 maneuvers used to assess fitness: the timed up and go, chair stand, arm curl, chair sit-and-reach, back scratch, one-legged stand.

Video 4.2 Water Exercises. This video demonstrates 8 water-based endurance activities, 5 strength exercises, and 2 balance exercises which can be performed in a pool to minimize weight-bearing strain on joints.

Video 4.3 Cardiovascular Exercises. This video demonstrates 5 maneuvers for endurance activity and cardiovascular conditioning: marching in place, heel digs, side steps, knee lifts, and modified jumping jacks.

Video 4.4 Pet Therapy Exercise class. This video demonstrates how dogs have been incorporated for fun and motivation in an exercise class which includes flexibility, endurance and balance training.

Video 5.1 Exploring Ambivalence. This video demonstrates how to explore ambivalence about physical activity with an older adult who has diabetes.

Video 5.2 Making a Plan and the Confidence Ruler. Demonstrates the skill of guiding while looking for DARN themes in “change talk” and use of the Confidence Ruler.

Video 5.3 The Importance Ruler. Illustrates the use of OARS techniques and the Importance Ruler.

Video 5.4 Follow-Up Visit. Shows how OARS techniques can help at different stages in the older adult’s progress with adopting physical activity.

Video 5.5 Rolling with Resistance. Demonstrates how to use strategies such as asking permission to inform and help guide the older adult in decision-making.

Video 5.6 Relapse and Making a New Plan. Shows how to use OARS skills to support an older adult when relapse occurs and making a new plan is needed.

Video 5.7 Maintenance. Illustrates the use of OARS skills as part of active maintenance of physical activity.

Video 8.1 Seated Exercises for Coordination, Balance, Endurance and Strength. Demonstrates modified exercises for older adult residents of a facility with limited ability promoting coordination, balance, endurance and strength.

Video 8.2 Seated Exercises for Upper Extremity Range of Motion and Flexibility. Demonstrates modified exercises for older adult residents of a facility with limited ability promoting upper extremity range of motion and flexibility.

Contributors

Ashley L. Artese, MS Department of Nutrition, Food and Exercise Sciences, Florida State University, Tallahassee, FL, USA

Melissa J. Benton, MSN, PhD Beth-El College of Nursing and Health Sciences, University of Colorado at Colorado Springs, Colorado Springs, CO, USA

Ellen Binder, MD Division of Geriatrics and Nutritional Science, Washington University School of Medicine, St. Louis, MO, USA

Jennifer Sokol Brach, PhD, PT Department of Physical Therapy, University of Pittsburgh, Pittsburgh, PA, USA

Kenneth Brummel-Smith, MD Department of Geriatrics, Florida State University College of Medicine, Tallahassee, FL, USA

Wojtek Jan Chodzko-Zajko, PhD Department of Kinesiology, University of Illinois at Urbana-Champaign, Urbana, IL, USA

Rosaly Correa-de-Araujo, MD, MSc, PhD Division of Geriatrics and Clinical Gerontology, National Institute on Aging, Bethesda, MD, USA

Maren S. Fragala, PhD Institute of Exercise Physiology and Wellness, University of Central Florida, Orlando, FL, USA

Gareth Jones, PhD School of Health and Exercise Sciences, University of British Columbia – Okanagan, Kelowna, BC, Canada

Marcia G. Ory, PhD, MPH Department of Health Promotion and Community Health Sciences, Texas A&M Health Science Center School of Public Health, College Station, TX, USA

Lynn B. Panton, PhD Department of Nutrition, Food and Exercise Sciences, Florida State University, Tallahassee, FL, USA

Chae Hee Park, PhD Department of Sport and Healthy Aging, Korea National Sport University, Seoul, South Korea

Barbara Resnick, PhD, CRNP, FAAN, FAANP Organizational Systems and Adult Health, University of Maryland School of Nursing, Baltimore, MD, USA

Debra J. Rose, PhD Department of Kinesiology, California State University, Fullerton, Fullerton, CA, USA

Liza Stathokostas, PhD Faculty of Health Sciences, School of Kinesiology, Western University, London, ON, Canada

Alan B. Stevens, PhD, MA Center for Applied Health Research, Baylor Scott and White Health, Temple, TX, USA

Gail M. Sullivan, MD, MPH UConn Center on Aging, University of Connecticut School of Medicine, Farmington, CT, USA

Samuel D. Towne Jr., PhD, MPH, CPH Department of Health Promotion and Community Health Sciences, Texas A&M Health Science Center School of Public Health, College Station, TX, USA