This is a practical, positive approach to sexual health promotion for clinicians in primary care. It presents sexual concerns across the lifecycle, from childhood to old age, illuminated throughout by scenarios based on real life. It highlights common sexual issues from different age groups. Additionally it has chapters on sexuality and disability, sexual minorities, HIV-positive individuals, and complementary medicine. Each chapter serves as a practical resource to facilitate better care and communication with patients. Common sexual difficulties, approach to evaluation, and interview techniques, as well as management are presented in a practical manner. Numerous illustrations will assist the clinician in advising patients with back pain, who are pregnant, or who have chronic illness on how to make adjustments to their sexual life to maximize their quality of life. It presents an invaluable resource for all health professionals that spans the need of patients from all backgrounds and age groups.

Dr. Margaret Nusbaum D.O., M.P.H., is Associate Professor of Family Medicine at the University of North Carolina, in Chapel Hill, and has more than 10 years of formal teaching in sexual health, including national presentations and publications in the sexual health area. She wrote the monograph on sexual health for the American Academy of Family Physicians home study continuing medical education course. She is currently Chair for the Society of Teachers in Family Medicine Group for sexuality and sexual health. Her Board certification includes American Board of Family Physicians, American College of Osteopathic Physicians, and American Board of Public Health and Preventive Medicine.

Dr. Jo Ann Rosenfeld is Assistant Professor of General Internal Medicine at Johns Hopkins School of Medicine and former Professor of Family Medicine at East State Tennessee University. Her editorial responsibilities include being Associate Editor of the BMJ-USA Associate Editor of the AAFP FP-Comprehensive Monograph Course, and Associate Editor of the Johns Hopkins Advanced Studies in Internal Medicine Journal. She has also written 50 articles on women's health and three other books on women's health.
Sexual Health across the Lifecycle

A Practical Guide for Clinicians

Margaret Nusbaum
and
Jo Ann Rosenfeld
To my lover, my spouse, my best friend,
Mark J. Nusbaum
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About the artist

Beth Bale is a part-time artist and works full time in occupational therapy with psychiatry and burn patients. She studied art and psychiatry at Georgetown College in Kentucky and has also received degrees from Duke Divinity School and Durham Technical Community College. Beth was pleased to combine the self-care component of sexuality with her love of art. She lives in Durham, NC, with her partner, Alli, their two dogs, Summer and Storm, and five cats.
Preface

This book is intended to provide primary care clinicians with a practical approach to incorporating sexual health into clinical practice. The book will cover sexuality from lifecycle approach, including psychosexual development, as well as special circumstances such as chronic illness, pregnancy, and sexual minorities, and specific topics such as difficulties with sexual functioning. Each chapter begins with a common clinical case illustrating the key concepts, and then reviews the epidemiologic data, approaches to management, and resources for clinicians and patients. Because of the lifecycle approach, topics in various chapters will cross-refer to other chapters.
Acknowledgments

I appreciate administrative assistance from Laura Seufert, Linda Allred, Maria Carrasquillo, and LaKeicha Decker; kind words of wisdom and encouragement from my colleagues Adam Goldstein and Lisa Slatt; and the American Academy of Family Practice for giving me the opportunity to write the sexual health monograph for their home study program.

I have enjoyed collaborating with Jo Ann Rosenfeld and Beth Bale. Jo Ann Rosenfeld essentially took the sexual health book that I wrote, edited it down into monograph, and then helped me resurrect the book for this printing. Her encouragement, enthusiasm, and willingness to collaborate with me have been very instrumental in the final product. Beth Bale worked long hours to illustrate the book, often changing my words into illustrations. Of course, I am grateful to Cambridge University Press for giving us both this opportunity. I appreciate the patience of my husband who played second fiddle not only to the army when I was deployed in 2003 but then also to the development of this book.

I am appreciative of the training I have received in sexual health and marriage and family therapy at Ohio University College of Osteopathic Medicine as well as at Pacific Lutheran University. My most important teachers have been the multitude of patients who have shared this very personal aspect of their lives with me and for whom I have had the privilege of caring over many years and in various health care settings.

The illustrations and copyright permissions were supported by an unrestricted educational grant from Pfizer.
CASE STUDY 1.1

Ken, a 44-year-old physician, is evaluating Nina, a 15-year-old, who complains of menstrual cramps relieved with 800 mg of over-the-counter ibuprofen; her mother, Amy, is requesting a prescription for this. Ken has a 16-year-old daughter, Sidney, who has begun steadily dating an 18-year-old boy. Ken and his wife have placed curfews for which nights Sidney can go out on dates and at what time she must return home. Neither Ken nor Amy has raised the topic they fear most, – sexual activity. In fact, they are uncomfortable talking about the topic with each other. Ken asks Amy to leave in order to check in on Nina’s agenda.

Nina had heard from friends that doctors often prescribe birth-control pills to help teens manage painful cycles. She is hoping that Ken will bring this up as an option. Nina and her 17-year-old boyfriend, Eric, have been sexually active (mutual masturbation) for over a year now but have not had any form of intercourse. Both want to have sex but don’t want to risk pregnancy. They are both virgins. They have agreed to use condoms along with pills to be “extra sure.” Both plan to attend college. Nina and Eric feel uncomfortable speaking with their parents about their relationship. The parents are aware of their steady relationship but believe that they are “good kids.”

The importance of sexual health

Definition and why the topic is important

Sexuality is an important part of one’s health, quality of life, and general well-being. Sexuality is an integral part of the total person, affecting the way each individual – from birth to death – relates to him-/herself, to a sexual partner or partners, and to every other person. A healthy sense of sexuality can provide numerous benefits, including: (1) a link with the future through procreation; (2) a means of pleasure and physical release; (3) a sense of connection with others; (4) a form of gentle, subtle, or intense communication; (5) enhanced feelings of self-worth; and (6) a contribution to self-identity. Additionally, a longitudinal study found that frequency of intercourse for men and enjoyment of intercourse for women are significant predictors for longevity. Because this study found almost no relationship between marriage and longevity, in contrast to previous studies, the authors conclude that perhaps it
is sexual activity, not marital satisfaction alone, that contributes to longevity. This most likely could be generalized to sexual activity within any relationship.

Sexuality is an integral part of human life, and sexual health is inextricably bound to both physical and mental health. Just as physical and mental health problems can contribute to sexual dysfunction and diseases, those dysfunctions and diseases can contribute to physical and mental health problems. The World Health Organization defined sexual health as “the integration of the somatic, emotional, intellectual and social aspects of sexual beings in ways that are positively enriching and that enhance personality, communication and love4.” This definition encompasses the following essential elements: (1) the capacity to control and enjoy sexual behavior; (2) freedom from psychological factors that inhibit sexual response and relationships such as fear, shame, guilt, and lack of knowledge; and (3) freedom from physical factors (illnesses and/or their treatment) that interfere with sexual functions4.

Sexual health is not limited to the absence of disease or dysfunction, nor is its importance confined to the reproductive years. It includes the ability to understand and weigh the risks, responsibilities, outcomes, and impacts of sexual actions and to practice abstinence when appropriate. It includes freedom from sexual abuse and discrimination, the ability to integrate sexuality into one’s life and derive pleasure from it, and the ability to procreate if one so chooses. Sexually healthy individuals would then be defined as having accurate knowledge about sexual functions, a healthy, positive body image, self-awareness about their sexual attitudes and appreciation of their sexual feelings4, a well-developed, usable value system that allows them to make rewarding sexual decisions, the ability to develop effective relationships with men and women, and some degree of emotional comfort, interdependence, and stability with respect to the sexual activities in which they choose to participate.

Challenges with sexual communication

Why talking about sex is difficult

Sexuality and sexual behavior also carry risks such as sexually transmitted diseases (STDs), including HIV/AIDS, unintended pregnancy, abortion, sexual dysfunction, and sexual violence. To enjoy the important benefits of sexuality, while avoiding negative consequences, some of which may have long-term or even lifetime implications, individuals should be sexually healthy, behave responsibly, and have a supportive environment to protect their own sexual health and that of others. Sexual health is important throughout the entire lifespan, not just the reproductive years. Individuals of all ages and backgrounds are at risk and should have access to the knowledge and services necessary for optimal sexual health. Given the public health impact that these risks have, clinicians are ideally situated as educators and should
be instrumental in promoting sexual health. For these reasons, quality health care includes access to sexual health care.

A clear rationale exists for why clinicians should screen for sexual concerns, including the following:

1. Sexual activity includes the risk of morbidity and mortality through STDs, including HIV/AIDS, unplanned pregnancy, and sexual abuse or coercion.
2. Sexual functioning problems may signal an undiagnosed illness such as cardiovascular disease, depression, or diabetes.
3. Sexual functioning problems are frequently iatrogenic in nature. They can be caused by surgical and medication treatment side-effects such as prostate surgery and psychotropic agents.
4. Sexual concerns may arise out of significant past or ongoing psychosocial events that are often associated with significant morbidity and occasional mortality, such as sexual abuse and domestic violence.
5. Sexual functioning is potentially lifelong.
6. Sexual difficulties, dysfunctions, and concerns are common in the general population and even more prevalent in clinical populations.
7. Research has found an association between satisfactory sexual functioning with health, happiness, and quality of life.
8. Not screening for sexual concerns could potentially be considered negligent when one considers child abuse, domestic violence, and diagnosis of a sexually transmitted infection in a couple assumed to be monogamous.
9. Given physician inquiry into other intimate aspects of a patient’s life and health, such as social, genitourinary, and gastrointestinal, the question remains: “Why not include sexual health as an integral part of general health assessment?”

Issues around sexuality can be difficult to discuss because they are personal and because there is great diversity in how they are perceived and approached. No other topic has been neglected by the scientific community to the degree that sexuality and sexual health have been. A very sensitive subject, human sexuality was brought into professional and public awareness by Kinsey’s report on sexual behavior in the male (1948) and the female (1953), Masters and Johnson’s work on documenting the human sexual response (1966) and human sexual inadequacy (1970) and Hite’s report on female (1976) and male (1981) sexuality, and in 1992 by the National Health and Social Life Survey (NHSLS) by Laumann et al. Many more studies are needed not only to identify patient needs in sexual health but also to advance our capability to manage sexual health care needs.

Our society’s reluctance to address sexuality and sexual health openly has been acknowledged; the former Surgeon General has made promoting responsible sexual behavior a top 10 leading indicator for Healthy People 2010. In his call to action, he asks that a (US) national dialogue on issues of sexuality, sexual health, and
responsible sexual behavior be initiated\textsuperscript{14}. This is well stated in the Institute of Medicine report, \textit{No Time to Lose}\textsuperscript{15}:

Society’s reluctance to openly confront issues regarding sexuality results in a number of untoward effects. This social inhibition impedes the development and implementation of effective sexual health and HIV/STD education programs, and it stands in the way of communication between parents and children and between sex partners. It perpetuates misperceptions about individual risk and ignorance about the consequences of sexual activities and may encourage high-risk sexual practices. It also impacts the level of counseling training given to health care providers to assess sexual histories, as well as providers’ comfort levels in conducting risk-behavior discussions with clients. In addition, the “code of silence” has resulted in missed opportunities to use the mass media (e.g., television, radio, printed media, and the Internet) to encourage healthy sexual behaviors.

Sexuality is a fundamental part of human life. Sexuality encompasses more than physical sexual behavior – it includes mental and spiritual aspects, and sexuality is a core component of personality. Human sexuality also has significant meaning and value in each individual’s life. Dr. Satcher, charges us (the USA) with understanding the importance of sexual health in our lives, being aware of sexual health care needs for patients, training professionals to manage these needs and, in general, promoting an open and honest national dialogue about sexuality and sexual health\textsuperscript{14}.

\textbf{Using this book for personal and professional self-development}

We need to use sexuality to see ourselves, literally and figuratively\textsuperscript{16}.

As clinicians, we are not immune to difficulties communicating about sexual topics. Understanding our own sexual development is essential to providing high-quality care for our patients. Learning about sexuality is lifelong. It may be useful for you, the clinician, to do some self-exploration about sexuality in your own life. Some useful questions, which you could do with your own sexual partner, are given in Table 1.\textsuperscript{17,18}.

How effective you are at making sexual activity a priority in your busy life? Are you able to take time to enjoy sensuality with or without a partner? How about massage or others ways of heightening eroticism in your sex life? Are you willing to spice up your own sex life? How are you doing at keeping the passion alive if you are in a long-term relationship? How often do you simply touch, hug, or hold hands with your partner without the expectation of sexual activity? This is known as non-demand, affective touch. If you are not monogamous, how easy is it for you to negotiate safe sex? How easy is it for you to give feedback to your partner about your satisfaction with your sex life? Equally important, how easy is it for you to allow your partner to be honest about feedback to you about your relationship,
in general, and about your sexual relationship in particular. How open are you to trying new expressions of sexual activity?

Are you a survivor of abuse or in an abusive relationship now? Are you wrestling with age-related or lifecycle changes yourself? How about self-esteem or body-image concerns? What about issues of orientation or sexual expression?

It may be worthwhile for you to look at the references on sexuality in your local book store. We have provided helpful references throughout this book, some of which you may find both professionally and personally rewarding. Learning more about your own background, and growing more comfortable with the topic of

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<th>Table 1.1</th>
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<td><strong>Sources of sexual information</strong></td>
<td>When you were a child, where did you get most of your information about sexuality? (examples: parents, other family members, school, friends, sexual partners, spouse, reading books, magazines.) How have these sources changed over the years?</td>
</tr>
<tr>
<td><strong>Discussion of sexuality in family of origin</strong></td>
<td>How easy was it to discuss issues around sexuality when you were growing up? How did the topic of menstruation or wet dreams come up? How easy is it now to discuss sexuality with your family or friends?</td>
</tr>
<tr>
<td><strong>Expression of affection in family of origin</strong></td>
<td>How was affection expressed in your family when you were growing up? (hugging, touching, laughing, teasing) How has this changed over the years? How has expression of affection in your family of origin impacted on your sexuality? How often do you touch someone affectionately without it meaning a signal for sexual activity?</td>
</tr>
<tr>
<td><strong>Family of origin Religiosity</strong></td>
<td>Were you raised in a religion? How strong was your religious upbringing? How has this changed over the years? How did religion in your family of origin impact on your discussion of sexuality?</td>
</tr>
<tr>
<td><strong>Purpose for sex</strong></td>
<td>As a child, what messages did you receive about the purpose for sex? (i.e. the purpose of sex is to procreate, for pleasure, to build self-esteem, to express love/caring, to satisfy your partner’s needs, etc.) How has this changed over the years? How do messages about the purpose for sex impact on sexuality?</td>
</tr>
<tr>
<td><strong>Talking about sex</strong></td>
<td>Have you ever wanted to confide in anyone about sexual issues? Have you ever been a patient? Have you ever been asked your sexual history? Would you have liked to discuss sexual issues at your last health visit?</td>
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sexuality, will have added benefit to your sexual health promotion in your clinical practice.

Clinicians sometimes worry that discussions around sexual matters may be misconstrued by patients, creating boundary dilemmas or allegations of sexual harassment. The next section reviews boundary dilemmas. It is important for clinicians to be aware of times when they are most vulnerable and thus at risk for crossing or losing sight of professional boundaries. For example, starting to incorporate sexual history-taking into clinical practice, when this has not been a usual practice, at a time when the clinician is him-/herself undergoing relationship or personal turmoil can blur the boundaries.

### Boundary dilemmas in the doctor–patient relationship

**CASE STUDY 1.2**

Pat, 39 years old, is presenting for an office visit that you scheduled at the end of your day. Pat recently separated from a long-term partner. Today you dressed wearing clothing on which Pat has previously complimented you. You feel thrilled to see that the appointment has been kept. Pat seems thrilled also. The two of you exchange a hello hug. Pat is one of your favorite patients. You have been working to help Pat through the separation and managing feelings. You have been so concerned for Pat that you have given out your private pager number and home phone number – this is not your usual practice. You feel particularly worried for Pat, because you know how hard it is when a significant relationship breaks down: you’ve just experienced this yourself.

Boundary is the invisible line between health care professionals and patients. A distinction is made between boundary crossings and boundary violations\(^{19}\). A “violation” is a “crossing” that is harmful. The American Psychological Association is much clearer in its definition of a patient and health care professional: “once a patient, always a patient.”

Sharing your own experience, or self-disclosure, with the aim of benefiting the patient might be a boundary crossing, whereas ventilating about relationship concerns with a patient for the sake of making you feel better would potentially be a boundary violation. Argument exists that “excessive distance” from a patient is a violation, so ignoring sexual health questions might be viewed as an act of omission that could constitute a boundary violation (Table 1.2)\(^6\).

If taking a sexual history worries you about boundary issues, you could always start with an unloading and permission question: “I consider sexual health to be an important aspect of people’s lives. I include sexual health questions as part of a health inquiry. Would you mind if I ask a few questions concerning your sexual health?” Patients now have permission to declare their boundaries with a simple yes
Table 1.2 Managing sexual feelings in physician–patient relationships

Recognize that it is entirely normal to experience some sexual feelings towards a patient at times during your career
Realize that most sexual relationships with patients begin with relatively minor boundary violations
Be careful to monitor your own thoughts, feelings, and impulses toward patients. If in doubt, get supervision or consultation
Set limits on professional relationships before a crisis develops. This is the best way to avoid the "slippery slope"
Be aware of risk factors, such as: being male and having female patients; using non-sexual touch more with some patients than others; experiencing a life crisis; engaging in substance abuse; paraphiliac sexual interests; previous involvement with other patients
It is not considered ethical to terminate a physician–patient relationship in order to begin a sexual relationship
Remember that the burden of avoiding boundary crossing is always that of the physician – not the patient

or no. If a patient declines to talk about sexual concerns, you can always leave the door open: “When you wish to talk about matters concerning your sexual health, I want you to feel comfortable speaking with me about your concerns.”

Boundaries are a very gray ethical area, argued by differing professional boards, and interpreted differently by state medical boards. It would be worthwhile reviewing your state’s recommendations concerning the doctor–patient relationship. Remember that feelings and fantasies are not the same as acts. It is very common for physicians to have occasional feelings or fantasies about their patients. Acting on these feelings and fantasies is a boundary violation. This becomes much more challenging for the single physician in a rural community where potential sources for partners are limited (Table 1.3).

If you find yourself developing a relationship with a patient, take the following actions: terminate the patient care relationship and refer the patient to another colleague for medical care; seek counsel; and offer the patient the opportunity for counseling.

When and how to refer patients for intensive therapy

Unless you provide counseling in your clinical practice, patients who require intensive therapy would benefit from referral. Intensive therapy is most often needed when intrapersonal, interpersonal, or history of abuse interacts with sexual problems. For instance, your history may reveal that premature ejaculation is acquired as a result of relationship issues. Talk or relationship therapy would augment pharmacological therapy in this situation.
Table 1.3 Red flags for boundary dilemmas\textsuperscript{21}

<table>
<thead>
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<th>Red flags for boundary dilemmas</th>
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<tr>
<td>Thinking about the patient often while not in a treatment setting</td>
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<tr>
<td>Having recurring sexual thoughts or fantasies about the patient in or out of the treatment setting</td>
</tr>
<tr>
<td>Dressing or grooming in an uncustomary conscious fashion on the patient’s appointment day</td>
</tr>
<tr>
<td>Looking forward to the patient’s visits above all others</td>
</tr>
<tr>
<td>Attempting to elicit information from the patient to satisfy personal curiosities, as opposed to eliciting information that is required to achieve therapeutic goals</td>
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<tr>
<td>Daydreaming about seeing the patient socially as a “date”</td>
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<tr>
<td>Becoming mildly flirtatious or eliciting discussions of sexual material during treatment when not therapeutically relevant</td>
</tr>
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<td>Indulging in rescue fantasies or seeing yourself as the only person who can heal this person</td>
</tr>
<tr>
<td>Believing that you could make up for all the past deficits, sadness, or disappointments in the patient’s life</td>
</tr>
<tr>
<td>Becoming sexually aroused in the patient’s presence</td>
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<tr>
<td>Wanting to touch the patient</td>
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Lack of success with interventions you have made is another indication that a patient needs more intensive therapy and would benefit from referral to either a medical subspecialist or psychotherapist. For instance, a man having erectile dysfunction unresponsive to Erectaid and intracavernosal injections might be an ideal candidate for a penile prosthesis. He would benefit from consulting with a urologist who performs the procedure as well as a psychotherapist to help him and his partner decide if this is the best option for them.

The nuances of your practice area and your patient’s insurance or lack of insurance coverage will add to the complexity of referral. The patient’s insurance plan may have limited options for therapists. There may be fewer therapists in rural compared to urban or suburban areas. Patients may be unable to afford medical consultation or surgical procedures that are not covered by health insurance. They might benefit from counseling to help them make the transition to an alternative mode of sexual expression. Some people with significant health problems that limit their own sexual functioning still derive tremendous sexual satisfaction from being able to provide sexual pleasure for their partners. They learn to adopt a different mode of sexual exchange that brings them satisfaction.

It is sometimes challenging to refer patients. They may consider counseling or therapy as only appropriate for people who are “really crazy,” rather than considering psychotherapy a legitimate mental health maintenance. There is an art form to recommending therapy. How you present it to your patient is important. Unloading techniques can be beneficial, such as: “Individuals with issues similar to what you are sharing with me today often benefit from a more intense counseling relationship. I have had many people tell me how satisfied they were with counseling.
Table 1.4 Examples of situations to consider referral

<table>
<thead>
<tr>
<th>Situations to Consider</th>
<th>Situations to Consider</th>
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<tr>
<td>Abuse: history or ongoing</td>
<td>Suicide ideation or attempt</td>
</tr>
<tr>
<td>Depression and anxiety</td>
<td>Lack of response to treatment</td>
</tr>
<tr>
<td>Symptoms worsen with treatment</td>
<td>Your level of comfort or sense of competence is exceeded</td>
</tr>
<tr>
<td>Collaborative care or second opinion purposes</td>
<td>Patient request</td>
</tr>
<tr>
<td>When intensive therapy is needed and this is not part of your practice</td>
<td>Assistance with accepting alternative sexual expression or deciding upon treatment options</td>
</tr>
<tr>
<td>Red flags for boundary dilemmas exist (Table 1.2)</td>
<td>The sexual behavior is dangerous to self or others</td>
</tr>
<tr>
<td>Your personal values conflict with your ability to provide unbiased health care to the patient</td>
<td>Drug or alcohol dependence</td>
</tr>
<tr>
<td>Significant intrapersonal or interpersonal conflict</td>
<td>Sexual health promotion is not part of your practice</td>
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In fact, they have been thankful for the referral. I think you might benefit. What are your thoughts about working with a behavioral therapist on these issues?” (See Table 1.4.)

REFERENCES

The sexual response cycle

CASE STUDY 2.1

Lilly, a 48-year-old diabetic, reports decreased vaginal lubrication and decreased “genital tingling sensation” when she and her partner begin foreplay. She noticed this reduction in sexual arousal shortly after a beta-blocker was added to her antihypertensive regimen.

Phases of sexual response

Desire

Desire is that which causes one to initiate or be receptive to sexual activity. Being cognizant of the importance of desire acknowledges the psychological dimension to sexual response. Desire is influenced by a wide variety of environmental stimuli, including psychosocial and cultural factors plus physiology. The physiological aspects necessary for desire include neurotransmitters, androgens, and an intact sensory system. Androgens include dehydroepiandrosterone (DHEA) and testosterone.

Gender differences appear to exist; in women, desire is most responsive to touch, speech, and relationship quality, while male desire is more aroused by visual stimuli. Desire and arousal phases for women are closely tied, can be easily disrupted by environmental, biological, physiological, and/or psychological processes, and require emotional and physical satisfaction from the relationship\(^1\). In general, the sexual response cycle for women is more complex than that for men. Many factors can disrupt the sexual response cycle for women. Touch, both in the context of sexual activity but also non-demand, affective touch, where sexual activity is not the expected result, appears to be much more important for women. It is sometimes said that men have an erection and become interested in sex, while women may become aroused and lubricate but the woman herself or other factors may consciously or unconsciously shut off the cognitive connection to this arousal. These differences may make women more susceptible to sexual boredom when sex becomes a routine.
The difference between genders may be related to gender variation in response to stress and coping. Women tend to internalize or seek out other women, which does not allow for further experience to solve sexual problems, while men tend to externalize stressors and therefore may seek comfort from sexual experience.

The sexual response cycle is typically demonstrated via Masters and Johnson’s model (Figures 2.1 and 2.2). Basson theorizes an alternative model for women (Figure 2.3). Additionally, Loulan postulates that the initial point in the sexual response cycle for women is willingness. This is a conscious decision whether to have sex or not and can lead to arousal, desire, pleasure, or even shutdown. This could be considered the motivation for sexual encounter. Loulan further postulates that desire, the next phase, for women includes three areas: intellectual, emotional, and physical. These do not need to be connected and can also lead to arousal, desire, pleasure, or even shutdown. The next three phases are arousal, plateau, and orgasm, all of which can revert back to earlier stages. After orgasm the woman can move forward to pleasure or even shutdown. It is possible to feel pleasure at any stage of the sexual response cycle, and this is the ultimate goal for sexual activity. Both Basson’s and Loulan’s model demonstrate the complexity of the female sexual response.

Arousal

Arousal involves the parasympathetic nervous system. Among the neurotransmitters either known or believed to play a role in arousal are vasoactive polypeptide, nitric oxide, prostaglandin E, phosphodiesterase type 5, and oxytocin.
Figure 2.2 Female sexual response cycle. Reproduced from Masters, W. H. and Johnson, V. E. *Human Sexual Response* (Boston: Little, Brown, 1966) with permission.

Figure 2.3 Basson’s alternative sexual response cycle for women. Reproduced from Basson, R. *Human Sex Response Cycles* (New York: Taylor & Francis, 2001) with permission.
During arousal, breathing becomes heavier, heart rate and blood pressure increase, and the skin flushes (“sex flush”). Both men and women experience reflexive genital vasocongestion. This manifests in women as vaginal lubrication and in men as penile erection. Vascular engorgement of the tissues deep in the vagina causes a transudate to form within 10–30 seconds of initiation of sexual stimulation. Additionally, during arousal, the vaginal walls and labia minora thicken and the labia majora flatten. There is expansion of the inner two-thirds of the vagina, elevation of the cervix and corpus, and enlargement of the clitoris. Additionally, the breasts begin to swell and the nipples become erect. For men, the scrotum thickens and the testes begin to elevate due to shortening of the spermatic cords. Arousal will wax and wane for both sexes during sexual activity based on the presence or absence of continued stimulation. Continued stimulation will lead to the next phase – plateau.

Plateau

Plateau, the vasocongestive phase at its peak, involves the parasympathetic nervous system. Plateau consists of an increase and leveling-off of sexual tension immediately before orgasm. Some individuals experience a mottling of the skin (“sex flush”). Plateau often includes carpopedal spasm, generalized skeletal muscular tension, hyperventilation, tachycardia, and increased blood pressure (20–30 mmHg systolic, 10–20 mmHg diastolic).

With plateau, women develop an orgasmic platform (a thickened plate of congested tissue) in the outer third of the vagina. There is full expansion of the vagina and elevation of the uterus and cervix. The labia minora become bright red to burgundy in color, and mucoid secretion is present (perhaps from Bartholin’s glands). The clitoris withdraws and becomes difficult to identify because it retracts against the symphysis pubis and the surrounding labia become engorged (Figure 2.4).
clitoris remains highly sensitive to stimulation. Breasts increase in size and the areola engorge. Because the outer third of the vagina swells to grip the penis and this area has many sensory nerves, penile size is not critical to vaginal stimulation. The ballooning of the inner two-thirds of the vagina further supports the fact that penile size is not essential to vaginal stimulation.

With plateau, the penis distends to its capacity. The testicles, engorged with blood, are now 50% larger than basal size. There is reflex contraction of the cremasteric muscles and the spermatic cords have elevated the testicles into close apposition against the perineum (Figure 2.5). A few drops of clear mucoid fluid appear at the urethra, perhaps from Cowper’s glands. With continued stimulation orgasm will occur.

For both sexes, identifying the signs of plateau for one’s partner can be very helpful in managing sexual difficulties of either prolonged or shortened plateau. In particular, although the clitoris becomes harder to identify as it retracts, it remains highly sensitive to continued stimulation, and understanding this can help an individual stimulate the female partner to orgasm. Additionally, when a male partner notes that his scrotum and testicles are in close approximation to the perineum, stopping stimulation at this point can avoid premature orgasm.

Orgasm

Orgasm involves the sympathetic nervous system. Orgasm is a dual phase for both sexes. It consists of heightened excitement, a peaking of subjective pleasure, and
subsequent release of sexual tension. Awareness of other sensual experiences is diminished during orgasm, and individuals become very self-focused.

The pelvic response consists of involuntary rhythmic contractions of the pubococcygeal muscle, rectal sphincter contractions, and external urethral sphincter contractions. Generalized myotonia is present and manifested as tension felt and seen in the mouth, neck, facial grimaces, buttocks, thighs and toes, carpopedal spasms and contraction of arms and limbs. Hyperventilation (up to 40 breaths/min), tachycardia (up to 180 beats/min), and an increase in blood pressure (30–80 mmHg systolic, 20–40 mmHg diastolic) occur.

Orgasm may last longer for women than it does for men. Additionally, women can experience multiple orgasms and orgasmic experiences may be quite varied. Women may need to reach a disassociation state in order to have an orgasm and may be more susceptible to environmental disruptions of their sexual response cycle. However, unlike men, women experience no refractory period. With orgasm, there is contraction of the uterus from the fundus toward the lower uterine segment, minimal relaxation of the external cervical os, and contractions of orgasmic platform (0.8-second interval for 5–12 contractions) in close succession.

For men, emission consists of semen spurting out of the erect penis in 3–7 ejaculatory spurts at 0.8-second intervals. The contractions of the internal organs and signal of ejaculatory inevitability (roughly 1–3 seconds before the start of ejaculation) are followed by rhythmic contractions of the penile urethra and perineal muscles. The latter is experienced as orgasm proper. After orgasm, a man is refractory to sexual stimulation for a certain period of time; this period must elapse before he can be stimulated to orgasm again.

Resolution
Resolution also involves the sympathetic nervous system. During plateau the body returns to its pre-excitement phase. As vasocongestion is relieved (hyperventilation) tachycardia decreases. For 30–40% of individuals a sweating reaction occurs. For both men and women a pelvic or genital discomfort may result when there is a sexual experience without orgasm and vasocongestion is not relieved.

For women, a ready return to orgasm is possible along with a slowed loss of pelvic vasocongestion. Otherwise, there is a rapid loss of flush in the labia minora and rapid resolution of the orgasmic platform. The uterus descends back into the pelvis in its usual position. The vagina decreases in width and length. The remainder of pelvic vasocongestion is slow, with gradual loss of clitoral tumescence. The cervical os continues to gape for 20–30 minutes after orgasm.

For men, the testicles rapidly detumesce, descending back to their usual cool position. Very young men may ejaculate a second time without loss of erection and the penis detumesces in two stages. First, it is reduced to about half of its erect
Changes in the sexual response cycle with aging

Table 2.1 Sexual response cycle

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desire</td>
<td>Neurotransmitters, androgens, sensory system, relationship, gender differences</td>
</tr>
<tr>
<td>Arousal</td>
<td>For men, penile erection; for women, vaginal lubrication. “Tingling” sensation in genitals</td>
</tr>
<tr>
<td>Plateau</td>
<td>Highest level of arousal</td>
</tr>
<tr>
<td>Orgasm</td>
<td>Sympathetic phase; dual sensation of maximal pleasure and generalized myotonia followed by orgasmic release</td>
</tr>
<tr>
<td>Resolution</td>
<td>Vasocongestion resolves; women can be rapidly stimulated to arousal and orgasm; men have a refractory period which tends to increase with age</td>
</tr>
</tbody>
</table>

size soon after orgasm, probably because the corpora cavernosa empty of blood. And within half an hour, after the more slowly responding corpus spongiosum and glans are emptied, the increase in size has entirely diminished. For older men, the postcoital involution of the penis occurs more rapidly, often within minutes (Table 2.1).

Changes in the sexual response cycle with aging

CASE STUDY 2.2

Upon sexual health inquiry, Gloria, a 58-year-old, reveals that her partner, Gary, has had decreased erections. Gary has asked Gloria for increased manual stimulation during their sexual encounters. Gloria feels very offended by this. She enjoys sexual activity, but has not previously had to “touch him so much down there.”

Both men and women are capable of a lifetime of sexual functioning. Changes that occur with age are associated either with the aging process itself or related to an increase in chronic health problems and/or the medical and surgical treatment of these health issues. Additionally, agism in our society projects aging individuals as sexless, attributing sexuality to superficial aspects of being young and beautiful.

As we know from Masters and Johnson’s work, age-related changes affect arousal, orgasm, and resolution phases of the sexual response. Desire may be indirectly affected by decreased senses – such as a decreased sense of smell or taste – or from negative body image from normal age-related changes of the body. With increasing age, the skin becomes less elastic; wrinkles appear; and there is graying and/or thinning of hair.

Decreasing androgen levels (DHEA, testosterone) for both sexes can reduce sexual interest and arousal. Androgen levels decrease with increasing age. For example, DHEA levels peak between the ages of 25 and 30, start declining thereafter, and are quite low by age 60. Androgen deficiency is associated with decreased sexual interest and decreased genital and breast sensitivity.
The sexual response cycle

Table 2.2 Causes of altered sexual response cycle

<table>
<thead>
<tr>
<th>Psychosocial</th>
<th>Injury</th>
<th>Illnesses</th>
<th>Medications</th>
<th>Alcohol, tobacco, drugs</th>
</tr>
</thead>
</table>

Table 2.3 Examples of illnesses that can negatively affect the sexual response cycle

<table>
<thead>
<tr>
<th>Hypertension</th>
<th>Parkinson’s</th>
<th>Atherosclerosis</th>
<th>Hypothyroidism</th>
<th>Arthritis</th>
<th>Cancer</th>
<th>Multiple sclerosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>Depression</td>
<td>Central nervous</td>
<td>Arthritis</td>
<td>Multiple</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>system trauma</td>
<td>system trauma</td>
<td>sclerosis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Aging brings a decreased level of arousal and decreased firmness of erections and lubrication; more direct genital stimulation is required for both arousal and orgasm. During plateau and orgasm, there is a decreased intensity of myotonia, decreased intensity of orgasm, and a more rapid resolution. Thinning of the external genitalia and vaginal mucosa can lead to painful intercourse as vaginal lubrication decreases.

Interruptions of the sexual response cycle

Psychosocial issues such as life stressors, relationship issues, and abuse of any form can disrupt the sexual response cycle (Table 2.2). Life stressors include issues such as bills, financial responsibilities, children, and jobs; ultimately the lack of time devoted to the relationship, including its sexual aspects, can negatively affect the sexual response cycle. Relationship issues can include lack of attraction to one’s partner or boredom in the relationship. History of abuse and/or ongoing domestic violence or abuse can negatively affect the sexual response cycle.

Physical damage to any of the various aspects of the sexual response cycle can occur, including trauma to the vascular, central nervous, nervous, and sensory systems. Additionally, both acute and chronic illnesses can disrupt various phases of the sexual response cycle. Any illness or medication that disrupts the balance of neurotransmitters and hormones in the vascular nervous system, including the sensory, parasympathetic, and sympathetic nervous systems, can negatively affect the sexual response cycle. Examples are presented in Table 2.3.

Medications

Many medications can potentially adversely affect the sexual response cycle. Androgens, neurotransmitters, and (Table 2.4.) medications that negatively affect
the sexual response cycle have an impact on the vascular, sympathetic, and parasympathetic nervous systems. Some medications can be potentially beneficial, such as androgens, dopaminergic antidepressants (buproprion), alpha-blockers, trazodone, and serotonin-selective reuptake inhibitors (SSRIs) (for men).

Although alcohol and drugs can potentially lower inhibition towards sexual activity, they also have untoward affects on the sexual response cycle. For example, alcohol lowers testicular testosterone production in men and contributes to orgasmic difficulty for both genders. Because the physiology of the sexual response cycle and sexual side-effects of medications are poorly researched, the clinician must accept a patient’s history of a medication causing a change in sexual functioning, even if it has not previously been described.

REFERENCES

5. Loulan, J. Part II: You don’t have to know Latin to know your body: physiology: Lesbian Sex (San Francisco: Spinsters Book Company, 1984), pp. 29–46.
CASE STUDY 3.1

Brian, 59 years old, is in for follow-up on his recent hospitalization for cerebrovascular accident. He has diabetes, hypertension, hyperlipidemia, medically managed coronary artery disease, and gastroesophageal reflux disease. His rehabilitation is going well. He is thinking about quitting smoking with this recent “scare.” His medications include Plavix, aspirin, beta-blocker, angiotensin-converting enzyme inhibitor, H₂-blocker, and lipid-lowering agent. He has not had chest pain, shortness of breath, or edema. Six months ago his wife, Irene, had successful surgery for a brain tumor. Brian says, “Irene wants me to ask you about Viagra.”

Public health problems demand the need for improved sexual health care. AIDS continues to be one of the five leading causes of death in individuals younger than 45; it is the third most common cause of death in women aged 25–45¹, and has become an increasing risk for men and women over 50². Almost half of pregnancies are still unintended³. The desire for improved sexual health becomes most obvious when one considers that tens of millions of Viagra prescriptions have been filled in the USA and Europe. Both Lavitra and Cialis are now available. The foundation for excellent sexual health care is a complete and honest sexual health history; this will have an impact on morbidity, mortality, and wellness⁴.

Sexual health: an underserved need

Sexual health includes the absence of sexually transmitted infections (STIs) and reproductive disorders, control of fertility and avoidance of unwanted pregnancies, and “sexual expression without exploitation, oppression, or abuse⁵.” Thus, sexual health is integral to overall health and well-being and should be fully integrated into primary care medicine. The fact that it is not, that sexual health needs continue to be overlooked and underserved, is evidenced by the pervasive morbidity and mortality and psychosocial problems associated with sexual behavior.

The most crucial deficit in sexual health care is a proactive and preventive approach in the primary care setting; while STIs are generally managed