Todd A. Smitherman · Donald B. Penzien Jeanetta C. Rains · Robert A. Nicholson Timothy T. Houle

Headache



Advances in Psychotherapy

Evidence-Based Practice



Headache

About the Authors

Todd A. Smitherman, PhD, FAHS, is Associate Professor of Psychology and Director of the Center for Behavioral Medicine at the University of Mississippi. He has published over 50 peer-reviewed journal articles and numerous book chapters, most pertaining to psychiatric comorbidities and other behavioral issues in headache disorders. His research has been supported by the Migraine Research Foundation, the American Headache Society, the University of Mississippi, and Merck Pharmaceuticals. Dr. Smitherman serves as associate editor for *Headache: The Journal of Headache And Face Pain*, is a fellow of the American Headache Society and chair of its Behavioral Issues Section, and has served as a consultant for the Common Data Elements Working Group for Headache Clinical Trials (National Institute of Neurological Disorders and Stroke).

Donald B. Penzien, PhD, FAHS, is widely recognized for his expertise and contributions in headache research methodologies and development of cost-efficient behavioral interventions for headache (i.e., limited-therapist-contact therapies). He presently serves as Professor of Anesthesiology at the Wake Forest School of Medicine. In 1986, he founded the Head Pain Center at University of Mississippi Medical Center, where he served as Director and Professor of Psychiatry until 2014. He is a fellow of the American Headache Society and the Society of Behavioral Medicine. He has published extensively in behavioral medicine, with over 150 research articles, book chapters, and monographs to his credit. His work has been supported by grants from the National Institutes of Health, Department of Defense, and other funding agencies. He is associate editor for Headache: The Journal of Head and Face Pain, has served on editorial boards of other scientific journals, and has actively served numerous professional organizations. Key appointments have included chair of the Nonpharmacologic Therapies Review Group for the Headache Treatment Guidelines Project (Agency for Healthcare Research and Quality), Board of Directors as well as chair of the Behavioral Clinical Trials Guidelines Workgroup (American Headache Society), member of the US Headache Treatment Guidelines Consortium (American Academy of Neurology), and member of the Common Data Elements Working Group for Headache Clinical Trials (National Institute of Neurological Disorders and Stroke).

Jeanetta C. Rains, PhD, FAHS, is Clinical Director of the Center for Sleep Evaluation at Elliot Hospital in Manchester, New Hampshire. She is a fellow of the American Board of Sleep Medicine, the American Academy of Sleep Medicine, and the American Headache Society. She is a leading authority in the field of headache and sleep medicine, having worked in this area since 1991. She has authored more than 90 scientific publications. She is associate editor for *Headache: The Journal of Head and Face Pain* and serves on the editorial board for the *Journal of Applied Psychophysiology and Biofeedback*. Her research has been supported by the American Headache Society and Merck Pharmaceuticals, and she has served as a consultant for research supported by the Migraine Research Foundation and American Headache Foundation.

Robert A. Nicholson, PhD, FAHS, is Director of Research for Mercy Health System and Director of Behavioral Medicine at Mercy Health Research and Mercy Clinic Headache Center. He earned his doctorate in clinical psychology (specializing in behavioral medicine) at Virginia Commonwealth University and completed a predoctoral internship and postdoctoral research fellowship at Brown University Medical School. His research and clinical focus is on the use of maximally effective patient communication strategies for prevention and management of migraine and integrating patient reports into optimal migraine treatment design. He has received

grants from the National Institute of Neurological Disorders and Stroke, the National Cancer Institute, the National Headache Foundation, Saint Louis University, and the private sector to support his research. Dr. Nicholson has published extensively and made numerous presentations at scientific and professional conferences.

Timothy T. Houle, PhD, is Associate Professor of Anesthesiology at Wake Forest School of Medicine. He has published over 80 peer-reviewed journal articles and numerous book chapters principally addressing chronic pain and the triggers of headache, and much of his research has focused on the prediction of headache attacks in the individual. His work has been funded by the National Institute of Neurological Disorders and Stroke, Department of Defense, and numerous other agencies. He is statistical consultant for the journal *Headache: The Journal of Head and Face Pain* and statistical editor for the journal *Anesthesiology*. Key appointments have included serving as a member of the Behavioral Medicine: Interventions and Outcomes Study Section (National Institutes of Health), chair of the Methodology, Design, and Statistical Issues Section (American Headache Society), member of the Behavioral Clinical Trials Guidelines Workgroup (American Headache Society), and member of the Common Data Elements Working Group for Headache Clinical Trials (National Institute of Neurological Disorders and Stroke).

About the Cover Illustration

Title of Print: Going Against the Migraine by Enoch "Doyle" Jeter

The cover image is an etching done on a zinc plate, hand colored and printed by the artist. It was created as an original, limited edition print and commissioned as cover art for this volume

Artist's Comment: Although perhaps a bit over the top, I hope my depiction of what it feels like to suffer from a migraine captures those terrible moments so many of us sadly experience. Discussions with the authors (Don Penzien and others) were crucial in deciding on how to approach the image. My hat...and anvil...are off to them.

About the artist: Enoch "Doyle" Jeter

- Born in Jena, Louisiana, USA
- Bachelor of Arts, Northeast Louisiana University, Monroe, Louisiana
- Master of Fine Arts, Highlands University, Las Vegas, New Mexico
- Printmaking Instructor and Artist in Residence, University of Louisiana–Monroe
- Public and private collections: USA, Ireland, Venezuela, Canada, Holland, Bali-Indonesia, Germany, Puerto Rico, etc.
- Numerous exhibitions, 1971 to present
- Artist's web site: http://www.enochdoylejeterart.com/

To enquire about ordering signed prints of the cover illustration (*Going Against the Migraine*), please contact the author at doyle@enochdoylejeterart.com. All other enquiries are also welcome.

Advances in Psychotherapy – Evidence-Based Practice

Series Editor

Danny Wedding, PhD, MPH, School of Medicine, American University of Antigua, St. Georges, Antigua

Associate Editors

Larry Beutler, PhD, Professor, Palo Alto University / Pacific Graduate School of Psychology, Palo Alto, CA

Kenneth E. Freedland, PhD, Professor of Psychiatry and Psychology, Washington University School of Medicine, St. Louis, MO

Linda C. Sobell, PhD, ABPP, Professor, Center for Psychological Studies, Nova Southeastern University. Ft. Lauderdale. FL

David A. Wolfe, PhD, RBC Chair in Children's Mental Health, Centre for Addiction and Mental Health, University of Toronto, ON

The basic objective of this series is to provide therapists with practical, evidence-based treatment guidance for the most common disorders seen in clinical practice – and to do so in a "reader-friendly" manner. Each book in the series is both a compact "how-to" reference on a particular disorder for use by professional clinicians in their daily work, as well as an ideal educational resource for students and for practice-oriented continuing education.

The most important feature of the books is that they are practical and easy to use: All are structured similarly and all provide a compact and easy-to-follow guide to all aspects that are relevant in real-life practice. Tables, boxed clinical "pearls," marginal notes, and summary boxes assist orientation, while checklists provide tools for use in daily practice.

Headache

Todd A. Smitherman

Department of Psychology, University of Mississippi, Oxford, MS

Donald B. Penzien

Department of Anesthesiology, Wake Forest School of Medicine, Winston-Salem, NC

Jeanetta C. Rains

Center for Sleep Evaluation, Elliot Hospital, Manchester, NH

Robert A. Nicholson

Mercy Clinic Headache Center/Mercy Health Research, Mercy Health, St. Louis, MO

Timothy T. Houle

Department of Anesthesiology, Wake Forest School of Medicine, Winston-Salem, NC



Library of Congress Cataloging information for the print version of this book is available via the Library of Congress Marc Database

Library and Archives Canada Cataloguing in Publication

Smitherman, Todd A., 1977-, author

Headache / Todd A. Smitherman, Department of Psychology, University of Mississippi, Oxford, MS, Donald B. Penzien, Department of Anesthesiology, Wake Forest School of Medicine, Winston-Salem, NC, Jeanetta C. Rains, Center for Sleep Evaluation, Elliot Hospital, Manchester, NH, Robert A. Nicholson, Mercy Clinic Headache Center/Mercy Health Research, Mercy Health, St. Louis, MO, Timothy T. Houle, Department of Anesthesiology, Wake Forest School of Medicine, Winston-Salem, NC.

(Advances in psychotherapy--evidence based practice series; volume 30)

Includes bibliographical references.

Issued in print and electronic formats.

ISBN 978-0-88937-328-0 (pbk.).--ISBN 978-1-61676-328-2 (pdf).--

ISBN 978-1-61334-328-9 (html)

1. Headache. 2. Headache--Treatment. I. Penzien, Donald B., 1957-, author II. Rains, Jeanetta C., 1963-, author III. Nicholson, Robert A., 1971-, author IV. Houle, Timothy T., 1974-, author V. Title. VI. Series: Advances in psychotherapy--evidence-based practice; v. 30

RC392.S65 2014

616.8'491

C2014-905388-6

C2014-905389-4

© 2015 by Hogrefe Publishing http://www.hogrefe.com

PUBLISHING OFFICES

USA: Hogrefe Publishing Corporation, 38 Chauncy Street, Suite 1002, Boston, MA 02111

Phone (866) 823-4726, Fax (617) 354-6875; E-mail customerservice@hogrefe-publishing.com

EUROPE: Hogrefe Publishing GmbH, Merkelstr. 3, 37085 Göttingen, Germany

Phone +49 551 99950-0, Fax +49 551 99950-425; E-mail publishing@hogrefe.com

SALES & DISTRIBUTION

USA: Hogrefe Publishing, Customer Services Department, 30 Amberwood Parkway, Ashland, OH 44805

Phone (800) 228-3749, Fax (419) 281-6883; E-mail customerservice@hogrefe.com

UK: Hogrefe Publishing c/o Marston Book Services Ltd, 160 Eastern Ave., Milton Park, Abingdon, OX14 4SB, UK

Phone +44 1235 465577, Fax +44 1235 465556; E-mail direct.orders@marston.co.uk

EUROPE: Hogrefe Publishing, Merkelstr. 3, 37085 Göttingen, Germany

Phone +49 551 99950-0, Fax +49 551 99950-425; E-mail publishing@hogrefe.com

OTHER OFFICES

CANADA: Hogrefe Publishing, 660 Eglinton Ave. East, Suite 119-514, Toronto, Ontario, M4G 2K2

SWITZERLAND: Hogrefe Publishing, Länggass-Strasse 76, CH-3000 Bern 9

Copyright Information

The e-book, including all its individual chapters, is protected under international copyright law. The unauthorized use or distribution of copyrighted or proprietary content is illegal and could subject the purchaser to substantial damages. The user agrees to recognize and uphold the copyright.

License Agreement

The purchaser is granted a single, nontransferable license for the personal use of the e-book and all related files.

Making copies or printouts and storing a backup copy of the e-book on another device is permitted for private, personal use only.

Other than as stated in this License Agreement, you may not copy, print, modify, remove, delete, augment, add to, publish, transmit, sell, resell, create derivative works from, or in any way exploit any of the e-book's content, in whole or in part, and you may not aid or permit others to do so. You shall not: (1) rent, assign, timeshare, distribute, or transfer all or part of the e-book or any rights granted by this License Agreement to any other person; (2) duplicate the e-book, except for reasonable backup copies; (3) remove any proprietary or copyright notices, digital watermarks, labels, or other marks from the e-book or its contents; (4) transfer or sublicense title to the e-book to any other party.

These conditions are also applicable to any audio or other files belonging to the e-book. Should the print edition of this book include electronic supplementary material then all this material (e.g., audio, video, pdf files) is also available in the e-book-edition.

Format: PDF

ISBN 978-0-88937-328-0 (print), ISBN 978-1-61676-328-2 (pdf), ISBN 978-1-61334-328-9 (epub) http://doi.org/10.1027/00328-000

Preface

This book describes the conceptualization, assessment, and empirically supported treatment of headache from a behavioral perspective. Though headache most certainly is at its core a neurobiological phenomenon, a large and ever-growing body of research indicates that behavioral factors (e.g., stress, psychiatric comorbidities, coping skills, cognitions) play an integral role in the onset and maintenance of headache disorders over time. Many mental health providers encounter headache as a common and disabling comorbidity among their psychiatric patients but lack the knowledge of how to effectively work with headache patients. Hundreds of studies over the past 4 decades have amply established the efficacy of behavioral therapies for headache disorders as well as the relevance of psychological/behavioral factors in headache. This book reviews the relevant psychological factors and describes how to implement efficacious behavioral interventions for headache within clinical practice settings. The intended audience is principally mental/behavioral health practitioners and trainees who want to know how to implement these interventions with their patients. This volume is also useful for other health care professionals wishing to supplement routine medical treatment of headache patients with empirically supported behavioral strategies. Basic familiarity with psychological principles of behavior change is assumed.

This book is divided into five chapters. Chapter 1 describes the most common primary headache disorders, differentiating migraine and tension-type headache from each other and from other headache disorders, reviewing common comorbid conditions, and outlining empirically supported assessment strategies. Chapter 2 gives an overview of the pathophysiology of migraine and the behavioral conceptualization of headache. Chapter 3 presents a framework for conducting a diagnostic assessment and identifying factors affecting a patient's suitability for and response to treatment. Chapter 4 presents a step-by-step, manual-type guide to implementing the various interventions. This chapter includes a review of treatment efficacy and mechanisms of action, variations on the standard format of delivery, and strategies for addressing common problems in treatment. Chapter 5 provides a broad summary of the prior chapters. The Appendix provides a set of useful assessment and treatment forms and handouts.

Although tension-type headache is the most common of the primary headache disorders, migraine is the most common diagnosis among those who present for headache treatment within clinical settings. As such, the bulk of this volume focuses on migraine and migraine-specific comorbidities. However, the relevance and adaptation of assessment and treatment strategies for tension-type headache are integrated into various sections when appropriate and supported empirically. Although behavioral interventions are highly efficacious for children with headache, the primary focus herein is on adults with headache disorders; considerations for child and adolescent patients are incorporated when appropriate. This volume outlines multiple behavioral strat-

egies and interventions but is not intended as a one-size-fits-all, cookbook-type manual. The clinician is instead encouraged to individualize and select interventions tailored to patient needs, resources, and other considerations. As such, this volume is intended to provide a structured approach that can be adapted across multiple clinical contexts and among a variety of headache patients.

Acknowledgments

We would like to acknowledge series editor Dr. Danny Wedding, associate editor Dr. Kenneth Freedland, and Mr. Robert Dimbleby of Hogrefe Publishing. Their guidance and wisdom throughout the process of assembling this volume, the first major book on this topic in over 20 years, was invaluable. We are grateful to our undergraduate and graduate academic mentors: Drs. Stephen Chew, Dudley McGlynn, and Donald Penzien (T.A.S.); Drs. James Motiff, Kenneth Holroyd, and Thomas Creer (D.B.P.); Drs. James Snyder and Robert Zettle (J.C.R.); Drs. Sandra Gramling, Justin Nash, Kenneth Holroyd, and Frank Andrasik (R.A.N.); and Drs. Lori Rokicki and James Eisenach (T.T.H.). They taught us, challenged us, and instilled in us a commitment to scientifically informed practice and a love and respect for the field of behavioral medicine.

We wish to extend our utmost gratitude to coauthor Dr. Donald Penzien, who directly trained three of us (T.A.S., J.C.R., and T.T.H.), who mentored our early headache careers, and whose experimental and clinical contributions to behavioral medicine are unparalleled.

We are grateful also to our colleagues and students at the University of Mississippi, University of Mississippi Medical Center, Elliott Hospital, Mercy Clinic Headache Center/Mercy Health Research, and Wake Forest School of Medicine.

The concepts and strategies included herein reflect our combined experience of nearly 100 years in seeing headache patients and conducting headache research. We are grateful to every patient and research participant who has entrusted us with your pain, suffering, and experiences – for in your strength and sharing these pages were born. You inspired us to attend to aspects of your pain beyond the symptoms alone. This book is dedicated to you.

To our families – your love and support made our careers, and ultimately this volume, possible.

Dedications

To my parents, Johnny and Kathy, for an unwavering foundation of support and love. (T.A.S.)

To my daughter, Caitlin Penzien – the joy of my life. And to the many trainees and colleagues who have served as treasured friends and collaborators over the years, including Dr. Jeanetta Rains, Dr. Tim Houle, Dr. Todd Smitherman, and Dr. Ken Holroyd, to name only just a few. (D.B.P.)

To my parents, Paul and Ellen Rains, for a lifetime of love and encouragement. (J.C.R.)

To my parents, Don and Judy. To my amazing daughters, Ashtyn and Ansley – you both bring a smile to my heart every day. To my wife, Hilari – your unconditional love, support, and friendship makes me fall more in love with you every day. (R.A.N.)

To my mother, Mary Lou. To my brothers, Jeff and Chris – I have written a book and you have not. To Dr. Todd Smitherman – Thank you for your herculean efforts in the writing of this book. (T.T.H.)

Table of Contents

	e	V11
Ackno	wledgments	ix
Dedica	ations	X
1	Description	. 1
1.1	Terminology	1
1.2	Definition	1
1.3	Epidemiology	3
1.4	Course and Prognosis	4
1.5	Differential Diagnosis	5
1.5.1	Cluster Headache	5
1.5.2	Medication Overuse Headache	6
1.5.3	Posttraumatic Headache.	7
1.5.4	"Sinus Headache"	7
1.5.5	Menstrual Migraine	7
1.6	Diagnostic Red Flags.	8
1.7	Comorbidities	8
1.7.1	Depression	9
1.7.2	Anxiety Disorders	9
1.7.3	Other Psychiatric Comorbidities	10
1.7.4	Insomnia and Other Disturbances of Sleep.	10
1.7.5	Obesity	11
1.7.6	Cardiovascular Disease	11
1.7.0	Headache Triggers	11
1.9	Diagnostic Procedures and Documentation.	12
1.9.1	Headache Self-Monitoring.	13
1.9.2	Headache Diagnostic Interviews	15
1.9.3	Headache Questionnaires.	15
1.9.4	Assessing Psychiatric Comorbidity	16
1.9.4	Assessing Improvement Over Time	17
1.9.3	Assessing improvement over time	1 /
2	Theories and Models	
2.1	The Biopsychosocial Perspective	19
2.2	Pathophysiology of Headache	20
2.3	Stress-Arousal Headache	21
2.3.1	Stress	22
2.3.2	Arousal	22
2.3.3	Headache	23
2.4	Contemporary Behavioral Models	23
2.4.1	Avoidance	24
2.4.2	Headache-Related Cognitions	24
2.4.3	Coping Strategies	25
2.5	Treatment Implications of the Model	26