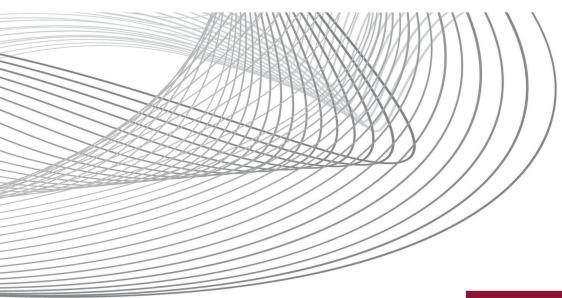


DIABETES MANAGEMENT

A MANUAL FOR PATIENT-CENTRED CARE

Janet Titchener





Diabetes Management



Diabetes Management

A MANUAL FOR PATIENT-CENTRED CARE

Janet Titchener



First edition published 2020 by CRC Press

6000 Broken Sound Parkway NW, Suite 300, Boca Raton, FL 33487-2742

and by CRC Press

2 Park Square, Milton Park, Abingdon, Oxon, OX14 4RN

© 2020 Taylor & Francis Group, LLC

CRC Press is an imprint of Taylor & Francis Group, LLC

This book contains information obtained from authentic and highly regarded sources. While all reasonable efforts have been made to publish reliable data and information, neither the author[s] nor the publisher can accept any legal responsibility or liability for any errors or omissions that may be made. The publishers wish to make clear that any views or opinions expressed in this book by individual editors, authors or contributors are personal to them and do not necessarily reflect the views/opinions of the publishers. The information or guidance contained in this book is intended for use by medical, scientific or health-care professionals and is provided strictly as a supplement to the medical or other professional's own judgement, their knowledge of the patient's medical history, relevant manufacturer's instructions and the appropriate best practice guidelines. Because of the rapid advances in medical science, any information or advice on dosages, procedures or diagnoses should be independently verified. The reader is strongly urged to consult the relevant national drug formulary and the drug companies' and device or material manufacturers' printed instructions, and their websites, before administering or utilizing any of the drugs, devices or materials mentioned in this book. This book does not indicate whether a particular treatment is appropriate or suitable for a particular individual. Ultimately it is the sole responsibility of the medical professional to make his or her own professional judgements, so as to advise and treat patients appropriately. The authors and publishers have also attempted to trace the copyright holders of all material reproduced in this publication and apologize to copyright holders if permission to publish in this form has not been obtained. If any copyright material has not been acknowledged please write and let us know so we may rectify in any future reprint.

Except as permitted under U.S. Copyright Law, no part of this book may be reprinted, reproduced, transmitted, or utilized in any form by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying, microfilming, and recording, or in any information storage or retrieval system, without written permission from the publishers.

For permission to photocopy or use material electronically from this work, access www.copyright.com or contact the Copyright Clearance Center, Inc. (CCC), 222 Rosewood Drive, Danvers, MA 01923, 978-750-8400. For works that are not available on CCC please contact mpkbookspermissions@tandf.co.uk

Trademark notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

Library of Congress Cataloging-in-Publication Data

Names: Titchener, Janet, 1957- author.

Title: Diabetes management: a manual for patient-centred care / by Janet Titchener.

Description: First edition. | Boca Raton: CRC Press, 2020. |

Includes bibliographical references and index.

Summary: "Diabetes is a chronic disease involving self-management by the patients.

This book teaches providers the skills to translate and transfer complex medical information to empower

patients to participate in making well informed decisions about their own care on a daily basis,

as directed by the American Diabetes Association" - Provided by publisher.

Identifiers: LCCN 2020002773 (print) | LCCN 2020002774 (ebook) |

ISBN 9780367344931 (pbk) | ISBN 9780367897628 (hbk) | ISBN 9780429326196 (ebk)

Subjects: MESH: Diabetes Mellitus-therapy | Self Care | Patient-Centered Care |

Self Management | Patient Education as Topic

Classification: LCC RC660.4 (print) | LCC RC660.4 (ebook) |

NLM WK 815 | DDC 616.4/6206-dc23

LC record available at https://lccn.loc.gov/2020002773

LC ebook record available at https://lccn.loc.gov/2020002774

ISBN: 978-0-367-89762-8 (hbk) ISBN: 978-0-367-34493-1 (pbk) ISBN: 978-0-429-32619-6 (ebk)

Dedication

This book is dedicated to all those with diabetes who shared their stories with me as well as their experience of what it means to live with diabetes. Without your sharing, I would never have gained the insight and understanding so critical to providing a patient-centred approach to diabetes care.

Janet Titchener



Contents

Abo	out the author	D
Intr	oduction	1
1	The physiology of glucose metabolism	3
	There are two sources of glucose	3
	There are two 'kinds' of insulin – basal and bolus	4
	Other hormones assist with glucose homeostasis	4
	The kidneys also play a crucial role	5
2	The pathophysiology of diabetes	7
	Type 1 diabetes	3
	Type 2 diabetes	3
	Monogenic diabetes	Ç
	Gestational diabetes	10
	Other types of diabetes	10
3	Making the diagnosis of diabetes	13
	Criteria for the diagnosis of diabetes	13
	Screening: testing for diabetes in asymptomatic patients	14
	Management following a positive test	15
4	Oral medications	17
5	Insulins and insulin management	25
	Insulin pharmacokinetics	26
	Insulin delivery	30
	Insulin dose calculations	31
	Essential teaching points	34
6	Surgical management of diabetes	39
	Metabolic/bariatric surgery	39
	Transplantation	41
7	Considerations when approaching diabetes management	43
	Consider the patient as a whole	43
	Consider underlying pathology when selecting management options	43
	Consider the durability of management	45
	Determine the patient's type of diabetes and underlying pathologies	45
8	Glycaemic management	53
	Medical management of glycaemia	53
	Individualisation of HbA _{1c} target	53
	Self-monitoring of blood sugars	54
	Blood glucose management	55
	Remission of diabetes	58

9	Lifestyle management	61
	Exercise	61
	Foods	62
10	Cardiovascular risk management	69
	Diabetes	70
	Blood pressure	72
	Cholesterol	72
	Smoking	73
	Weight	73
	Renal protection	74
	Aspirin use	74
11	Providing patient-centred care	77
	Establish a working relationship	79
	Find a common language	80
	Understand the patient	80
	Acknowledge the patient as the expert	82
	Find common ground	82
	Empower the patient	83
12	Empowering the patient for lifelong self-management	87
	Provide opportunity for ongoing education	87
	Ensure support and safety nets are in place – for both patient and provider	88
	Hand over the controls	90
Inde	ndex	

Patient handouts

About the author

Janet Titchener, MD, is a graduate of Otago University (Diploma, Physical Education), University of Connecticut (Masters, Psychology), Thomas Jefferson University (Masters, Physiotherapy) and The University of Pennsylvania School of Medicine (Doctorate of Medicine).

Convinced that successful medical care could only be achieved if diseases were managed within the context of the patient, Dr Titchener chose to train as a Family Practice Physician (Lancaster General, University of Pennsylvania). During her residency and fellowship she subspecialised in diabetology and is currently Board Certified in Advanced Diabetes Management through the American Association of Diabetes Educators.

As Medical Director of GPSI Diabetes Ltd, Dr Titchener provides care for all types of diabetes, across all age groups. Her clinical practice adheres to the principles of patient-centred clinical medicine so that each patient is considered the expert with regard to knowing which management approach will best fit with their life and life's choices.

Dr Titchener is the recipient of the 2010 Eli Lilly/NZSSD Primary–Secondary Physician award for her clinical work and teaching within GPSI Diabetes Ltd, New Zealand.



Introduction

"Diabetes is, in many ways, a large part of the future of medicine"

Fowler MJ Clinical Diabetes 2010:28:42-46

Diabetes has become a major international public health problem.¹ The number of people with diabetes is estimated to be 425 million and is predicted to increase to 629 million by 2045.² As increasing incidence and prevalence overburdens healthcare systems, it is arguably the most significant challenge in healthcare today.³ Limitations in workforce, resources and funding are the reasons most often given for poor management.^{4,5} However, more recently, the current conventional model of healthcare itself has been recognised as a significant barrier to good diabetes care.^{6,7} Having evolved to manage acute episodic illness, it is ill suited to approaching the complexities of a chronic disease.

Chronic disease is more complex than acute disease, both medically and psychosocially. Chronic diseases are multiple-organ diseases requiring skills for preventative as well as current disease management; these are lifelong diseases where emphasis is on control not cure, requiring monitoring with constant attention to medication management; these are illnesses which a person has to live with and independently manage on a daily basis, meaning that key treatment decisions (e.g. lifestyle change, taking medication regularly) are entirely under their control; and finally, as each person is a unique autonomous individual with their own set of beliefs and priorities about their life, these are illnesses where management success does not occur if the treatments being selected do not suit the patient's unique life-situations and cultural and personal beliefs.8-10

Recognising the influence psychosocial factors have on disease management, and stimulated by studies demonstrating the effectiveness of patient self-management, new models of care are shifting from treatment that is done to passive recipients by medical experts, to patient-centred care where management decisions result from a collaborative partnership between provider and patient with the patient actively participating in disease management choices.¹¹ Indeed, since 2012, recommendations for diabetes management from both the American Diabetes Association and the European Association for the Study of Diabetes have stopped advocating one management option over another. Rather, they ask that management choices "be considered within the context of the needs, preferences, and tolerances of each patient", emphasising that "individualization of treatment is the cornerstone of success".12

To provide patient-centred diabetes care a provider needs to develop two skills: first, a good understanding of the pathophysiology of diabetes, the differences and similarities between the different types of diabetes, and an excellent understanding of how the medications and insulins target different pathophysiologies and work synergistically to control blood sugars; and second, the skills to transfer this same knowledge to patients, enabling the patient to participate in management decisions and empowering them to self-manage their disease. This manual sets out to teach providers both sets of skills.

The first half of the manual provides basic knowledge around the pathophysiology of diabetes and different management options. The second half then presents information on how foods affect blood sugars and how to address cardiovascular risk factors. The information is presented in such a way as to assist the reader in developing their skills for translating complex medical knowledge into understandable lay language during a patient-centred consultation. Techniques are also provided to enhance a provider's patient-centred skills for the transfer of knowledge to the patient and for successful engagement in a partnership of care.

REFERENCES

- Boyle JP, Honeycutt AA, Narayan KM, et al. Projection of diabetes burden through 2050: impact of changing demographic and disease prevalence in the US. Diabetes Care. 2001;24:1936–1940
- International Diabetes Federation. IDF Diabetes Atlas, 8th ed (internet), 2017. Available on www.diabetesatlas.org. Accessed 17 May 2019
- Singh D. Transforming chronic care: evidence about improving care for people with long term conditions. Health Services Management Centre, University of Birmingham, 2006
- Selby JV, Ray GT, Zhang D, Colby CJ. Excess costs of medical care for patients with diabetes in a managed care population. Diabetes Care. 1997;20:1396–1402
- Shahady E. The Florida Diabetes Master Clinician Program: facilitating increased quality and significant cost savings for diabetic patients. Clin Diabetes. 2008;26:29–33

- Janes R, Titchener J, Pere J, et al. Understanding barriers to glycaemic control from the patient's perspective. J Prim Health Care. 2013;5:114–122
- 7. Kahn R, Anderson JE. Improving diabetes care: the model of health care reform. Diabetes Care. 2009;32:1115–1118
- Laffel LM, Vangsness L, Connell A, et al. Impact of ambulatory, family-focused teamwork intervention on glycemic control in youth with type 1 diabetes. J Pediatrics. 2003;142:409–416
- Rother ML, O'Connor AM. Health decisions and decision support for women. Annu Rev Public Health. 2003;24:413–433
- Simpson EL, House AO. Involving users in the delivery and evaluation of mental health services: a systematic review. BMJ. 2002;325:1265–1268
- Glasgow RE, Peeples M, Skovlund SE. Where is the patient in diabetes performance measures? The case for including patientcentered and self-management measures. Diabetes Care. 2008;31:1046–1050
- Inzucchi SE, Bergenstal RM, Buse JB, et al. Management of hyperglycemia in type 2 diabetes: a patient-centred approach. Position statement of the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). Diabetes Care. 2012;35:1364–1379