International Society for the Study of Women's Sexual Health

TEXTBOOK OF

FEMALE SEXUAL FUNCTION AND DYSFUNCTION

DIAGNOSIS AND TREATMENT

EDITED BY

IRWIN GOLDSTEIN, ANITA H. CLAYTON, ANDREW T. GOLDSTEIN, NOEL N. KIM, AND SHERYL A. KINGSBERG

WILEY Blackwell

Textbook of Female Sexual Function and Dysfunction
Diagnosis and Treatment

Textbook of Female Sexual Function and Dysfunction

Diagnosis and Treatment

Edited by

Irwin Goldstein, MD, IF
Sexual Medicine
Alvarado Hospital
Department of Surgery
University of California, San Diego
San Diego Sexual Medicine
San Diego, CA, USA

Anita H. Clayton, MD, IF, FAPA, FASCP
Department of Psychiatry and Neurobehavioral Sciences
University of Virginia School of Medicine
Charlottesville, VA, USA

Andrew T. Goldstein, MD, FACOG, IF
Department of Obstetrics and Gynaecology
The George Washington University School of Medicine and Health Sciences
Centers for Vulvovaginal Disorders
Washington, DC, USA

Noel N. Kim, PhD, IF
Institute for Sexual Medicine
San Diego, CA, USA

Sheryl A. Kingsberg, PhD, IF
Division of Behavioral Medicine
Department of OB/GYN
University Hospitals Cleveland Medical Center
Departments of Reproductive Biology and Psychiatry
Case Western Reserve University School of Medicine
Cleveland, OH, USA

WILEY Blackwell

This edition first published 2018

Registered Office(s)
John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, USA
John Wiley & Sons Ltd, The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, UK

Editorial Office
9600 Garsington Road, Oxford, OX4 2DQ, UK

For details of our global editorial offices, customer services, and more information about Wiley products visit us at www.wiley.com.

Wiley also publishes its books in a variety of electronic formats and by print-on-demand. Some content that appears in standard print versions of this book may not be available in other formats.

Library of Congress Cataloging-in-Publication Data

Names: Goldstein, Irwin, editor. | Clayton, Anita H., editor. |
Goldstein, Andrew, M.D., editor. | Kim, Noel N., editor. | Kingsberg, Sheryl A., editor.
Title: Textbook of female sexual function and dysfunction : diagnosis and treatment/edited by
Irwin Goldstein, Anita H. Clayton, Andrew T. Goldstein, Noel N. Kim, Sheryl A. Kingsberg.
Description: Hoboken, NJ : Wiley, 2018. | Includes bibliographical references and index. |
Identifiers: LCCN 2017055314 (print) | LCCN 2017056729 (ebook) | ISBN 9781119266112 (pdf) |
ISBN 9781119266150 (epub) | ISBN 9781119266136 (oBook) | ISBN 9781119266099 (cloth)
Subjects: | MESH: Sexual Dysfunction, Physiological–diagnosis | Sexual Dysfunction, Physiological–therapy |
Women | Sexuality–physiology
Classification: LCC RC556 (ebook) | LCC RC556 (print) | NLM WP 610 | DDC 616.85/83–dc23
LC record available at https://lccn.loc.gov/2017055314

Cover Design: Wiley
Cover Image: © Vectorig/Getty Images

Set in 10/12pt Warnock by SPi Global, Pondicherry, India

10 9 8 7 6 5 4 3 2 1

Contents

List of Contributors

Stanley E. Althof, PhD, IF
Center for Marital and Sexual Health of South Florida
West Palm Beach, FL, USA

Sophie Bergeron, PhD
Département de Psychologie
Université de Montréal
Montréal, QC, Canada

Johannes Bitzer, MD, IF
University Hospital Basel
Multidisciplinary Center for Sexual Medicine
Basel, Switzerland

Karen Brandon, DSc PT WCS, BCB-PMD
Kaiser Permanente
Fontana, CA, USA

Anita H. Clayton, MD, IF, FAPA, FASCP
Department of Psychiatry and Neurobehavioral Sciences
University of Virginia School of Medicine
Charlottesville, VA, USA

Leonard R. Derogatis, PhD
Maryland Center for Sexual Health
Towson, MD, USA

Melissa A. Farmer, PhD
Department of Physiology
Feinberg School of Medicine
Northwestern University
Chicago, IL, USA

Eleni Frangos, PhD
Pain and Integrative Neuroscience Branch
NCCIH–NIH
Bethesda, MD, USA

Andrew T. Goldstein, MD, FACOG, IF
Department of Obstetrics and Gynecology
The George Washington University School of Medicine and Health Sciences
Centers for Vulvovaginal Disorders
Washington, DC, USA

Irwin Goldstein, MD, IF
Sexual Medicine
Alvarado Hospital
Department of Surgery
University of California, San Diego
San Diego Sexual Medicine
San Diego, CA, USA

Sue W. Goldstein, CSE, CCRC, IF
San Diego Sexual Medicine
San Diego, CA, USA

Emmanuele A. Jannini, MD
Department of Systems Medicine
University of Rome Tor Vergata
Rome, Italy

Sherri L. Jones, PhD
Douglas Mental Health University Institute
Department of Psychiatry, McGill University
Montreal, QC, Canada

Susan Kellogg Spadt, PhD, CRNP, IF, FCST, CSC
Center for Pelvic Medicine
Bryn Mawr, PA, USA

Noel N. Kim, PhD, IF
Institute for Sexual Medicine
San Diego, CA, USA

Sheryl A. Kingsberg, PhD, IF
Division of Behavioral Medicine
Department of OB/GYN
University Hospitals Cleveland Medical Center
Departments of Reproductive Biology and Psychiatry
Case Western Reserve University School of Medicine
Cleveland, OH, USA

Barry R. Komisaruk, PhD
Department of Psychology
Rutgers University
Newark, NJ, USA

Tuuli M. Kukkonen, PhD, CPsych
Department of Family Relations and Applied Nutrition
University of Guelph
Guelph, ON, Canada

Fiona McMahon, PT, DPT
Beyond Basics Physical Therapy, LLC
New York, NY, USA

Sara Nasserzadeh, PhD, DipPST
Relationship & Sexual Health Consultants
Palo Alto, CA, USA

Sharon J. Parish, MD, IF
Department of Medicine in Clinical Psychiatry
Department of Clinical Medicine
Weill Cornell Medical College
New York, NY, USA

Kwangsung Park, MD, PhD, IF
Department of Urology
Chonnam National University Medical School
Gwangju, Republic of Korea

James G. Pfaus, PhD, IF
Center for Studies in Behavioral Neurobiology
Department of Psychology, Concordia University
Montréal, QC, Canada

Caroline F. Pukall, PhD, CPsych
Department of Psychology
Queen's University
Kingston, ON, Canada

Tami Serene Rowen, MD, MS, IF
Department of Obstetrics, Gynecology and Reproductive Sciences
University of California, San Francisco
San Francisco, CA, USA

Sara K. Sauder, PT, DPT
Austin, TX, USA

Isbelia Segnini, MSc, CCRC, C-AASECT
Clinical El Cedral
Caracas, Venezuela

James A. Simon, MD, CCD, NCMP, IF, FACOG
IntimMedicine Specialists™
George Washington University School of Medicine
Washington, DC, USA

Amy Stein, DPT, BCB-PMD, IF
Beyond Basics Physical Therapy, LLC
New York, NY, USA

Linda Vignozzi, MD
Sexual Medicine and Andrology Unit
Department of Experimental and Clinical Biomedical Sciences
University of Florence
Florence, Italy

Nan Wise, PhD
Department of Psychology
Rutgers University
Newark, NJ, USA

Foreword

It is a unique honor and privilege for me to introduce readers to this outstanding new volume on female sexual function and dysfunction from the International Society for the Study of Women's Sexual Health (ISSWSH). The depth and breadth of coverage of this complex and rapidly evolving area of women's health is impressive, to say the least, and the inclusion of much new research and clinical data attests to the enormous energy and dedication of growing numbers of researchers and clinicians dedicated to studies in female sexual health. This latest textbook is truly comprehensive in its coverage of both physical and psychological sexual disorders, in addition to providing up-to-date, basic science formulations of underlying mechanisms and processes; all from a consistent and coherent biopsychosocial perspective. As a psychologist and former sex therapist, it is especially gratifying to see this biopsychosocial model applied increasingly across female sexual disorders and problems, regardless of etiology or treatment approaches. The editors have done the field a great service in balancing these perspectives both within and across chapters. The textbook is unique also in the depth of scholarship and extensive reference lists provided with each of the chapters – what a resource for graduate students, residents and fellows!

This new textbook is also a testament to the success of ISSWSH, which, in the 18 years since it was founded, has become the major professional society with a unique focus on female sexual health. Many of us recall the first meeting of the society in Boston in 2000, at which the initial mission statement was drafted and officers elected. The organization has grown in leaps and bounds since then, and this textbook provides impressive testimony to the expanding knowledge base and clinical interests of the society. Since its inception, ISSWSH has benefited greatly from the devotion and energy of its founding members and officers; with special credit due to Sue and Irwin Goldstein, Sharon Parish, Sheryl Kingsberg, Anita Clayton, Stan Althof, Len Derogatis, Jim Simon, Noel Kim, Annamaria Giraldi, and others. I would like to acknowledge also a special debt to my late friend and colleague, Sandra Leiblum, who served as the first president of ISSWSH. Her contributions are cited throughout this volume, and her spirit and energy did much to inspire her colleagues, students and others to pursue clinical or research interests in women's sexuality. Sandy was also a dedicated educator who taught human sexuality and women's sexual health to literally thousands of students and residents during her 40 year career at Rutgers. Her spirit lives on in these pages!

Finally, a special word of appreciation is due to Sue Goldstein – associate editor of this volume and much loved "mother hen" of the society. No one has taken on more roles for the society, or worked as tirelessly as Sue in achieving the goals of ISSWSH. This volume is finally a testament to Sue's enduring and much appreciated contributions to the field. Thank you Sue on behalf of all!

Raymond C. Rosen, PhD
Chief Scientist, New England Research Institutes
Former Professor of Psychiatry, Rutgers Medical School
Co-Director, Human Sexuality Program

Preface

The International Society for the Study of Women's Sexual Health (ISSWSH) is an international, multidisciplinary, academic, clinical and scientific organization dedicated to providing opportunities for communication among scholars, researchers and practitioners about women's sexual health; to support the highest standards of ethics and professionalism in research, education and clinical practice of women's sexual health; and to provide the public with accurate information about women's sexual health.

ISSWSH strongly emphasizes and fervently supports the biopsychosocial management of women with sexual dysfunction. With that encompassing mission and scientific focus in mind, the ISSWSH *Textbook of Female Sexual Function and Dysfunction: Diagnosis and Treatment* has been written by ISSWSH members primarily to help healthcare providers in the various disciplines involved in women's sexual health, including sex therapy, pelvic floor physical therapy and medical therapy, better manage women with distressing sexual health issues. Since ISSWSH is the largest society comprised of specialists in women's sexual health, the idea for an ISSWSH textbook to provide the optimal scientific, multidisciplinary clinical practice guidelines for use by providers was natural. With millions of women needing help, ISSWSH members can provide accurate data for the providers in the various disciplines caring for women with sexual health concerns. By writing a textbook on female sexual dysfunction based on published laboratory and clinical research and expert clinical experience, ISSWSH is able to further its mission of communication, professionalism and disseminating information.

The multidisciplinary field of women's sexual health has come a long way since the inaugural meeting of ISSWSH in 2000. For almost two decades, ISSWSH has fostered research in the study, nosology, diagnosis and treatment of women with sexual health disorders. ISSWSH funds research projects in women's sexual health, especially important in an era where government funds are lacking. ISSWSH supports numerous educational opportunities including annual meetings, educational courses, and publications from consensus-based panels resulting in nomenclature, white paper and process of care documents. ISSWSH, an affiliate member society of the International Society for Sexual Medicine (ISSM), has three official journals: *The Journal of Sexual Medicine*, *Sexual Medicine*, and *Sexual Medicine Reviews*. Using these and other journals that publish in women's sexual health, ISSWSH has helped grow scientific peer-reviewed publications in women's sexual health, expanding from 273 scientific peer-reviewed publications found in PubMed in 2000 (by using the key phrase "female sexual dysfunction") to 772 in 2016 – almost tripling available literature, much of which has been authored by ISSWSH members.

This ISSWSH textbook is intended to provide clinical practice guidelines for both novice and expert practitioners treating women with sexual health concerns. In the ten years since the publication of the first

multidisciplinary textbook in the field, *Women's Sexual Function and Dsyfunction*, our knowledge has expanded and medications for treating various sexual dysfunctions have been added in some countries to the nonpharmacologic treatment strategies already available. As an official publication of the society, this material has been vetted by the editors on behalf of ISSWSH. Four of the editors (Clayton, I. Goldstein, A. Goldstein, Kingsberg) have been presidents of the society while the fifth (Kim) is president-elect. We have all given of our time freely because of our passion for the field and our passion for ISSWSH, as has the associate editor, Sue W. Goldstein. In particular, Sue spent countless hours as the central communicator, tracker of progress, and editorial associate, guiding this book from initial development to final publication. We would also like to thank Gail Goldstein for her time and efforts in helping to edit the pain section.

It is imperative that clinicians understand the various conditions impacting sexual desire, arousal, orgasm, and pain, how to make a correct diagnosis, the therapeutic options available, and the science behind the various treatments, in order to provide optimal patient management and improve patient quality of life. All women have the right to health, including sexual health. The *Textbook of Female Sexual Function and Dysfunction: Diagnosis and Treatment* will serve as a valuable tool to all those involved in helping women maintain or restore their sexual health.

For ease of use, the text is divided into four basic sections: Hypoactive Sexual Desire Disorder, Arousal Disorders, Orgasm Disorders, and Sexual Pain Disorders. Within each section there is content on the nosology and epidemiology, anatomy and physiology, and diagnosis and treatment from both psychologic and biologic points of view, including musculoskeletal management where appropriate.

It is anticipated that ISSWSH will update this textbook as needed. The field of women's sexual medicine is rapidly evolving and ISSWSH members have been influential in paving the way for expansion of knowledge in the field of female sexual dysfunction – this textbook reflects current understanding. We hope that you agree and find the *Textbook of Female Sexual Function and Dysfunction* to be an essential resource in caring for women and their sexual health.

Irwin Goldstein, MD, IF
Anita H. Clayton, MD, IF
Andrew T. Goldstein, MD, IF
Noel N. Kim, PhD, IF
Sheryl A. Kingsberg, PhD, IF

1

History of the International Society for the Study of Women's Sexual Health (ISSWSH)

Sue W. Goldstein

Abstract

The International Society for the Study of Women's Sexual Health (ISSWSH) emanated from a course assembling experts in different disciplines, becoming the model for the society. Seventeen years later the society remains multidisciplinary, with annual meetings featuring state of the art lectures, symposia on controversial topics, and abstracts judged on scientific merit. Educational efforts expanded from a half day precourse to a fall course and another in conjunction with the National Association of Nurse Practitioners in Women's Health annually. Evidence-based conferences have included consensus panels for nomenclature for desire, arousal, and orgasm; pain; genitourinary syndrome of menopause (GSM); clinical guidelines for identification of sexual health problems; and a process of care for the management of hypoactive sexual desire disorder. ISSWSH is now established as the leading organization for disseminating valuable information to providers, researchers and educators regarding management of distressing sexual dysfunction in women.

Keywords: *ISSWSH; women's sexual health; female sexual dysfunction; multidisciplinary; desire; arousal; orgasm; pain; GSM; nomenclature*

The International Society for the Study of Women's Sexual Health (ISSWSH) is the only professional organization dedicated to women's sexual function and dysfunction. The society was founded less than two decades ago. Therefore, the history of the society is directly linked to the history of the field.

The approval of sildenafil in 1998 by regulatory agencies and a publication in the *New England Journal of Medicine* [1] led women to call urologist Irwin Goldstein to demand a medication for their sexual health problems. There was a paucity of information about the physiology of sexual function and the pathophysiology of sexual dysfunction in women, but Goldstein wanted to change that. Under the auspices of Boston University School of Medicine, he developed a course entitled New Perspectives in Female Sexual Dysfunction, assembling experts in different disciplines to share their information in an effort to piece together available knowledge. This became the model on which the society was developed three years later.

The course was held in the Boston area in 1998, 1999 and 2000. The first year there were over 200 registrants from around the world. Associated with the 1998 course, the American Foundation for Urologic Diseases sponsored a consensus conference with 19

Textbook of Female Sexual Function and Dysfunction: Diagnosis and Treatment, First Edition. Edited by Irwin Goldstein, Anita H. Clayton, Andrew T. Goldstein, Noel N. Kim, and Sheryl A. Kingsberg.

international experts, resulting in the development of nomenclature for use in women's sexual dysfunction [2]. Prior to this time all nomenclature was based on the Diagnostic and Statistical Manual of Mental Disorders (DSM) of the American Psychiatric Association [3]. With the recognition of biologic components to sexual function, and the need to understand sexual dysfunction in women, the course was lengthened and podium and poster sessions added. Attendance doubled in 1999 with many returning registrants. When queried about interest in initiating a society, the response was negative. The following year, however, the group had an overwhelmingly positive response and the Female Sexual Function Forum was born.

The society was developed in a multidisciplinary manner with by-laws designating that each committee and the board of directors be balanced in terms of gender, geography, and discipline. All disciplines with an interest in women's sexual health would be welcome in the society, with all active members having equal import, regardless of profession, specialty or degree. Many members of the inaugural board continue to be active members, a testament to both the strength of and need for the organization. One of the first society benefits was the start of a moderated on-line forum (ISSWSHNET) for difficult cases that facilitated communication among people from various locations, disciplines, and perspectives. Having gone through multiple iterations, ISSWSHNET remains a benefit for society members.

The format of the first meeting set the tone for future meetings, with state of the art lectures, symposia on controversial topics, and abstracts judged on scientific merit for podium or poster presentation. The hot topic through the first several annual meetings was the use of androgens in women, transitioning later to oral contraceptives and sexual dysfunction. The first business meeting and election were held on 28 October 2000, with Sandra Leiblum voted in as the first president (Figure 1.1).

Figure 1.1 Sandra Leiblum, PhD, first president of the International Society for the Study of Women's Sexual Health, presiding over the business meeting. (*See plate section for color representation of the figure*)

After a year as the Female Sexual Function Forum it was noted that the word "female" could refer to animals, so, in 2001, the organization was renamed the International Society for the Study of Women's Sexual Health. Alessandra Graziottin from Italy ascended to the presidency but the board remained stable to help the fledging society. Only active or honorary members could serve on the board or as committee chairs, as affiliate members were associated with industry. The society struggled financially but survived through the fierce passion of the board and the support of its management company.

Nearly 400 people attended the 2002 meeting in Vancouver – the first time this group met away from Boston. Held shortly after the publication of the widely publicized Women's Health Initiative [4], the leadership responded by adding a lunch seminar to disseminate accurate information and help dispel myths propagated by the press. Symposia were designed to span both the biological and

psychological realms in the basic science and clinical arenas. While moving the 2003 meeting to Amsterdam was exciting, it put the society at risk, with a decrease in attendance and increase in meeting costs. Under Cindy Meston's leadership, a development committee was established to seek industry support to help underwrite the conference, as is common among many other societies, with the long term goal of financial stability.

Lorraine Dennerstein put her presidential stamp on the society by recruiting young researchers in an attempt to grow both the society and the field. With the return to the United States in 2004 the society collaborated with the National Institutes of Health, cosponsoring the meeting "Vulvodynia and Sexual Pain Disorders in Women" held the day before the Atlanta ISSWSH meeting [5]. For the first time, several pharmaceutical companies arranged their advisory board meetings around the annual meeting, thus supporting ISSWSH financially and giving increased visibility to the young society. A half-day precourse on the "Practical Management of Women's Sexual Dysfunction" preceded the annual meeting, a response to the increasing demand for instruction for both the novice and advanced health-care provider. The precourse enrollment that first year exceeded expectations with 160 attendees. The board responded by naming an education committee to develop a program of educational courses during the annual meeting, as well as a free-standing three-day course to be held at another time of year.

With these changes ISSWSH was beginning to make its true mark on the field of medicine. In 2005, ISSWSH was under the leadership of its first male president, Stan Althof, and in 2006 the annual meeting moved from October to February, in an attempt to find a dedicated time slot not conflicting with other societies, leaving the October time available for the three-day educational "Fall Course". The rotation of east coast, west coast, Europe for annual meetings would continue for a few years (Table 1.1), until it made more financial sense to stay in the United States, as attendees and drug development programs were based in the United States, allowing for growth of sponsorship opportunities.

In 2011, the term of president (and consequently both president elect and past president) was changed from one to two years, allowing leadership to develop projects and see them through fruition. With the approval by the Food and Drug Administration of medications for women with various sexual dysfunctions, industry support grew and the society became fiscally sound. The ability to obtain unrestricted educational grants meant the society could fund educational projects outside of the annual meeting. Under the leadership of Andrew Goldstein a new nomenclature for pain was developed in conjunction with International Society for the Study of Vulvovaginal Disease and International Pelvic Pain Society [6], and at a consensus meeting with the North American Menopause Society vulvovaginal atrophy was renamed as genitourinary syndrome of menopause or GSM [7], which is now the accepted term. President Sharon Parish assembled a nomenclature consensus conference to define disorders of desire, arousal, and orgasm [8, 9], and coordinated a meeting sponsored by ISSWSH to ensure these definitions would be considered as part of the new ICD-11 coding [10]. Irwin Goldstein supported the global development committee, securing grants for projects, including a white paper on hypoactive sexual desire disorder [11], and a process of care for the management of women with generalized, acquired hypoactive sexual desire disorder [12]. For the first time, the society was finally able to set aside money in an investment account in 2015 and to use its funds to offer grants to trainees and researchers early in their careers, resulting in future presentations at ISSWSH annual meetings.

With ISSWSH dedicated solely to women's sexual health, other organizations have turned to the society for education. ISSWSH has co-sponsored a course with the National

Table 1.1 Dates and locations of ISSWSH annual meetings and the presidents at that time.

Term	President	Meeting location
2000–2001	Sandra R. Leiblum, PhD	Boston, MA (10/01)
2001–2002	Alessandra Graziottin, MD	Vancouver, Canada (10/02)
2002–2003	Cindy M. Meston, PhD, IF	Amsterdam, The Netherlands (10/03)
2003–2004	Lorraine Dennerstein, MBBS, PhD, DPM, IF	Atlanta, GA (10/04)
2004–2005	Stanley E. Althof, PhD, IF	Las Vegas, NV (10/05)
2005–2006	Anita H. Clayton, MD, IF, FAPA	Lisbon, Portugal (03/06)
2006–2007	Anita H. Clayton, MD, IF, FAPA	Lake Buena Vista, FL (02/07)
2007–2008	Annamaria Giraldi, MD, PhD, IF	San Diego, CA (02/08)
2008–2009	Rosella E. Nappi, MD, PhD	Florence, Italy (02/09)
2009–2010	Sheryl A. Kingsberg, PhD, IF	St. Petersberg, FL (02/10)
2010–2011	Alan Altman, MD, IF	Scottsdale, AZ (02/11)
2011–2012	Alan Altman, MD, IF	Jerusalem, Israel (02/12)
2012–2013	Andrew T. Goldstein, MD, IF, FACOG	New Orleans, LA (02/13)
2013–2014	Andrew T. Goldstein, MD, IF, FACOG	San Diego, CA (02/14)
2014–2015	Sharon J. Parish, MD, IF, NCMP	Austin, TX (02/15)
2015–2016	Sharon J. Parish, MD, IF, NCMP	Charleston, SC (02/16)
2016–2017	Irwin Goldstein, MD, IF	Atlanta, GA (02/17)
2017–2018	Irwin Goldstein, MD, IF	San Diego, CA (02/18)

Association of Nurse Practitioners in Women's Health since 2014, providing educational content. The society has taught CME courses at the International Society for Sexual Medicine, American College of Obstetrics and Gynecology, and the International UroGynecology Association, providing evidence-based content to non-ISSWSH members and spreading awareness of women's sexual function and dysfunction.

In recent years, the society has moved into advocacy and has developed useful tools, including publication of clinical pearls and assembling an official educational slide-set, both benefits for members. Online content for both providers and patients has been and will continue to be developed. Consensus panels have convened to establish clinical guidelines in different aspects of sexual dysfunction in women. ISSWSH is now established as a leading organization in disseminating valuable information to providers, researchers, and educators in order to improve management of distressing sexual dysfunction in women.

References

1 Goldstein I, Lue T, Padma-Nathan H, *et al*. Oral sildenafil in the treatment of erectile dysfunction. *New Engl J Med*. 1998;338:1396–1404.

2 Basson R, Berman J, Burnett A, *et al*. Report of the international consensus development conference on female sexual dysfunction: definitions and classifications. *J Urol*. 2000;163(3):888–893.

3 American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders IV, Text Revision (DSM-IV-TR).

American Psychiatric Association, Washington, DC. 2003.
4 Rossouw J, Anderson GL, Prentice RL, *et al*. Risks and benefits of estrogen plus progestin in healthy postmenopausal women: principal results from the Women's Health Initiative randomized controlled trial. *JAMA*. 2002;288(3):321–333.
5 Bachmann G, Rosen R, Pinn VW, *et al*. Vulvodynia: a state-of-the-art consensus on definitions, diagnosis and management. *J Reprod Med*. 2006;51(6):447–456.
6 Bornstein J, Goldstein AT, Stockdale CK, *et al*. 2015 ISSVD, ISSWSH, and IPPS Consensus Terminology and Classification of Persistent Vulvar Pain and Vulvodynia. *J Sex Med*. 2016;13(4):607–612.
7 Portman D, Gass M, Kingsberg S, *et al*. Genitourinary syndrome of menopause: new terminology for vulvovaginal atrophy from the International Society for the Study of Women's Sexual Health and the North American Menopause Society. *Menopause.* 2014;21:1063–1068.
8 Derogatis L, Sand M, Balon R, *et al*. Toward a more evidence-based nosology and nomenclature for female sexual dysfunctions – Part I. *J Sex Med*. 2016;13(12):1881–1887.
9 Parish SJ, Goldstein, AT, Goldstein, SW, *et al*. Toward a More Evidence-Based Nosology and Nomenclature for Female Sexual Dysfunctions – Part II. *J Sex Med*. 2016;13(12):1888–1906.
10 Reed GM, Drescher J, Krueger, RB, *et al*. Disorders related to sexuality and gender identity in the ICD-11: Revising the ICD-10 classification based on current scientific evidence, best clinical practices, and human rights considerations. *World Psychiatry*. 2016;15(3):295–321.
11 Goldstein I, Kim NN, Clayton AH, *et al*. Hypoactive sexual desire disorder: International Society for the Study of Women's Sexual Health (ISSWSH) Expert Consensus Panel Review. *Mayo Clin Proc*. 2017;92(1):114–128.
12 Clayton A, Goldstein I, Kim NN, *et al*. The International Society for the Study of Women's Sexual Health Process of Care for Management of Hypoactive Sexual Desire Disorder in Women. *Mayo Clin Proc.* 2018;93.

2

Sexual Medicine Education and Training

Sharon J. Parish and Johannes Bitzer

Abstract

Sexual health care is part of general medical care and is needed throughout the life cycle of women. Education and training for clinicians is based on a biopsychosocial model of sexual health and should progress from undergraduate level through postgraduate and specialist training programs. The curriculum for each level must be competency based and include learning objectives; describe the knowledge, skills and attitudes; and include methods of monitoring the acquisition of new skills and knowledge. Undergraduate training must include general knowledge about the human sexual response, diagnostic categories and classifications, and skills to communicate about sexuality. Postgraduate and specialized training should provide a broader understanding of the biological, psychological, and social factors contributing to sexual dysfunction; the basis for comprehensive diagnosis; the ability to establish a therapeutic plan in collaboration with the patient; and the capacity to perform interventions or refer.

Keywords: *sexual health education; female sexual dysfunction; sexuality communication skills; sexual medicine competencies*

Sexual health care is part of general health care and is needed throughout the life span of women and men.

Education and training for health-care professionals are based on a biopsychosocial model of sexual health and should start at undergraduate level and be included in postgraduate and specialist training programs.

The program of each level must include learning objectives; describe the knowledge, skills and attitudes from a competency perspective; and include methods of monitoring the learning process.

Introduction

Sexual problems and sexual dysfunctions have a high prevalence worldwide. As sexual health is part of general health, women consider health-care professionals as the "right persons" to help. The high prevalence and high complexity of sexual health problems create the need for services from both primary care clinicians and sexual medicine specialists. This array of needs implies that all physicians should receive basic education and training in sexual medicine and that a subgroup with interest and commitment in the field should receive specialized postgraduate training [1].

Many institutions in different countries have tried to develop concepts about the learning objectives and competencies in sexual medicine for undergraduate, graduate

Textbook of Female Sexual Function and Dysfunction: Diagnosis and Treatment, First Edition. Edited by Irwin Goldstein, Anita H. Clayton, Andrew T. Goldstein, Noel N. Kim, and Sheryl A. Kingsberg.

and postgraduate levels [2]. Based on the analyses of these programs and the literature about patients' needs, we propose a model of three levels of competence in female sexual dysfunction (FSD) that should be achieved through education and training programs (Table 2.1) [3].

Undergraduate (level 1)

Education and training for medical students is based on the transference of knowledge about human sexuality, prevalence of sexual problems, and principles and skills related to communication about sexuality, including strategies and techniques to help patients to disclose problems and difficulties in this intimate and vulnerable domain of life [4]. The core framework for sexuality education focuses on knowledge, skills, and attitudes [5, 6]. Attitudinal training primarily focuses on the development of self-awareness and the cultivation of nonjudgmental behavior and professionalism when interacting with patients with sexuality concerns [6].

Knowledge includes:

- anatomy of sexual organs;
- basics of endocrine, central nervous system, neurological, and neuromuscular processes involved in central and peripheral sexual response;
- models of human sexual response;
- contraception, sexually transmitted diseases, safer sex practices.

Skills incorporate:

- how to encourage patients to ask questions about sexuality and talk about (disclose) difficulties;
- attitude toward discussing and managing sexual problems;
- openness towards the wide spectrum of sexual expression and sexual life styles;
- how to discuss and explain treatment plans, discuss benefits and risks.

Expert recommendations for enhancement of sexual health education in medical schools call for a multidimensional approach that

Table 2.1 Competencies for undergraduate, graduate and generalist physicians, and postgraduate specialists.

	Competence level 1: undergraduate	Competence level 2: graduate and generalist physicians	Competence level 3: postgraduate specialists
Female sexual dysfunctions (low desire, arousal dysfunction, orgasmic disorders, sexual pain disorders)	Know definition Screen, diagnose Know about contributing factors and therapeutic options	Diagnose based on standards Assess contributing factors Establish descriptive and comprehensive diagnosis (biopsychosocial model) Elaborate treatment options	Hormonal & drug treatment Sensate focus Couples therapy Physiotherapy
Oncologic diseases	Know impact and prevalence Ask and screen	Establish a comprehensive diagnosis including pre-existing factors, disease related factors, and emotional, cognitive and behavioral responses Develop treatment plan Conservative treatment	Specialized surgical interventions Mechanical intervention Hormonal intervention Physiotherapy
Metabolic and neurologic diseases	Know impact and prevalence Ask and screen	Establish a comprehensive diagnosis including pre-existing factors disease related factors, and emotional, cognitive and behavioral response Develop treatment plan Conservative treatment	Modified sensate focus Mechanical intervention Drug therapy Physiotherapy

incorporates curricular reform and innovation aimed at educational infrastructure [7]. Elements include developing a skills-based curriculum, establishing multidisciplinary teams, integrating sexual health content across core curriculum courses and longitudinally throughout medical school, creating mandatory blocks and electives, and including assessment of sexual health knowledge in licensing examinations [7]. Ideally, at least one "champion" should be involved at each institution to ensure that sexuality education is included and effectively integrated into the entire curriculum [6].

Sexuality education should be multidisciplinary and include psychiatry, gynecology, urology, and primary care, and also may incorporate sex therapists, psychologists, epidemiologists, and sexologists. Sexual medicine content is optimally delivered through an array of interactive modalities that enable skills training and assessment. These include didactics, panel discussions, small group case-based seminars, role play, standardized patients, observed structured clinical examinations with direct and immediate feedback, community/peer education, and immersion/desensitization activities [5, 6].

A recent survey regarding lesbian, gay, bisexual, and transgender-related content in United States and Canadian allopathic and osteopathic medical schools reported that dedicated content hours to these topics was small and that the perceived quality was variable. Suggested improvements included increased curricular time dedicated to lesbian, gay, bisexual, and transgender-related health and disparities, instruction about the difference between behavior and identity, and faculty engagement to teach these topics [8].

Graduate and Postgraduate (Level 2 and 3)

Graduate and generalist physicians, as well as medical specialists, should be able to understand the sexual suffering of their patients and translate it into a descriptive and a comprehensive diagnosis as the basis for a preliminary or more elaborate treatment plan.

The treatment plan may include education and behavioral advice or more specialized interventions, such as hormonal and other pharmacological treatment, surgery, physiotherapy, and specialized psychotherapeutic interventions. The latter competencies need special training (level 3) [9, 10].

The International Consultation in Sexual Medicine published a review of the current state and future educational needs in graduate and postgraduate sexual health education. The key points summarized that: (i) sexual medicine has grown as a specialty in the recent decades; but regulatory aspects of training, assessment, and certification are lagging behind scientific developments and clinical knowledge; (ii) examples of curricula and associated assessments may be related to high quality sexual medicine care; (iii) competency assessment has been applied to surgical training (primarily male), reflecting increased interest in simulation for skills training; (iv) although curriculum development has been primarily executed in medical training, interest is emerging in similar standards for training allied health professionals [2].

Despite the emergence of some training opportunities employing varied methodologies, objective measures of the impact of graduate and postgraduate physician training in sexual health on patient satisfaction and objective health outcomes are lacking [11].

Education and Training in Female Sexual Health Care for Practicing Clinicians

To provide patients with competent sexual health care, professionals need to train and develop knowledge, skills and attitudes related to the following key principles [12]:

- Sexuality is an intimate part of the patient's identity, self-esteem, shame, and vulnerabilities. Therefore, talking about sexuality requires openness, empathy, a nonjudgmental approach, and a respectful attitude focusing on resources and not on deficits.

- Sexual problems and dysfunctions are usually the result of an interaction of factors that are best identified using the biopsychosocial model. This means that physicians have to be open to, and interested in, different perspectives, ranging from physiology/pathophysiology to psychology/psychopathology to social psychology and sociology [13].
- Solutions to sexual problems and treatment of dysfunctions may be a long-term process and, invariably, require the active collaboration of the patient or couple. This implies that clinicians frequently need to include partners in the process, involve patients in decision making, and adapt strategies that match the resources and capacities of the patient [14].

Incorporating these premises, we have developed a semi-structured approach to patients with sexual problems and dysfunctions that includes the elements that form the core education and training for generalist physicians [4].

Elements of a Structured Approach to a Patient with Sexual Problems and Dysfunctions

The consultation in sexual medicine is characterized by the following elements:

- Patient-centered: the patient with her needs, subjective suffering, questions, and priorities is at the center of the consultation; she is empowered by knowledge and insight. To achieve this, communication should include active listening, mirroring, summarizing, responding to emotions, and providing information in a language the patient can understand. The doctor–patient relationship should be nonjudgmental and based on respect, aimed at establishing a relationship of mutual trust and confidence.
- Diagnosis and treatment are based on the biopsychosocial understanding of human sexuality. The diagnostic workup integrates biological and psychosocial factors contributing to the sexual problem, understanding these factors as interactive. Based on a shared understanding between the clinician and patient, therapeutic options should be reviewed together, individualizing treatment according to the individual needs of the patient.

Basic Structured Approach to a Patient Presenting with a Sexual Problem [14]

- Listen to the patient's story (narrative) and practice patient-centered communication.
  - Utilize communications skills: active listening, reflection, mirroring, summarizing, responding to emotions, reframing.
- Ask differentiating questions.
  - Enable differentiation of a sexual problem into primary versus secondary, situational versus global, abrupt beginning versus slow process.
- Explore a typical sexual encounter or experience (behavioral interactive sequence).
  - "What happened last time when you were sexually active?"
- Elaborate a descriptive diagnosis (using classification systems).
  - Disorder/dysfunction according to DSM-5 [15], International Consultation on Sexual Medicine classification [16, International Society for the Study of Women's Sexual Health (ISSWSH) nomenclature [17], ICD-10.
  - Use of questionnaires for screening and diagnosis.
- Explore conditioning and risk factors contributing to the clinical problem.
  - Medical (history, examination).
  - Individual psychological (sexual biography, major life events, lifecycle), sexual learning.
  - Interactional: partner communication and dynamics.
  - Sociocultural: sexual norms and concepts.

- Elaborate a comprehensive explanatory diagnosis as a working model to be shared with the patient.
  - Construct individualized nine-field table of conditioning factors (Table 2.2).
- Develop a treatment plan.
  - Use nine-field table (Table 2.2) [18] results to address possible therapeutic interventions.
  - Practice shared decision making:
    - discuss benefit/risk or advantages/disadvantages of different options in relation to patient's values and needs;
    - make treatment decision transparent and shared.

A useful instrument for training this approach is the use of the graphic summary of the comprehensive explanatory diagnosis in the form of a modified nine-field diagram (Table 2.2) [18]. The horizontal axis includes biomedical, psychological, and sociocultural factors; the vertical axis incorporates predisposing (distant, indirect), precipitating (triggering), and maintaining (proximate factors).

In addition, sexual health care for patients with various medical conditions has to take into account disease and treatment specific factors that have an impact on the sexual function. For the most common conditions, the algorithm shown in Figure 2.1 incorporates the specific medical condition (oncologic, metabolic and neurological disorders, etc.) [3].

Algorithms and structured approaches form the basis for education and training in female sexual disorders in general and in the context of disease and treatment of disease.

Regarding the disease and therapy specific factors, eight different levels through which a disease or a therapy can have an impact on sexual function can be outlined (Table 2.3) [3].

Education and Training in Female Sexual Health Care for Sexual Medicine Specialists

Based on these schemas, sexual medicine societies and institutions have developed educational and training programs defining knowledge, skills, attitudes, and evaluation methods for defined sexual dysfunctions. These training programs are designed for specialists in sexual medicine. The European Society for Sexual Medicine (ESSM) and the International Society for the Study of Women's Sexual Health have intensive courses that provide didactic, experiential, and hands-on training in an interactive format.

The European Society for Sexual Medicine designed such a curriculum that

Table 2.2 Modified nine-field diagram [10] for the comprehensive explanatory diagnosis.

	Biomedical		**Psychological**		**Sociocultural**
	Chronic diseases and drugs	***Hormonal factors***	***Intraindividual***	***Interpersonal***	
Predisposing Distant Indirect					
Precipitating Factors Trigger					
Maintaining Proximate Direct					

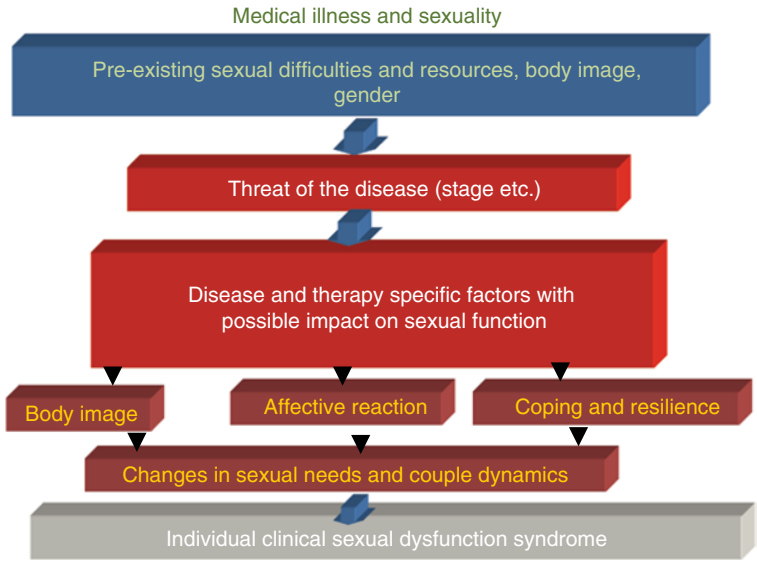

Figure 2.1 Algorithm incorporating the specific medical condition. (*See plate section for color representation of the figure*)

Table 2.3 Disease and therapy specific factors having an impact on female sexual function [3].

Danger	The subjectively experienced threat
Destruction	Destruction of sexual organs
Disfigurement	Visible changes of the body
Disability: handicap and pain	Loss of mobility, chronic pain
Dysfunction	Loss of neurovegetative and neuromuscular function
Dysregulation	Hormonal and central nervous disruptions
Disease load	Accompanying symptoms (incontinence etc.)
Drugs	Many secondary effects of drugs on sexual function

includes detailed and proscriptive approaches to the spectrum of sexual problems and includes an array of educational and assessment methods. Core components of the ESSM curriculum are the assessment and management of desire, arousal, and orgasm disorders; assessment methods are summarized in Tables 2.4, 2.5, and 2.6. Objectives for management of each disorder include required knowledge, skills and attitudes.

Conclusion

Generalist physicians should be able to address sexuality in the context of a medical consultation, assess sexual health problems, offer help or refer women to specialized colleagues. Undergraduate training must include general knowledge about the human sexual response as well as the diagnostic categories and classifications, and skills to communicate about sexuality. Postgraduate and specialized training should be competency based and provide:

- a broader understanding of the biological, psychological and social factors contributing to sexual health and sexual dysfunction in general and in clinical conditions;
- the basis for comprehensive diagnosis;
- the capacity to establish a therapeutic plan shared with the patient;
- the guidance to perform interventions according to individual competence or refer to specialists.

Table 2.4 Management of the patient with desire disorder [9, 19, 20].

Objective		Assessment
Knowledge	*Anatomy* Anatomy of the brain, enhancing and inhibiting pathways and networks	Multiple choice questions (MCQ)
	Physiology of sexual desire Endocrine and neurotransmitter pathways and actions involved in the experience of desire	
	Pathology Definitions in ISSWSH nomenclature and ICD-10 Pathophysiological mechanisms of dysfunction (stimulating and inhibiting pathways)	
	Risk and contributing factors Biological, medical • Diseases and drugs • Hormonal changes Psychological • Understanding the sexual biography (negative sexual learning, traumatic life events, vulnerability, sexual temperament) Relational • Partner conflicts about different needs, communication difficulties Sociocultural • Lack of sex education • Rigid sexual norms, role definitions	Single best answer (SBA)
	Therapeutic options Sexual counseling Hormonal treatment Drug treatment (centrally acting) Body centered sex therapy Modified sensate focus	
Clinical skills	Be able to: • Perform a structured diagnostic interview including listening to the woman's story, (narrative), summarizing, and establishing a comprehensive diagnosis with contributing elements and risk factors (nine-field diagram) • Differentiate between primary and secondary dysfunction	Extended matching questions (EMQ) Objective structured clinical examination (OSCE)
	Perform a gynecologic examination with special focus on colposcopy of the vulva, examination of the vagina	
	Develop a treatment plan together with the patient based on shared decision making Assess indication for medication treatment taking into account contraindications etc. Psychotherapy – cognitive behavioral therapy and mindfulness-based therapy Systemic couple therapy	
Attitudes	Empathic listening, encouraging to talk Offer feedback opportunities, encourage questions Schedule follow up Be patient regarding change	Role play

Table 2.5 Management of the patient with arousal disorder [9, 21].

Objective		Assessment
Knowledge	*Anatomy* Anatomy of the vulva, vagina and clitoris Differentiated knowledge about tissues, vascularization, hormonal receptors	MCQ
	Physiology of sexual arousal Central and peripheral mechanisms of arousal including lubrication	
	Pathology of arousal dysfunction Definitions of ISSWSH nomenclature and ICD 10 Pathophysiological mechanisms	
	Risk and contributing factors Biological, medical • Sex hormone deficiency • Diabetes/vascular factors • Smoking • Pelvic floor disorders • Lower urinary tract symptoms (LUTS) • Pelvic surgery • Neurological diseases • Drugs: antihormones, hormonal contraceptives, chemotherapy, antidepressants Psychological • Anxiety, depression • Lack of knowledge and experience (masturbation etc.) • Traumatic sexual biography (separation, violence, abuse) Relational • Conflict about needs and expectations • Lack of communication skills to negotiate about differences Sociocultural • Poverty/low income • Working conditions • Sexual norms	SBA
	Therapeutic options Sexual counseling Local and/or hormonal treatment Drug treatment (PDE-5-inhibitors) Body-centered sex therapy Modified sensate focus	
Clinical skills	Be able to perform a structured diagnostic interview including listening to the woman's story, (narrative), summarizing, establishing a comprehensive diagnosis with contributing and risk factors (nine-field diagram)	EMQ, OSCE
	Perform a gynecologic examination with special focus on colposcopy of the vulva, examination of the vagina Detect (exclude) vulvovaginal disease	
	Develop a treatment plan together with the patient based on shared decision making Assess indication for medication taking into account contraindications Sensate focus, body centered psychotherapy, physiotherapy, masturbation exercises, systemic couple therapy	
Attitudes	Empathic listening, encouraging to talk Offer feedback opportunities, encourage questions Schedule follow-up Be patient regarding change	Role play

Table 2.6 Management of the patient with orgasmic disorder.

Objective		Assessment
Knowledge	*Anatomy* Anatomy of the brain, enhancing and inhibiting pathways and networks; anatomy and physiology of the vagina and the pelvic floor	MCQ
	Physiology of orgasm Vascular and muscular response, woman's experience	
	Pathology Definitions of ISSWSH nomenclature and ICD 10 Pathophysiological mechanisms (excitatory and inhibitory pathways)	
	Risk and contributing factors Biological, Medical • Factors contributing to orgasm disorder • Antidepressant medication Psychological • Lack of education, experience • Partner conflict • Performance anxiety Relational • Inadequate stimulation Sociocultural • Lack of sex education • Rigid sexual norms	SBA
	Therapeutic options Sexual counseling Masturbation exercises Working with fantasies, sex toys Body centered psychotherapy Physiotherapy pelvic floor	
Clinical skills	Be able to: Perform a structured diagnostic interview including listening to the woman's story, (narrative), summarizing, establishing a comprehensive diagnosis with contributing and risk factors (nine-field diagram) Differentiate between primary and secondary	EMQ, OSCE
	Consider a gynecologic examination of the vulva, vagina if inadequate arousal is contributing or orgasmic dysfunction	
	Develop a treatment plan together with the patient based on shared decision making Assess indication for medication treatment taking into account contraindications etc. Sensate focus, body-centered psychotherapy, sex toys, physiotherapy masturbation exercises Systemic couple therapy	
Attitude	Empathic listening, encouraging to talk Offer feedback opportunities, encourage questions Schedule follow up Be patient regarding change	Role play

References

1 Reisman Y, Eardley I, Porst H, the Multidisciplinary Joint Committee on Sexual Medicine (MJCSM). New developments in education and training in sexual medicine. *J Sex Med.* 2013;10:918–923.

2 Eardley I, Reisman Y, Goldstein S, *et al*. Existing and future educational needs in graduate and postgraduate education. *J Sex Med.* 2017;14:475–485.

3 Bitzer J, Platano G, Tschudin S, Alder J. Sexual counseling for women in the context of physical diseases: a teaching model for physicians. *J Sex Med.* 2007;4:29–37.

4 Brandenburg U, Bitzer J. The challenge of talking about sex: the importance of patient-physician interaction. *Maturitas.* 2009;63:124–127.

5 Shindel AW, Parish SJ. Sexuality education in North American medical schools: Current status and future directions. *J Sex Med.* 2013;10:3–18.

6 Shindel AW. Sexuality education: a critical need. *J Sex Med.* 2015;12:1519–1521.

7 Coleman E, Elders J, Satcher D, *et al*. Summit on medical school education in sexual health: report of an expert consultation. *J Sex Med.* 2013;10: 924–938.

8 Obedin-Maliver J, Goldsmith ES, Stewart L, *et al*. Lesbian, gay, bisexual, and transgender-related content in undergraduate medical education. *JAMA*, 2011;306:971–977.

9 Brotto LA, Bitzer J, Laan E, *et al*. Women's sexual desire and arousal disorders. *J Sex Med.* 2010; 7, 586–614.

10 Bitzer J., Giraldi A, Pfaus J. Sexual desire and hypoactive sexual desire disorder in women. Introduction and overview. Standard operating procedure (SOP Part 1). *J Sex Med*. 2013;10:36–49.

11 Parish SJ, Rubio-Aurioles E. Education in sexual medicine: proceedings from the international consultation in sexual medicine, 2009. *J Sex Med.* 2010;7:3305–3314.

12 Bitzer J. Definition and diagnosis of sexual problems. In Wylie KR (ed.) *ABC of Sexual Health*, 3rd edn. Chichester, UK: John Wiley & Sons Ltd; 2015, pp.77–80.

13 Al-Azzawi F, Bitzer J, Brandenburg U, *et al*. Therapeutic options for postmenopausal female sexual dysfunction. *Climacteric.* 2010;13:103–120.

14 Bitzer J, Platano G, Tschudin S, Alder J. Sexual counseling in elderly couples. *J Sex Med.* 2008;5:2027–2043.

15 American Psychological Association. *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition: DSM-5*. Arlington, VA: American Psychological Association; 2013.

16 McCabe MP, Sharlip ID, Atalla E, *et al*. Definitions of sexual dysfunctions in women and men: A Consensus Statement From the Fourth International Consultation on Sexual Medicine 2015. *J Sex Med.* 2016;13:135–143.

17 Parish SJ, Goldstein AT, Goldstein SW, *et al*. Toward a more evidence-based nosology and nomenclature for female sexual dysfunctions – Part II. *J Sex Med.* 2016;13:1888–1906.

18 Bitzer J, Giraldi A, Pfaus J. A standardized diagnostic interview for hypoactive sexual desire disorder in women: standard operating procedure (SOP Part 2). *J Sex Med.* 2013;10:50–57.

19 Parish SJ, Hahn SR. Hypoactive sexual desire disorder: a review of epidemiology, biopsychology, diagnosis, and treatment. *Sex Med Rev.* 2016;4:103–120.

20 Goldstein I, Kim NN, Clayton AH, *et al*. Hypoactive sexual desire disorder: International Society for the Study of Women's Sexual Health (ISSWSH) Expert Consensus Panel Review. *Mayo Clin Proc.* 2017;92:114–128. doi: 10.1016/j.mayocp.2016.09.018.

21 Giraldi A, Rellini AH, Pfaus J, Laan E. Female sexual arousal disorders. *J Sex Med.* 2013;10:58–73.