CHAPTER 9

Patients, Providers, and Treatments

Rhoda Bear/National Cancer Institute (NCI)

CHAPTER OUTLINE

Health Care Services
- *Patient Consumerism*
- *Structure of the Health Care Delivery System*
- *Patient Experiences with Managed Care*

The Nature of Patient-Provider Communication
- *Setting*
- *Provider Behaviors That Contribute to Faulty Communication*
- *Patients' Contributions to Faulty Communication*
- *Interactive Aspects of the Communication Problem*

Results of Poor Patient-Provider Communication
- *Nonadherence to Treatment Regimens*
- *Good Communication*

Improving Patient-Provider Communication and Increasing Adherence to Treatment
- *Teaching Providers How to Communicate*

The Patient in the Hospital Setting
- *Structure of the Hospital*
- *The Impact of Hospitalization on the Patient*

Interventions to Increase Information in Hospital Settings

The Hospitalized Child
- *Preparing Children for Medical Interventions*

Complementary and Alternative Medicine
- *Philosophical Origins of CAM*

CAM Treatments
- *Dietary Supplements and Diets*
- *Prayer*
- *Acupuncture*
- *Yoga*
- *Hypnosis*
- *Meditation*
- *Guided Imagery*
- *Chiropractic Medicine*
- *Osteopathy*
- *Massage*
- *Who Uses CAM?*
- *Complementary and Alternative Medicine: An Overall Evaluation*

The Placebo Effect
- *History of the Placebo*
- *What Is a Placebo?*
- *Provider Behavior and Placebo Effects*
- *Patient Characteristics and Placebo Effects*
- *Patient-Provider Communication and Placebo Effects*
- *Situational Determinants of Placebo Effects*
- *Social Norms and Placebo Effects*
- *The Placebo as a Methodological Tool*

HEALTH CARE SERVICES

"I've had this cold for 2 weeks, so finally I went to the Student Health Services to get something for it. I waited more than an hour! And when I finally saw a doctor, he spent a whole 5 minutes with me, told me what I had was viral, not bacterial, and that he couldn't do anything for it. He sent me home and told me to get a lot of rest, drink fluids, and take over-the-counter medications for the stuffiness and the pain. Why did I even bother?!" (Student account of a trip to the health services)

Much of the communication between patients and providers goes very well. Information is exchanged, treatment recommendations are made, and both patient and providers are satisfied. Sometimes, however, things do not go well. Nearly everyone has a horror story about a visit to a physician. Long waits, insensitivity, apparently faulty diagnoses, and treatments that have no effect are the themes of these stories. But in the same breath, the storyteller may expound on the virtues of his or her latest physician with an enthusiasm bordering on worship. To what do we attribute this seemingly contradictory attitude toward health care practitioners?

Health ranks among the values we hold dearest. Good health is a prerequisite to nearly every other activity, and poor health can interfere with nearly all aspects of life. Moreover, illness is usually uncomfortable, so people want to be treated quickly and successfully. Perhaps, then, it is no wonder that physicians and other health care professionals are alternately praised and vilified: Their craft is fundamental to the enjoyment of life. Some of the health care practitioners increasingly involved in patient care are described in Table 9.1.

Patient Consumerism

At one time the physician's authority was accepted without question or complaint. Increasingly, though, patients have adopted consumerist attitudes toward their health care. This change is due to several factors.

First, patients are often presented with choices, and to make choices, one must be informed. The mere act of choice is empowering. Second, many illnesses, especially chronic ones, require a patient to be actively engaged in the treatment regimen. Consequently, the patient's full cooperation and participation in the development and enactment of the treatment plan is essential. Patients often have expertise about their illness, especially if it is a recurring or chronic problem. A patient will do better if this expertise is tapped and integrated into the treatment program. All of these factors contribute to patients regarding themselves as consumers of health care rather than passive recipients.

Structure of the Health Care Delivery System

Until a few decades ago, the majority of Americans received their health care from private physicians, whom they paid directly on a visit-by-visit basis, in what was termed **private, fee-for-service care.**

That picture has changed. More than 85 million Americans now receive their health care through a prepaid financing and delivery system, termed a **health maintenance organization (HMO)** (Kaiser Family Foundation, January 2015, see Box 9.1). In this arrangement, an employer or employee pays an agreed-on monthly rate, and the employee can then use

TABLE 9.1 | Types of Health Care Providers

Nearly half of all office space physicians are in practices that employ nurse practitioners, advanced practice nurses, or physician's assistants (Park, Cherry, & Decker, 2011).

	Description	Responsibilities
Nurse practitioners	Affiliated with physicians in private practice; see their own patients	Provide routine medical care; prescribe treatment; monitor progress of chronically ill patients; explain disorders and their origins, diagnoses, prognoses, and treatments
Advanced-practice nurses	Include certified nurse midwives, clinical nurse specialists, and certified nurse anesthetists	Some obstetrical care and births; cardiac or cancer care; administering anesthesia
Physician's assistants	Educated in 2-year programs in medical schools and teaching hospitals	Perform many routine health care tasks, such as taking down medical information or explaining treatment regimens to patients

Source: Hing & Uddin, 2011.

When physicians treat patients in a warm, friendly, confident manner, they are judged to be competent as well as nice.
© Digital Vision/SuperStock RF

services at no additional (or a greatly reduced) cost. This arrangement is called **managed care.** In some cases, HMOs have their own staff, from which enrollees must seek treatment.

In **preferred-provider organizations (PPOs),** a network of affiliated practitioners have agreed to charge preestablished rates for services, and enrollees in the PPO must choose from these practitioners when seeking treatment. Table 9.2 describes the differences among types of health care plans.

Patient Experiences with Managed Care

Although much patient contact with the health care system is positive, there are predictable ways in which communication goes awry, and we focus on those ways here. The changing structure of the health care delivery system can undermine patient-provider communication. Prepaid plans operate on a referral basis, so that the provider who first sees the patient determines what is wrong and then recommends specialists to follow up with treatment. Because providers are often paid according to the number of cases they see, referrals are desirable. Therefore, a **colleague orientation,** rather than a client or patient orientation, can develop (Mechanic, 1975). Because the patient no longer pays directly for service, and because the provider's income is not directly affected by whether the patient is pleased with the service, the provider may not be overly concerned with patient satisfaction. The provider is, however, concerned with what his or her colleagues think, because it is on their recommendations that he or she receives additional cases. In theory, such a system can produce high technical quality of care because providers who make errors receive fewer referrals; however, there is less incentive to offer emotionally satisfying care.

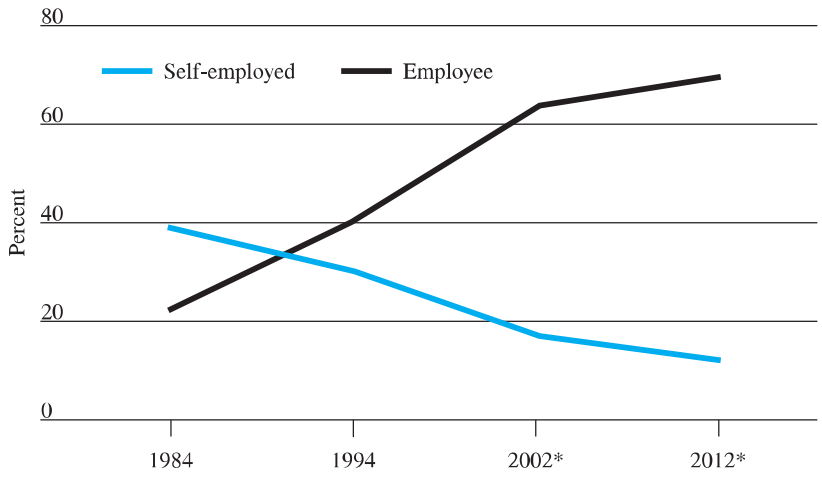
HMOs and other prepaid plans may undermine care in other ways. When providers are pressured to see as many patients as possible, the consequences can be long waits and short visits. These problems are compounded if a patient is referred to several specialists.

TABLE 9.2 | Types of Health Care Plans

Name	How It Works
Health maintenance organization (HMO)	Members select a primary-care physician from the HMO's pool of doctors and pay a small fixed amount for each visit. Typically, any trips to specialists and nonemergency visits to HMO network hospitals must be preapproved.
Preferred-provider organization (PPO)	A network of doctors offers plan members a discounted rate. They usually don't need prior authorization to visit an in-network specialist.
Point-of-service plan (POS)	These are plans, administered by insurance companies or HMOs, that let members go to doctors and hospitals out of the network—for a price. Members usually need a referral to see a network specialist.
Traditional indemnity plan	Patients select their own doctors and hospitals and pay on a fee-for-service basis. They don't need a referral to see a specialist.

Sources: American Association of Health Plans, 2001; National Committee for Quality Assurance, 2001.

FIGURE 9.1 | Percentage of Physicians in Various Forms of Practice (*Sources:* Bianco & Schine, 1997, March 24; Bureau of Labor Statistics, 2004)



*Physicians & surgeons projected

Patients may feel that they are being shunted from provider to provider with no continuity in their care and no opportunity to build up a personal relationship with any one individual.

Precisely because of some patient dissatisfaction, some HMOs have taken steps to reduce long waits, to allow for personal choice, and to make sure a patient sees the same provider at each visit. Changes such as these have resulted in **patient-centered care,** which involves providing patients with information, involving them in decisions regarding care, and consideration of psychosocial issues such as social support needs (Bergeson & Dean, 2006).

THE NATURE OF PATIENT-PROVIDER COMMUNICATION

As noted, patient-practitioner communication does not always go smoothly. Criticisms of providers usually center on jargon, lack of feedback, and depersonalized care. The quality of communication with a provider is important to patients, but it also affects care. Poor patient-provider communication has been tied to nonadherence to treatment recommendations and the initiation of malpractice litigation, for example.

Most of us are insufficiently knowledgeable about medicine and standards of practice to know whether we have been treated well medically. Consequently, we often judge technical quality on how care is delivered. A warm, confident, friendly provider is judged to be both nice and competent, whereas a cool, aloof provider may be judged as both unfriendly and incompetent (Bogart, 2001). In reality, the technical quality of care and the manner in which care is delivered are unrelated. What factors affect quality of communication?

Setting

In many ways, the medical office is an unlikely setting for effective communication. The average visit lasts only 12–15 minutes, and when you are trying to explain your symptoms, the physician will, on average, interrupt you before you get 23 seconds into your comments (Simon, 2003). Moreover, it is difficult to present your complaints effectively when you are in pain or have a fever, or if you are anxious or embarrassed about your condition.

The provider's role is a difficult one as well. He or she must extract significant information as quickly as possible from the patient. The provider is often on a tight schedule, with other patients backing up in the waiting room. The disorder may have been made more complicated by the patient's self-treatment, which can mask and distort the symptoms. Further, the patient's ideas of which symptoms are important may not correspond to the provider's knowledge, and so important signs may be overlooked. With the patient seeking solace and the provider trying to maximize the efficient use of time, there are clearly potential sources of strain.

Provider Behaviors That Contribute to Faulty Communication

Inattentiveness Communication between patient and physician can be eroded by certain provider behaviors. One problematic provider behavior is inattentiveness—that is, not listening. Typically, patients do not have the opportunity to finish their explanation of concerns before the provider begins the process of diagnosis.

Use of Jargon Patients understand relatively few of the complex terms that providers often use. Providers learn a complex vocabulary for understanding illnesses and communicating about them to other professionals; they often find it hard to remember that patients do not share this expertise. In some cases, jargon-filled explanations may be used to keep the patient from asking too many questions or from discovering that the provider actually is not certain what the patient's problem is. The use of jargon may also stem from an inability to gauge what the patient will understand.

Baby Talk Because practitioners may underestimate what their patients will understand about an illness and its treatment, they may resort to baby talk and simplistic explanations. One woman, who is both a cancer researcher and a cancer patient, reports that when she goes to see her cancer specialist, he talks to her in a very complex, technical manner until the examination starts. Once she is on the examining table, he shifts to very simple sentences and explanations. She is now a patient and no longer a colleague. The truth about what most patients can understand lies somewhere between the extremes of technical jargon and baby talk.

Nonperson Treatment Depersonalization of the patient is another problem that impairs the quality of the patient-provider relationship (Kaufman, 1970). One patient—a psychologist—reports:

> When I was being given emergency treatment for an eye laceration, the resident surgeon abruptly terminated his conversation with me as soon as I lay down on the operating table. Although I had had no sedative, or anesthesia, he acted as if I were no longer conscious, directing all his questions to a friend of mine—questions such as, "What's his name? What occupation is he in? Is he a real doctor?" etc. As I lay there, these two men were speaking about me as if I were not there at all. The moment I got off the table and was no longer a cut to be stitched, the surgeon resumed his conversation with me, and existence was conferred upon me again. (Zimbardo, 1969, p. 298)

Nonperson treatment may be employed at particularly stressful moments to keep the patient quiet and to enable the practitioner to concentrate. In that way, it may serve a valuable medical function. But patient depersonalization can also have adverse medical effects. For example, medical staff making hospital rounds often use either highly technical or euphemistic terms when discussing cases with their colleagues; these terms may confuse or alarm the nonparticipating but physically present patient, an effect to which the provider may be oblivious.

Patient depersonalization also provides emotional protection for the provider. It is difficult for a provider to work in a continual state of awareness that his or her every action influences someone's state of health and happiness (L. Cohen et al., 2003). Moreover, every provider has tragedies—as when a patient dies or is left incapacitated by a treatment—but the provider must find a way to continue to practice. Depersonalization helps provide such a way.

Stereotypes of Patients Negative stereotypes of patients may contribute to poor communication and subsequent treatment. Physicians give less information, are less supportive, and demonstrate less proficient clinical performance with black and Hispanic patients and patients of lower socioeconomic class than is true for more advantaged patients, even in the same health care settings (van Ryn & Fu, 2003) (see Box 9.1) often without realizing it (Schaa, Roter, Biesecker, Cooper, & Erby, 2015). When a person is seen by a physician of the same race or ethnicity, satisfaction with treatment tends to be higher (Laveist & Nuru-Jeter, 2002).

Many physicians have negative perceptions of the elderly (Haug & Ory, 1987), and these beliefs can compromise care. Older patients are less likely than younger patients to be resuscitated in emergency rooms or given active treatment protocols for life-threatening diseases (Haug & Ory, 1987; Morgan, 1985). The negative attitudes of physicians seem to be reciprocated in the elderly, in that among people age 65 and over, only 54 percent express high confidence in physicians.

Sexism is a problem in medical practice as well. For example, in experimental studies that attributed reported chest pain and stress to either a male or a female patient, medical intervention was perceived to be less important for the female patient (Martin & Lemos, 2002).

What Did You Say?: Language Barriers to Effective Communication

BOX 9.1

More than 25.2 million people in the United States have limited English proficiency (Pandya, McHugh, & Batalova, 2011). Consequently, language barriers are a formidable problem in patient-provider communication. Increasingly, language barriers contribute to communication problems (Halim, Yoshikawa, & Amodio, 2013). Consider the experiences of a 12-year-old Latino boy and his mother attempting to communicate what was wrong:

> *"La semana pasada a él le dio mucho mareo y no tenía fiebre ni nada, y la familia por parte de papá todos padecen de diabetes."* (Last week, he had a lot of dizziness, and he didn't have fever or anything, and his dad's family all suffer from diabetes.) "Uh hum," replied the physician. The mother went on. *"A mí me da miedo porque él lo que estaba mareado, mareado, mareado y no tenía fiebre ni nada."* (I'm scared because he's dizzy, dizzy, dizzy, and he didn't have fever or anything.) Turning to Raul, the physician asked, "OK, so she's saying you look kind of yellow, is that what she's saying?" Raul interpreted for his mother: *"Es que se me vi amarillo?"* (Is it that I looked yellow?) *"Estaba como mareado, como pálido"* (You were dizzy, like pale), his mother replied. Raul turned back to the doctor. "Like I was like paralyzed, something like that," he said (Flores, 2006, p. 229).

In comparison with male physicians, female physicians generally conduct longer visits, ask more questions, make more positive comments, and show more nonverbal support, such as smiling and nodding (Hall, Irish, Roter, Ehrlich, & Miller, 1994). The matching of gender between patient and practitioner fosters rapport and disclosure (Levinson, McCollum, & Kutner, 1984; Weisman & Teitelbaum, 1985). However, physicians of both genders prefer male patients (Hall, Epstein, DeCiantis, & McNeil, 1993).

Patients who are regarded as seeking treatment largely for depression, anxiety, or other forms of psychological disorder also evoke negative reactions from physicians. With these patients, physician attention may be cursory (Epstein et al., 2006). Physicians prefer healthier patients to sicker ones (Hall et al., 1993), and they prefer acutely ill to chronically ill patients; chronic illness poses uncertainties and raises questions about prognosis, which acute diseases do not. Chronic illness can also increase a physician's distress over having to give bad news (L. Cohen et al., 2003). Patients who are the objects of stereotypes are more likely to become distrustful and dissatisfied with their care.

Patients' Contributions to Faulty Communication

Within a few minutes of having discussed their illness with a provider, as many as one-third of patients cannot repeat their diagnosis, and up to one-half do not understand important details about the illness or treatment (Golden & Johnston, 1970). Whereas dissatisfied patients complain about the incomplete or overly technical explanations they receive from providers, dissatisfied providers complain that even when they give clear, careful explanations to patients, the explanation goes in one ear and out the other.

With patients assuming more responsibility for their own care, the issue of health illiteracy has come to the fore. Although millions of young people graduate from high school each year, many of them lack the basic literacy skills needed to adhere to medical prescriptions, comprehend the meaning of their risk factors, or interpret the results of tests from physicians. Poorly educated

Patients are often most comfortable interacting with a physician who is similar to themselves.

© Henk Badenhorst/Getty Images RF

people, the elderly, and non-English speakers have particular problems adopting the consumer role toward their care (Center for the Advancement of Health, May 2004). As people age, their number of medical problems usually increases, but their abilities to present their complaints effectively and follow treatment guidelines declines. About 40 percent of patients over age 50 have difficulty understanding their prescription instructions. Extra time and care may be needed to communicate this vital information to older patients.

How Patients Compromise Communication

Several patient characteristics contribute to poor communication with providers. Neurotic patients often present an exaggerated picture of their symptoms (Ellington & Wiebe, 1999), compromising a physician's ability to gauge the seriousness of a patient's condition. When patients are anxious, their learning can be impaired (Graugaard & Finset, 2000). Anxiety makes it difficult to focus attention and process incoming information and retain it (Graugaard & Finset, 2000). Negative affectivity more generally compromises adherence (Molloy et al., 2012). To the extent that a practitioner can reduce anxiety, anger, and other negative emotions, communication may improve (Gerhart, Sanchez Varela, Burns, Hobfoll, Fung, 2015; van Osch, Sep, van Vliet, van Dulmen, & Bensing, 2014).

Some patients are unable to understand even simple information about their case (Galesic, Garcia-Retamero, & Gigerenzer, 2009; Link, Phelan, Miech, & Westin, 2008). Lack of intelligence or poor cognitive functioning impedes the ability to play a consumer role (Stilley, Bender, Dunbar-Jacob, Sereika, & Ryan, 2010). Patients for whom the illness is new and who have little prior information about the disorder also have difficulty comprehending their disorders and treatments (DiMatteo & DiNicola, 1982).

Patient Attitudes Toward Symptoms Patients respond to different symptoms of their illness than do practitioners (Greer & Halgin, 2006), especially ones that interfere with their activities. But providers are more concerned with the underlying illness, its severity, and treatment. Patients may consequently misunderstand the provider's emphasis on factors that they consider to be incidental, they may pay little attention, or they may believe that the provider has made an incorrect diagnosis. Patients typically want to be treated (Bar-Tal, Stasiuk, & Maksymiuk, 2012). If the physician prescribes bed rest and over-the-counter medications, patients may feel that their concerns have been ignored.

Patients sometimes give providers misleading information about their medical history or their current concerns. Patients may be embarrassed about their health history (such as having had an abortion) or their health practices (such as being a smoker), and so may not report this important information.

Interactive Aspects of the Communication Problem

Qualities of the interaction between practitioner and patient can perpetuate faulty communication. A major problem is that the patient-provider interaction does not provide the opportunity for feedback to the provider. The provider sees the patient, the patient is diagnosed, treatment is recommended, and the patient leaves. When the patient does not return, any number of things may have happened: The treatment may have cured the disorder; the patient may have gotten worse and decided to seek treatment elsewhere; the treatment may have failed, but the disorder may have cleared up anyway; or the patient may have died. Not knowing which of these alternatives has actually occurred, the provider does not know the impact and success rate of the advice given. Obviously, it is to the provider's psychological advantage to believe that the diagnosis was correct, that the patient followed the advice, and that the patient's disorder was cured by the recommended treatment. However, the provider may never find out for certain.

The provider may also find it hard to know when a satisfactory personal relationship has been established with a patient. Many patients are relatively cautious with providers. If they are dissatisfied, rather than complain about it directly, they may simply change providers. If a patient has stopped coming, the practitioner does not know if the patient has moved out of the area or switched to another practice. When providers do get feedback, it is more likely to be negative than positive: Patients whose treatments have failed are more likely to return than are patients whose treatments are successful (Rachman & Phillips, 1978).

Two points are important here. First, learning is fostered more by positive than by negative feedback; positive feedback tells one what one is doing right, whereas negative feedback may tell one what to stop doing but not necessarily what to do instead. Because providers get little feedback and more negative than positive feedback, this situation is not conducive to learning.

RESULTS OF POOR PATIENT-PROVIDER COMMUNICATION

The patient-provider communication problems would be little more than an unfortunate casualty of medical treatment were it not for the toll they take on health. Dissatisfied patients are less likely to comply with treatment recommendations or to use medical services in the future; they are more likely to turn to alternative services that satisfy emotional rather than medical needs; they are less likely to obtain medical checkups; and they are more likely to change doctors and to file formal complaints (Hayes-Bautista, 1976; Ware, Davies-Avery, & Stewart, 1978).

Nonadherence to Treatment Regimens

Chapters 3, 4, and 5 examined **adherence** to treatment regimens in the context of health behaviors and noted how difficult it can be to modify or eliminate poor health habits, such as smoking, or to achieve a healthy lifestyle. In this section, we examine adherence to treatment, the role of health institutions, and particularly the role of the provider, in promoting adherence.

Rates of Nonadherence When patients do not adopt the behaviors and treatments their providers recommend, the result is **nonadherence** or noncompliance (DiMatteo, 2004). Estimates of nonadherence vary from a low of 15 percent to a staggering high of 93 percent. Averaging across all treatment regimens, nonadherence to treatment recommendations is about 26 percent (DiMatteo, Giordani, Lepper, & Croghan, 2002).

But adherence rates vary, depending on the treatment recommendations. For short-term antibiotic regimens, one of the most common prescriptions, about one-third of patients fail to comply adequately (see Rapoff & Christophersen, 1982). Between 50 and 60 percent of patients do not keep appointments for modifying preventive health behaviors (DiMatteo & DiNicola, 1982). More than 80 percent of patients who receive behavior-change recommendations from their doctors, such as stopping smoking or following a restrictive diet, fail to follow through. Even heart patients, such as patients in cardiac rehabilitation, who should be motivated to adhere, have an adherence rate of only 66–75 percent (Facts of Life, March 2003).

Overall, about 85 percent of patients fail to adhere completely to prescribed medications (O'Connor, 2006). Adherence is typically so poor that the benefits of many medications cannot be experienced (Haynes, McKibbon, & Kanani, 1996). Adherence is highest for treatments for HIV, arthritis, gastrointestinal disorders, and cancer, and poorest among patients with pulmonary disease, diabetes, and sleep disorders (DiMatteo et al., 2002).

Measuring Adherence Asking patients about their adherence yields artificially high estimates (Kaplan & Simon, 1990; Turk & Meichenbaum, 1991). As a consequence, researchers draw on indirect measures of adherence, such as the number of follow-up or referral appointments kept, but even these measures can be biased. Overall, the research statistics probably underestimate the amount of nonadherence that is actually going on.

Good Communication

Adherence is highest when the patient receives a clear, jargon-free explanation of the etiology, diagnosis, and treatment recommendations. Adherence is higher if the patient has been asked to repeat the instructions, if the instructions are written down, if unclear recommendations are singled out and clarified, and if the instructions are repeated more than once (DiMatteo & DiNicola, 1982). Box 9.2 addresses some ways in which adherence errors may be reduced.

Treatment Regimen Qualities of the treatment regimen also influence adherence. Treatment regimens that must be followed over a long time, that are complex, that require frequent dosage, and that interfere with other desirable activities in a person's life all show low levels of adherence (Ingersoll & Cohen, 2008; Turk & Meichenbaum, 1991). Keeping first appointments and obtaining medical tests show high adherence rates (Alpert, 1964; DiMatteo & DiNicola, 1982). Adherence is high (about 90 percent) when the advice is perceived as "medical" (for example, taking medication) but lower (76 percent) if the advice is vocational (for example, taking time off from work) and lower still (66 percent) if the advice is social or psychological (for example, avoiding stressful social situations) (Turk & Meichenbaum, 1991).

People who enjoy the activities in their lives are more motivated to adhere to treatment. Adherence is substantially higher among patients who live in cohesive families but lower with patients whose families are in conflict (DiMatteo, 2004). Likewise, people who are depressed show poor adherence to treatment

BOX 9.2 What Are Some Ways to Improve Adherence to Treatment?

1. Make adult literacy a national priority.
2. Require that all prescriptions be typed on a keyboard.
3. Have secure electronic medical records for each person that document his or her complete medication history and that are accessible to both patients and their physicians.
4. Enforce requirements that pharmacists provide clear instructions and counseling along with prescription medication.
5. Develop checklists for both patients and doctors, so they can ask and answer the right questions before a prescription is written.

Source: The Center for the Advancement of Health, 2009.

medication (DiMatteo, Lepper, & Croghan, 2000). Disorganized families with no regular routines have poorer adherence (Hall, Dubin, Crossley, Holmqvist, & D'Arcy, 2009; Jokela, Elovainio, Singh-Manoux, & Kivimäki, 2009; Schreier & Chen, 2010). Low IQ is tied to poor adherence, and consequently, low IQ predicts early mortality.

Nonadherent patients also cite lack of time, no money, or distracting problems at home, such as instability and conflict, as impediments to adherence. Often people cut back on their prescriptions to save money (Heisler, Wagner, & Piette, 2005).

This can lead to **creative nonadherence,** namely modifying and supplementing a prescribed treatment regimen (Cohen, Kirzinger, Gindi, 2013). For example, a poor patient may change the dosage level of required medication to make the medicine last as long as possible or may keep some medication in reserve in case another family member develops the same disorder. One study of nonadherence among the elderly estimated that 73 percent of nonadherence was intentional rather than accidental (Cooper, Love, & Raffoul, 1982).

Creative nonadherence can also result from personal theories about a disorder and its treatment (Wroe, 2001). Patients supplement the treatment regimen with over-the-counter preparations to treat symptoms they think were ignored by the physician. Unfortunately, remedies can sometimes interact with prescribed drugs in unpredictable, even dangerous ways. Alternatively, the patient may alter the dosage requirement, reasoning, for example, that if four pills a day for 10 days will clear up the problem, eight pills a day for 5 days will do it twice as quickly. Creative nonadherence, then, is a widespread and potentially dangerous behavior.

Another costly consequence of poor patient-practitioner communication is malpractice suits. Table 9.3 shows some of the reasons why people sue in discretionary malpractice cases. The fallout from the costs of malpractice suits is that some physicians leave medicine altogether. For example, malpractice premiums are so high for obstetricians that some have decided to move to other specialties where malpractice insurance is lower (Eisenberg & Sieger, 2003, June 9).

TABLE 9.3 | Why Do People Sue?

Faulty communication can lead to malpractice litigation. Many suits are due to medical incompetence, but discretionary malpractice suits can be due to faulty communication. Typically,

1. Patients want to find out what happened
2. Patients want an apology from the doctor or hospital
3. Patients want to know that the mistake will not happen again

Source: Reitman, 2003, March 24.

IMPROVING PATIENT-PROVIDER COMMUNICATION AND INCREASING ADHERENCE TO TREATMENT

How can we improve communication so as to increase adherence to treatment? There are simple things that both practitioners and patients can do to improve communication.

Teaching Providers How to Communicate

Given the motivation, any practitioner can be an effective communicator.

Training Providers Many physicians are motivated to improve the communication process and to

What Can Providers Do to Improve Adherence? BOX 9.3

1. Listen to the patient.
2. Ask the patient to repeat what has to be done.
3. Keep the prescription as simple as possible.
4. Give clear instructions on the exact treatment regimen, preferably in writing.
5. Make use of special reminder pill containers and calendars.
6. Call the patient if an appointment is missed.
7. Prescribe a self-care regimen in concert with the patient's daily schedule.
8. Emphasize at each visit the importance of adherence.
9. Gear the frequency of visits to adherence needs.
10. Acknowledge at each visit the patient's efforts to adhere.
11. Involve the patient's spouse or other partner.
12. Whenever possible, provide the patient with instructions and advice at the start of the information to be presented.
13. When providing the patient with instructions and advice, stress how important they are.
14. Use short words and short sentences.
15. Use explicit categorization where possible. (For example, divide information clearly into categories of etiology, treatment, or prognosis.)
16. Repeat things, where feasible.
17. When giving advice, make it as specific, detailed, and concrete as possible.
18. Find out what the patient's worries are. Do not confine yourself merely to gathering objective medical information.
19. Find out what the patient's expectations are. If they cannot be met, explain why.
20. Provide information about the diagnosis and the cause of the illness.
21. Adopt a friendly rather than a businesslike attitude.
22. Avoid medical jargon.
23. Spend some time in conversation about nonmedical topics.

Source: Based on DiMatteo, 2004.

When physicians present concrete advice about lifestyle change, patients are more likely to adhere.

© Image Source/Jupiterimages RF

share in decision making, although they may not know how (Garcia-Retamero, Wicki, Cokely, & Hanson, 2014). Effective communication programs should teach skills that can be learned easily and incorporated in medical routines easily. Many communication failures in medical settings stem from violations of simple rules of courtesy. The practitioners should greet patients, address them by name, tell them where they can hang up their clothes, explain the purpose of a procedure while it is going on, say good-bye, and, again, use the patient's name. Such simple behaviors add a few seconds at most to a visit, yet they are seen as warm and supportive (DiMatteo & DiNicola, 1982).

Communication training needs to be practiced in the situations in which the skills will be used. Training that uses direct, supervised contact with patients and gives students immediate feedback after a patient interview works well for training both medical and nursing students (Leigh & Reiser, 1986).

Nonverbal communication can create an atmosphere of warmth or coldness. A forward lean and direct eye contact, for example, can reinforce an atmosphere of supportiveness, whereas a backward lean, little eye contact, and a postural orientation leaning away from the patient can undercut verbal efforts at warmth by suggesting distance or discomfort (DiMatteo, Friedman, & Taranta, 1979; DiMatteo, Hays, & Prince, 1986). Effective nonverbal communication can improve adherence to treatment (Guéguen, Meineri, & Charles-Sire, 2010) (see Box 9.3).

Training Patients Interventions to improve patient communication include teaching patients skills for eliciting information from physicians (Greenfield, Kaplan, Ware, Yano, & Frank, 1988). For example, a study by S. C. Thompson and colleagues (Thompson, Nanni, & Schwankovsky, 1990) instructed women to list three questions they wanted to ask their physician during their visit. Compared with a control group, women who listed questions in advance asked more questions during the visit and were less anxious. In a second study, Thompson and her colleagues added a third condition: Some women received a message from their physician encouraging question asking. These women, too, asked more of the questions they wanted to, had greater feelings of personal control, and were more satisfied with the office visit. Thus, listing one's own questions ahead of time can improve communication during office visits, leading to greater patient satisfaction.

Probing for Barriers to Adherence Patients are remarkably good at predicting how compliant they will be with treatment regimens (Kaplan & Simon, 1990). By making use of this knowledge, the provider may discover what the barriers to adherence will be. For example, if the patient has been told to avoid stressful situations but anticipates several high-pressure meetings the following week at work, the patient and provider together might consider how to resolve this dilemma. One option may be to have a coworker take the patient's place at some of the meetings.

Breaking advice down into manageable subgoals that can be monitored by the provider is another way to increase adherence. For example, if patients have been told to alter their diet and lose weight, modest weight-loss goals that can be checked at successive appointments might be established ("Try to exercise 3 times this week for 30 minutes"). In addition, making the medical importance of lifestyle changes clear can improve adherence.

When lifestyle change programs are "prescribed" for patients by physicians, patients show higher rates of adherence than if they are simply urged to make use of them (Kabat-Zinn & Chapman-Waldrop, 1988). Reasons why the health provider can change patient's health behaviors are listed in Table 9.4.

Overall, the best way to improve adherence is to first, provide patients with information about their treatment, listen to their concerns, encourage their partnership, build trust, and enhance recall. Second, practitioners can help patients believe in their treatment and become motivated to adhere to it. And finally, patients may need assistance in overcoming any practical barriers to the management of their diseases, which can include such factors as cost or little time (DiMatteo, Haskard-Zolnierek, & Martin, 2012). Figure 9.2 illustrates these processes, as they apply to health behavior.

TABLE 9.4 | Why the Health Practitioner Can Be an Effective Agent of Behavior Change

- The health practitioner is a highly credible source with knowledge of medical issues.
- The health practitioner can make health messages simple and tailor them to the individual needs and vulnerabilities of each patient.
- The practitioner can help the patient decide to adhere by highlighting the advantages of treatment and the disadvantages of nonadherence.
- The private, face-to-face nature of the interaction provides an effective setting for holding attention, repeating and clarifying instructions, extracting commitments from a patient, and assessing sources of resistance to adherence.
- The personal nature of the interaction enables a practitioner to establish referent power by communicating warmth and caring.
- The health practitioner can enlist the cooperation of other family members in promoting adherence.
- The health practitioner has the patient under at least partial surveillance and can monitor progress during subsequent visits.

Innovations in technology may make communication more efficient and effective. Smartphone apps, email, and texting can be efficient ways to send messages from patient to physician and vice versa (*The Economist,* May 2015). Patients can even send pictures of rashes or wounds to help with treatment and follow up.

THE PATIENT IN THE HOSPITAL SETTING

More than 34 million people are admitted yearly to the nearly 6,000 hospitals in this country (American Hospital Association, 2016). As recently as 60 or 70 years ago, hospitals were thought of primarily as places where people went to die (Noyes et al., 2000). Now, however, the hospital serves many treatment functions. The average length of a hospital stay has decreased, as

FIGURE 9.2 | The Information-Motivation-Behavioral Skills Model of Health Behavior The information-motivation-behavioral skills (IMB) model makes it evident that, to practice good health behaviors and adhere to treatment, a person needs the right information, the motivation to adhere, and the skills to perform the behavior. (*Sources:* Fisher & Fisher, 1992; Fisher, Fisher, Amico, & Harman, 2006; Fisher, Fisher, & Harman, 2003)

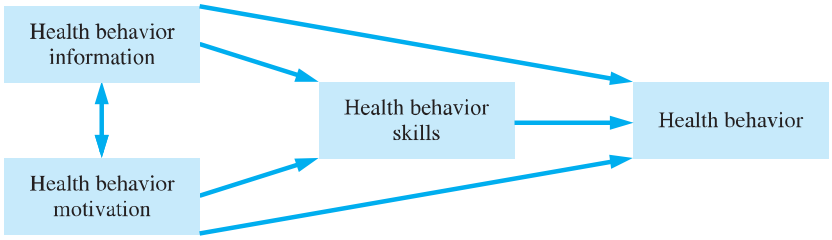


Figure 9.3 illustrates, largely because outpatient visits have increased (American Hospital Association, 2009a); number of deaths in the hospital have declined (Hall, Levant, & DeFrances, 2013).

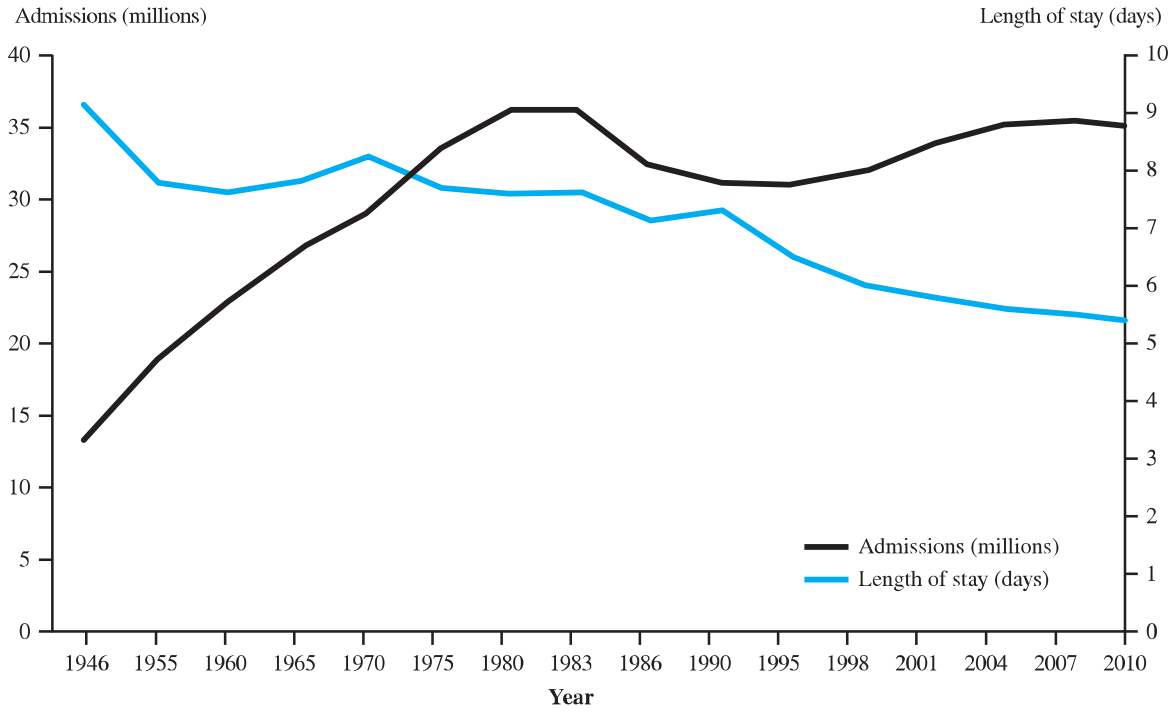
Structure of the Hospital

The structure of hospitals depends on the health program under which care is delivered. For example, some health maintenance organizations (HMOs) and other prepaid health care systems have their own hospitals and employ their own physicians. In the case of the private hospital, there are two lines of authority—a medical line, which is based on technical skill and expertise, and an administrative line, which runs the business of the hospital.

Cure, Care, and Core

The functioning of the hospital typically revolves around three goals—cure, care, and core—which may sometimes conflict with each other. *Cure* is typically the physician's responsibility, through performing any treatment action that has the potential to restore patients to good health—that is, to

FIGURE 9.3 | Hospital Admissions and Length of Stay, 1946–2010 (*Source:* American Hospital Association, 2009b)



cure them. Patient *care,* in contrast, is more the orientation of the nursing staff, and it involves the humanitarian side of medicine, that is, to do as much as possible to keep the patient's emotional and physical state in balance. The administration of the hospital is concerned with maintaining the *core* of the hospital: ensuring the smooth functioning of the system and the flow of resources, services, and personnel (Mauksch, 1973).

These goals are not always compatible. For example, a clash between the cure and care orientations might occur when deciding whether to administer chemotherapy to an advanced-cancer patient. The cure orientation would maintain that chemotherapy should be initiated even if the chance for survival is slim, whereas the care orientation might argue against the chemotherapy on the grounds that it causes patients great physical and emotional distress. In short, then, the different professional goals in a hospital treatment setting can create conflicting demands.

Occupational segregation in the hospital is high: Nurses talk to other nurses, physicians to other physicians, and administrators to other administrators. Physicians have access to some information that nurses may not see, whereas nurses interact with patients daily and know a great deal about their day-to-day progress, yet often their notes on charts may go unread by physicians. The U.S. health care system has been likened to a construction team trying to put up a building in which the different construction teams, the electricians, and the plumbers all have different sets of plans, and no one knows what anyone else's plans look like.

An example of the problems associated with lack of communication is provided by nosocomial infection—that is, infection that results from exposure to disease in the hospital setting (Raven, Freeman, & Haley, 1982). In 2011, there were 722,000 people who reported health-care associated infections in American hospitals, resulting in 75,000 deaths (Centers for Disease Control and Prevention, October, 2015). This rate makes hospital infection the number six killer in the United States.

Hospital workers often break the seemingly endless rules designed to control infection, such as the strict guidelines for hand washing, sterilization, and waste disposal. Of all hospital workers, physicians are the most likely to commit such infractions. However, they are rarely corrected by those under them.

The preceding discussion has emphasized potential sources of conflict and ambiguity in hospital functioning. Burnout, another problem that can result in part from these issues, is described in Box 9.4. However, it is important to remember that hospital functioning is remarkably effective, given the changing realities to which it must accommodate. Thus, the ambiguities in structure, potential conflicts in goals, and problems of communication occur within a system that generally functions quite well.

The Role of Health Psychologists

The number of health psychologists who work in hospital settings has more than doubled over the past 10 years, and their roles have expanded. Psychologists participate in the diagnosis of patients and assess patients' level of functioning, which can help form the basis for therapeutic intervention. Psychologists are also involved in pre- and postsurgery preparation, pain control, interventions to increase medication and treatment compliance, and behavioral programs to teach appropriate self-care following discharge (Enright, Resnick, DeLeon, Sciara, & Tanney, 1990). In addition, they diagnose and treat psychological problems that can complicate patient care, including anxiety and depression. As our country's medical care system evolves over the next decades, the role of psychologists in the hospital will continue to change.

The Impact of Hospitalization on the Patient

The patient comes unbidden to a large organization that awes and irritates him, even as it also nurtures and cares. As he strips off his clothing so he strips off, too, his favored costume of social roles, his favored style, his customary identity in the world. He becomes

The hospital can be a lonely and frightening place for many patients, leading to feelings of helplessness, anxiety, or depression.

© Ingram Publishing RF

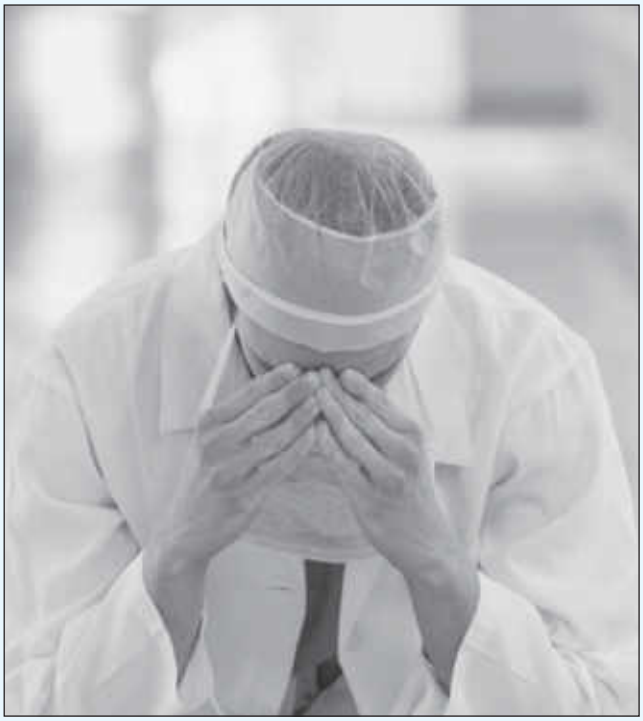
Burnout Among Health Care Professionals — BOX 9.4

Burnout is an occupational risk for anyone who works with needy people (Maslach, 2003), including physicians, nurses, and other medical personnel who work with sick and dying people (Rutledge et al., 2009). Burnout is marked by three components: emotional exhaustion, cynicism, and a low sense of efficacy in one's job. Staff members suffering from burnout show a cynical and seemingly callous attitude toward those whom they serve. Their view of clients is negative, and they often treat clients in detached ways (Maslach, 2003).

Burnout has been linked to absenteeism, high job turnover, lengthy breaks during working hours, and even suicide (Schernhammer, 2005). When burned-out workers go home, they are often irritable with their families. They are more likely to suffer from insomnia as well as drug and alcohol abuse, and they have a higher rate of psychosomatic disorders. Thus, burnout has substantial costs for both the institution and the person. Burnout has also been tied to elevated stress hormones (Pruessner, Hellhammer, & Kirschbaum, 1999), changes in immune functioning (Lerman et al., 1999), and poor health including coronary heart disease (Toker, Melamed, Berliner, Zeltser, & Shapira, 2012).

Why does burnout develop? Burnout develops when a person is required to provide services for highly needy people who may not be helped by those services: The problems may be just too severe. Moreover, such jobs often require the staff member to be consistently empathic, an unrealistic expectation. Caregivers may perceive that they give much more than they get back from their patients, and this imbalance aggravates burnout as well (Van Yperen, Buunk, & Schaufelli, 1992). Too much time spent with clients, little feedback, little sense of control or autonomy, little perception of success, role conflict, and role ambiguity are job factors that all aggravate burnout (Maslach, 1979).

High rates of burnout are found among nurses who work in stressful environments, such as intensive care, emergency rooms, or terminal care (Mallett, Price, Jurs, & Slenker, 1991; Moos & Schaefer, 1987).



© Erproductions Ltd/Blend Images LLC RF

Many nurses find it difficult to protect themselves from the pain they feel from watching their patients suffer or die. The stress of the work environment, including the hectic pace of the hospital and the hurried, anxious behavior of coworkers, also contributes to burnout (Parker & Kulik, 1995).

How can burnout be avoided? Group interventions can provide workers with an opportunity to meet informally with others to deal with burnout to obtain emotional support, reduce their feelings of being alone, share feelings of emotional pain about death and dying, and vent emotions in a supportive atmosphere. In so doing, they may improve client care (Duxbury, Armstrong, Dren, & Henley, 1984) and control current feelings of burnout, as well as head off future episodes (Rowe, 1999). For example, seeing what other people do to avoid burnout can provide a useful model for one's own situation.

subject to a time schedule and a pattern of activity not of his own making (Wilson, 1963, p. 70).

Patients arrive at the hospital anxious about their disorder, anxious and confused over the prospect of hospitalization, and concerned with all the role obligations they must leave behind unfulfilled. The admission is often conducted by a clerk, who asks about scheduling, insurance, and money. The patient is then ushered into a strange room, given strange clothes, provided with an unfamiliar roommate, and subjected to tests.

The patient must entrust him- or herself completely to strangers in an uncertain environment in which all procedures are new.

Hospital patients can show problematic psychological symptoms, especially anxiety and depression. Nervousness over tests or surgery can produce insomnia, nightmares, and an inability to concentrate. Hospital care can be fragmented, with as many as 30 different staff passing through a patient's room each day, conducting tests, taking blood, bringing food, or cleaning up. Often, the staff members have little time to spend with the patient beyond exchanging greetings, which can be alienating for the patient.

At one time, patients complained bitterly about the lack of communication they had about their disorders and their treatments. Because of these concerns, hospitals have now tried to ameliorate this problem. Patients are now typically given a road map of what procedures they can expect and what they may experience as a result.

INTERVENTIONS TO INCREASE INFORMATION IN HOSPITAL SETTINGS

Many hospitals now provide interventions that help prepare patients generally for hospitalization and for the procedures they will undergo.

In 1958, psychologist Irving Janis conducted a landmark study that would forever change how patients are prepared for surgery. Janis was asked by a hospital to study its surgery patients to see if something could be done to reduce the stress that many of them experienced both before and after operations. Janis first grouped the patients according to the level of fear they experienced before their operations (high, medium, and low). Then he studied how well they understood and used the information the hospital staff gave them to help them cope with the aftereffects of surgery. Highly fearful patients generally remained fearful and anxious after surgery and showed many negative side effects, such as vomiting, pain, urinary retention, and difficulty with eating (see also Montgomery & Bovbjerg, 2004). Patients who initially had little fear also showed unfavorable reactions after surgery, becoming angry or upset or complaining. Of the three groups, the moderately fearful patients coped with postoperative stress most effectively.

In interpreting these results, Janis reasoned that highly fearful patients had been too absorbed with their own fears preoperatively to process the preparatory information adequately, and patients with little fear were insufficiently vigilant to understand and process the information effectively. Patients with moderate levels of fear, in contrast, were vigilant enough but not overwhelmed by their fears, so they were able to develop realistic expectations of what their postsurgery reactions would be; when they later encountered these sensations and reactions, they expected them and were ready to deal with them.

Subsequent studies have used Janis's observations to create interventions. For example, in one study (Mahler & Kulik, 1998), patients awaiting coronary artery bypass graft (CABG) were exposed to one of three preparatory videotapes or to no preparation. One videotape conveyed information from a health care expert; the second featured the health care expert but also included clips of interviews with patients who reported on their progress; and the third presented information from a health care expert plus interviews with patients who reported that their recovery consisted of "ups and downs." Compared to patients who did not receive videotaped preparation, patients who saw one of the videotapes felt significantly better prepared for the recovery period, reported higher self-efficacy during the recovery period, were more adherent to recommended dietary and exercise changes during their recovery, and were released sooner from the hospital.

Research on the role of preparatory information in adjustment to surgery overwhelmingly shows that such preparation has beneficial effects on hospital patients. Patients who have been prepared are typically less emotionally distressed, regain their functioning more quickly, and are often able to leave the hospital sooner. One study (Kulik & Mahler, 1989) even found that the person who becomes your postoperative roommate can influence how you cope with the aftermath of surgery (Box 9.5). Preparation for patients is so beneficial that many hospitals show videotapes to patients to prepare them for upcoming procedures.

THE HOSPITALIZED CHILD

Were you ever hospitalized as a child? If so, think back over the experience. Was it frightening and disorienting? Did you feel alone and uncared for? Or was it a more positive experience? Perhaps your parents were able to room in with you, or other children were around to talk to. You may have had either of these experiences because procedures for managing children

Social Support and Distress from Surgery — BOX 9.5

Patients who are hospitalized for serious illnesses or surgery often experience anxiety. From the earlier discussion of social support (see Chapter 7), we know that emotional support from others can reduce distress when people are undergoing stressful events. Accordingly, James Kulik and Heike Mahler (1987) developed a social support intervention for patients about to undergo cardiac surgery. Some of the patients were assigned a roommate who was also waiting for surgery (preoperative condition), whereas others were assigned a roommate who had already had surgery (postoperative condition). In addition, patients were placed with a roommate undergoing a surgery that was either similar or dissimilar to their own.

The researchers found that patients who had a postoperative roommate profited from this contact (see also Kulik, Moore, & Mahler, 1993). Patients with a post-operative roommate were less anxious before surgery, were able to move around after surgery, and were released more quickly from the hospital than were patients who had been paired with a roommate who was also awaiting surgery. Whether the type of surgery was similar or dissimilar made no difference, only whether the roommate's surgery had already taken place.

Why was having a post-operative roommate helpful for patients awaiting surgery? Possibly roommates were able to provide relevant information about the post-operative period. They may have acted as role models for how to cope post-operatively. Whatever the reason, social contact with a post-operative roommate clearly had a positive impact on the pre- and post-operative adjustment of these surgery patients (Kulik & Mahler, 1993; Kulik et al., 1993).

in the hospital have changed dramatically over the past few decades.

Hospitalization can be hard on children. It is difficult for a child to be separated from family and home. Some children may not understand why they have been taken away from their families and mistakenly infer that they are being punished for some misdeed. The hospital environment can be lonely and isolating. Physical confinement in bed or confinement due to casts or traction keeps children from discharging energy through physical activity. Some children may become socially withdrawn, wet their beds, or have extreme emotional reactions ranging from fear to temper tantrums. The dependency that is fostered by bed rest and reliance on staff can also lead to regression. Children, especially those just entering puberty, can be embarrassed or ashamed by having to expose themselves to strangers. The child may also be subject to confusing or painful tests and procedures.

Preparing Children for Medical Interventions

Just as adults are benefited by preparation, so children are as well (Jay, Elliott, Woody, & Siegel, 1991; Manne et al., 1990). In one study (Melamed & Siegel, 1975), children about to undergo surgery were shown either a film of another child being hospitalized and receiving surgery or an unrelated film. Those children exposed to the relevant film showed less pre- and postoperative distress than did children exposed to the irrelevant film. Moreover, parents of the children exposed to the modeling film reported fewer problem behaviors after hospitalization than did parents of children who saw the control film.

Coping skills preparation can be helpful to children (Cohen, Cohen, Blount, Schaen, & Zaff, 1999). For example, T. R. Zastowny and colleagues (Zastowny, Kirschenbaum, & Meng, 1986) gave children and

Recent changes in hospitalization procedures for children have made hospitals less frightening places to be. Increasingly, medical personnel have recognized children's needs for play and have provided opportunities for play in hospital settings.

© 2007 Keith Eng RF

their parents information describing typical hospitalization and surgery experiences, relaxation training to reduce anxiety, or a coping skills intervention to teach children constructive self-talk. Both the anxiety reduction and the coping skills interventions reduced children's fearfulness and parents' distress. Overall, the children exposed to the coping skills intervention exhibited the fewest maladaptive behaviors during hospitalization, less problem behavior in the week before admission, and fewer problems after discharge.

Some preparation can be undertaken by parents. If a parent prepares a child for admission several days before hospitalization—explaining why it is necessary, what it will be like, who will be there, how often the parent will visit, and so on—this preparation may ease the transition. During admission procedures, a parent or another familiar adult can remain with the child until the child is settled into the new room and engaged in some activity.

The presence of parents during stressful medical procedures is not an unmitigated benefit. Parents do not always help reduce children's fears, pain, and discomfort (Manne et al., 1992). When present during invasive medical procedures, some parents can become distressed and exacerbate the child's own anxiety (Wolff et al., 2009). Nonetheless, parental support is important, and most hospitals now provide opportunities for extended parental visits, including 24-hour parental visitation rights. Despite some qualifications, the benefits of preparing children for hospitalization are now so widely acknowledged that it is more the rule than the exception.

COMPLEMENTARY AND ALTERNATIVE MEDICINE

Thus far, our discussion of treatment has focused on traditional treatment venues, including the physician's office and the hospital. However, nearly two-thirds of adults in the United States use **complementary and alternative medicine (CAM)** in addition to or instead of traditional medicine (Barnes, Powell-Griner, McFann, & Nahin, 2004; Neiberg et al., 2011). Complementary and alternative medicine is a diverse group of therapies, products, and medical treatments that include prayer, potions, natural herb products, meditation, yoga, massage, homeopathic medicines, and acupuncture, among other treatments. Table 9.5 lists the most common CAM practices. Until the 1990s, CAM was not a thriving business. Now, however, about two-thirds of people in the United States use CAM each year. More than $50 billion a year is spent on CAM therapies, much of which comes out of pocket; that is, it is not reimbursed by insurance companies.

The drugs and treatments of traditional medicine must be evaluated according to federal standards. Medications, for example, are typically evaluated through clinical trials and licensed by the Food and Drug Administration. However, the same is not true of CAM treatments, and so CAM represents a vast and often unevaluated aspect of care. This does not mean that CAM treatments do not work, but only that many have not been formally tested or have been evaluated only in very narrow contexts. For this reason, the National Center for Complementary and Alternative Medicine (NCCAM) was created within the National Institutes of Health in 1998. Its mission is to evaluate the usefulness and safety of CAM therapies through rigorous scientific investigation and to discern what roles such therapies might have in improving health and health care (National Center for Complementary and Alternative Medicine, 2012). We begin this section with an overview of the philosophical origins of complementary and alternative medicine. We then turn to the most common CAM therapies and evaluate them where evidence is available.

Philosophical Origins of CAM

CAM is rooted in **holistic medicine,** an approach to treatment that deals with the physical, psychological, and spiritual needs of the person. In many respects, this is a logical extension of the biopsychosocial model introduced in Chapter 1, which also seeks to treat the

TABLE 9.5 | Ten Most Common CAM Therapies Among U.S. Adults

1. Prayer—43%
2. Natural products (herbs, vitamins, and minerals)—17.7%
3. Deep breathing—12.7%
4. Meditation—9.4%
5. Chiropractic and Osteopathic—8.6%
6. Massage—8.3%
7. Yoga—6.1%
8. Diet-based therapies—3.6%
9. Progressive relaxation—2.9%
10. Guided imagery—2.2%

Source: National Center for Complementary and Integrative Health, 2016.

whole person. Perhaps the earliest approach to healing was prayer. As we saw in Chapter 1, medicine evolved from religion, in which the healing of the body was believed to result from expelling evil spirits from the body. CAM's origins lie in ancient African, European, and Middle Eastern religions, and Asian cultures.

Traditional Chinese Medicine

Traditional Chinese Medicine began more than 2,000 years ago and enjoys wide use throughout Asia. Recently, it has gained adherents in the United States. This approach to healing is based on the idea that a vital force, called qi (pronounced "chee"), flows throughout the body through channels called meridians that connect the parts of the body to each other and to the universe. Qi is considered the vital life force, and so if it is blocked or stagnant, disease can result. Keeping qi in balance, thus, is important both for maintaining good health and for improving health when it has been compromised.

Traditional Chinese Medicine also strives to balance two forces, yin and yang. Yin is cold, passive, and slow-energy, whereas yang is hot, active and rapid. Balancing the two is believed to be important for good health and attaining mental and physical harmony. Stress, infectious disorders, and environmental stressors can lead to imbalances between these forces, and thus the goal of intervention is to restore the balance.

To do so, Traditional Chinese Medicine draws on such techniques as acupuncture, massage, diet, exercise, and meditation. It also draws on a variety of herbal preparations, including ginseng, wolfberry, gingerroot, dong quai, cinnamon, astragalus, and peony. Dietary intervention, which includes foods that shift the yin-yang balance, is a staple of Traditional Chinese Medicine.

There has been relatively little formal evaluation of Traditional Chinese Medicine and its treatments, in large part because multiple treatments are often combined for individualized treatment based on a person's particular problem. Without standardized treatments received by a large number of people, formal evaluation is difficult. However, there is some formal support for certain aspects of Traditional Chinese Medicine.

One theory that is gaining traction, if not yet substantial evidence, is the idea that the activities of Traditional Chinese Medicine, especially its herbal preparations, have anti-inflammatory properties, and thus affect the immune system in a generally beneficial way that may have implications for a broad array of illnesses (Pan, Chiou, Tsai, & Ho, 2011). Whether traditional Chinese medicinal herbs and practices do indeed have anti-inflammatory actions is as yet unknown, but this is a promising evaluative pathway to pursue.

Ayurvedic Medicine

A related tradition that developed in India around 2,000 years ago is **ayurvedic medicine.** Like Traditional Chinese Medicine, the goal is balance among the body, mind, and spirit (National Center for Complementary and Alternative Medicine, 2009a). Although people are born into a state of balance, events in their lives can disrupt it, compromising health, and so bringing these forces back into balance alleviates illness and maintains good health. As in Traditional Chinese Medicine and holistic medicine more generally, information about lifestyle and behavior is elicited from the patient and family members to identify treatment goals to achieve harmony and balance. Diet, exercise, and massage are important elements of ayurvedic medicine, as are use of herbs, oils, spices, and various minerals, to keep the person in balance. Ayurvedic medicine has been used to treat a variety of disorders, but little formal evaluation has been conducted.

Homeopathy and Naturopathy

Homeopathy is a philosophy developed in Europe in the 1700s, which likewise interprets disease and illness as caused by disturbances in a vital life force. Practitioners of homeopathy typically treat patients using diluted preparations that cause symptoms similar to those from which the patient suffers. When highly diluted, homeopathic remedies are typically safe, although when not sufficiently diluted, they can put patients at risk for illness. For some disorders, such as influenza-like syndromes, homeopathy may alleviate symptoms, but in other cases, the evidence is weak or mixed (Altunç, Pittler, & Ernst, 2007; Linde et al., 1999). At present, with respect to the standards of evidence-based medicine, the success of homeopathic treatments is still in question (Bellavite, Marzotto, Chirumbolo, & Conforti, 2011).

Other early origins of CAM include naturopathy, a medical system developed in the 1800s, whose central tenet is that the body can heal itself through diet, exercise, sunlight, and fresh air.

In summary, the origins of complementary and alternative medicine are at least 2,000 years old and arose from ancient religions and traditional healing practices in China and India, as well as from more

recent health movements in Europe and the United States. All have as a fundamental principle the idea that the mind, body, spirit, and environment operate together to influence health. Intervention through prayer or meditation, diet, exercise, massage, herbal potions, and specific treatments, such as acupuncture, provide the impetus for the body to return itself to full health.

CAM TREATMENTS

In this section we review some of the most commonly used CAM therapies, and when possible, evaluate their effects. We begin with the most common CAM therapies, dietary supplements and prayer. We then discuss a central therapy of Traditional Chinese Medicine, namely acupuncture, following which we consider several therapies that have their basis in meditation. These are sometimes called mind-body interventions, and they include yoga, hypnosis, mindfulness meditation, and guided imagery. Finally, we turn to massage therapy, chiropractic medicine, and osteopathy, which involve the manipulation of soft tissue or spine and joints.

Dietary Supplements and Diets

Dietary supplements contain nutrients in amounts that are as high or higher than levels recommended by the United States Institute of Medicine's daily recommendations. Over one-half of the U.S. population regularly uses dietary supplements, the most common being multivitamins (Gahche et al., 2011). Calcium is taken by nearly 61 percent of women over age 60, and consumption of folic acid and vitamin D supplements has also substantially increased in recent years (Gahche et al., 2011). Although dietary supplements are typically taken by healthy people in the belief that high doses of vitamins can help stave off illness, there is little systematic evidence for this position (Institute of Medicine, 2010; National Institutes of Health, 2006; Nestle & Nesheim, 2013). Moreover, supplements that contain iron are associated with increased mortality risk among older women (Mursu, Robien, Harnack, Park, & Jacobs, 2011). Accordingly, some practitioners maintain that dietary supplements should be reserved for people who have symptomatic nutrient deficiency disorders; in these cases, dietary supplements have clear health benefits.

Overall, the use of dietary supplements is not related to improved health (Rabin, 2012). Many people who take supplements believe that they can stave off chronic disease, but until recently this has been more claim than substance. However, a recent study found that among older men who took a multivitamin daily, cancer rates were reduced by 8 percent (Gaziano et al., 2012). This well-designed study provides some evidence that dietary supplements may have health benefits for at least some groups of healthy people.

Vitamin D supplements may reduce symptoms of depression (Shaffer et al., 2014). However, because supplements are perceived to improve health, at least some people use them as insurance against their unhealthy behaviors. For example, in two studies, people who took placebo dietary supplements were less likely to exercise and more likely to eat unhealthy foods, compared to people who knew that the drug they had received was a placebo (Chiou, Yang, & Wan, 2011). Thus, at least in some people, dietary supplements may confer an illusory sense of invulnerability that may have hidden costs.

Increasingly, people are eating specific foods (and avoiding others) to achieve good health. Foods that affect the microbiome in the gut are among those (Sonnenburg & Sonnenburg, 2015). Beginning in infancy with mother's milk and continuing into old age, how we feed ourselves can influence the microbiotica in the gut, and probiotic supplements are often used to augment these effects. Whether health risks are affected is hard to evaluate, in part because each person's microbiome is individual, influenced by genetics, food consumption, and other aspects of the environment (Sonnenburg & Sonnenburg, 2015).

Specific diets have also been used in an effort to improve health. These include macrobiotic and vegetarian diets. Vegetarian diets involve reducing or eliminating meat and fish and increasing consumption of vegetables, fruits, grains, and plant-based oils. As we saw in Chapter 4, reduced consumption of meat is widely recommended for health. However, vegetarians run a risk of obtaining inadequate protein and nutrients, and so careful attention to the components of vegetarian diets is vital. Macrobiotic diets, which restrict vegetarian consumption primarily to grains, cereals, and vegetables, require even greater attention to nutritional content (American Cancer Society, 2008).

Prayer

When prayer is included as a CAM therapy, the number of adults in the United States who report using CAM yearly totals two-thirds. Surveys (Gallup Poll, 2009) indicate that the majority of people in the United States believe in God (80 percent), report attending church services at least once a month (55 percent), and say that

religion is important in their personal lives (80 percent). Nearly half the population in the United States uses prayer to deal with health problems (Zimmerman, 2005, March 15).

Prayer may have some benefits for coping with illness. For example, in one study, surgery patients with strong religious beliefs experienced fewer complications and had shorter hospital stays than those with less strong religious beliefs (Contrada et al., 2004). Spiritual beliefs have been tied to better health practices (Hill, Ellison, Burdette, & Musick, 2007), better health (Krause, Ingersoll-Dayton, Liang, & Sugisawa, 1999), and longer life (Koenig & Vaillant, 2009; McCullough, Friedman, Enders, & Martin, 2009; Schnall et al., 2010). Religious attendance can protect against high blood pressure (Gillum & Ingram, 2006), complications from surgery (Ai, Wink, Tice, Bolling, & Shearer, 2009), and headache (Wachholtz & Pargament, 2008), among other disorders and symptoms (Berntson, Norman, Hawkley, & Cacioppo, 2008), perhaps because of its promotion of a healthy lifestyle (Musick, House, & Williams, 2004). However, religious beliefs do not appear to retard the progression of cancer or speed recovery from acute illness (Powell, Shahabi, & Thoresen, 2003).

Prayer is unusual in that health psychologists have actually evaluated its efficacy with respect to evidence-based medicine standards. On the whole, despite some benefits, many of which may come from the sense of calm or relaxation that religion can provide, prayer itself does not appear to reliably improve health (Masters & Spielmans, 2007; Nicholson, Rose, & Bobak, 2010). The social support that comes from religious attendance, as noted in Chapter 7, can lead to health benefits, but reliable effects of prayer on health have not been found.

Acupuncture

Acupuncture has been in existence in China for more than 2,000 years. In acupuncture treatment, long, thin needles are inserted into designated areas of the body that theoretically influence the areas in which a patient is experiencing a disorder. Although the main goal of acupuncture is to cure illness, it may also have an analgesic effect. In China, some patients are able to undergo surgery with only the analgesia of acupuncture. During surgery, these patients are typically conscious, fully alert, and able to converse while the procedures are going on.

Acupuncture is often used to control pain (Cherkin et al., 2009; Madsen, Gøtzsche, Hróbjartsson, 2009; Manheimer, Linde, Lao, Bouter, & Berman, 2007), although how it does so is not fully known. Acupuncture may function partly as a counterirritation pain management technique. It is typically accompanied by relaxation, a belief that acupuncture will work, and preparation regarding what sensations the needles will cause and how to tolerate them. All of these factors by themselves can reduce pain. Acupuncture may also be distracting, and it is often accompanied by analgesic drugs that also reduce pain. Some benefits may also be due to placebo effects. Finally, acupuncture may trigger the release of endorphins, which reduces the experience of pain.

An evaluation of the effectiveness of acupuncture is difficult because of its limited use in the United States. Of 32 reviews of the acupuncture literature, 25 of them failed to demonstrate its effectiveness with respect to many disorders (Ernst, 2009). There may be some benefits for certain kinds of pain (Birch, Hesselink, Jonkman, Hekker, & Bos, 2004), especially short-term pain, but it is not as effective for chronic pain.

The broad claims for acupuncture have not yet been upheld scientifically (Ernst, 2009; Ernst, Lee, & Choi, 2011). Moreover, there are some risks of adverse effects, such as bleeding or infection (Ernst, Lee, & Choi, 2011). As is true for many other evaluations of CAM therapies, studies of acupuncture's effectiveness are typically limited by small samples, poor controls, and poor design (Ahn et al., 2008). Consequently, using the standards of evidence-based medicine, conclusions regarding the effectiveness of acupuncture for disorders other than management of acute pain are not definitive.

Yoga

Yoga has been practiced for more than 5,000 years, although it has only recently become popular in the United States. Yoga is a general term that includes breathing techniques, posture, strengthening exercises, and meditation. Originating in spiritual traditions in India, yoga is now practiced by approximately 21 million people in the United States on a regular basis (National Center for Complementary and Integrative Health, 2015). The yoga market is a multibillion dollar industry in the United States, and yoga is now used to treat chronic pain, bronchitis, symptoms associated with menopause, and a variety of mental and physical ailments related to stress, including anxiety and depression. Because stress and anxiety contribute to many chronic disorders and

lower quality of life, a non-pharmacologic therapy that can reduce stress and anxiety has much promise, and yoga is one popular option (Li & Goldsmith, 2012).

In studies that have evaluated its effectiveness, most people report lower stress and anxiety, although many studies have small numbers of participants and are not well controlled (Li & Goldsmith, 2012; Lin, Hu, Chang, Lin, & Tsauo, 2011; Smith & Pukall, 2009). Yoga has also been used to treat cancer-related fatigue. In one study of breast cancer survivors, a yoga intervention significantly reduced fatigue and improved vigor (Bower et al., 2011). There is, as yet, however, no strong evidence that yoga improves physical health.

Hypnosis

Hypnosis is one of the oldest CAM techniques. Old medical textbooks and anthropological accounts of healing rituals provide anecdotal evidence of such extreme interventions as surgery conducted with no apparent pain while the patient was under a hypnotic trance.

Hypnosis involves a state of relaxation; relaxation alone can help reduce stress and discomfort. Typically, the client is explicitly told that the hypnosis will be successful: Expectations can reduce discomfort via the placebo effect. Hypnosis is itself a distraction, and distraction can reduce discomfort. The patient is usually instructed to think about the discomfort differently, and the meaning attached to discomfort influences the experience. And finally, in the case of pain management, the patient undergoing hypnosis is often given painkillers or other drug treatments.

The effects of hypnosis are mixed. The beneficial effects of hypnosis in reducing pain may be due at least in part to the composite effects of relaxation, reinterpretation, distraction, and drugs. The effects of self-hypnosis on chronic pain are roughly comparable to those of progressive muscle relaxation and similar relaxation therapies (Jensen & Patterson, 2006). The use of hypnosis for other health-related issues has not been formally evaluated.

Meditation

Meditation refers to a variety of therapies that focus and control attention (National Center for Complementary and Integrative Health, 2016). For example, in transcendental meditation, the person focuses his or her awareness on a single object (such as a flower) or on a word or short phrase called a mantra. Meditators often achieve an advanced state of relaxation and control of bodily processes.

Mindfulness meditation, which was discussed in Chapter 7, teaches people to strive for a state of mind marked by awareness and to focus on the present moment, accepting and acknowledging it without becoming distracted or distressed by stress. Thus, the goal of mindfulness meditation is to help people approach stressful situations mindfully, rather than reacting to them automatically (Bishop, 2002; Hölzel et al., 2011).

More empirical investigations have been conducted on mindfulness meditation than on most other CAM therapies. Certain aspects of meditation may be helpful for managing pain (Perlman, Salomons, Davidson, & Lutz, 2010). On the whole, it appears to be successful in controlling stress and anxiety (Chiesa & Serretti, 2009; Grossman, Niemann, Schmidt, & Walach, 2004) and managing HPA reactivity of biological stress responses and blood pressure in response to stress (Jacobs et al., 2013; Nyklíček, Mommersteeg, Van Beugen, Ramakers, & Van Boxtel, 2013). Mindfulness meditation may also be an effective treatment for certain functional disorders such as fibromyalgia (Grossman, Tiefenthaler-Gilmer, Raysz, & Kesper, 2007). Most studies of mindfulness meditation, however, compare those who have been trained in the practice with waitlist controls, that is, people who are motivated to learn mindfulness but have not yet had the opportunity. True control groups are rare. In one of the few studies to date that has randomly assigned people to mindfulness meditation or to a control group, mindfulness training had some impact on alleviating pain but not on distress (MacCoon et al., 2012). In non-experimental studies, mindfulness-based interventions have been effective in treating depression, anxiety, and other psychiatric disorders (Ivanovski & Malhi, 2007; Keng, Smoski, & Robins, 2011). Still, as is true of most CAM therapies, the quality of the evidence remains inconsistent (Chiesa & Serretti, 2009).

Guided Imagery

Guided imagery is a meditative procedure that has been used to control discomfort related to illness and treatment, especially cancer. In guided imagery, a patient is instructed to conjure up a picture that he or she holds in mind during a procedure or during the experience of discomfort. Some practitioners of guided imagery use it primarily to induce relaxation. The patient is encouraged to visualize a peaceful, relatively unchanging scene, to hold it in mind, and to focus on it

fully. This process brings on a relaxed state, concentrates attention, and distracts the patient—all techniques that have been shown to reduce discomfort.

An example of using guided imagery to control the discomfort of a medical procedure is provided by a patient undergoing radiation therapy:

> When I was taking the radiation treatment, I imagined I was looking out my window and watching the trees and seeing the leaves go back and forth in the wind. Or, I would think of the ocean and watch the waves come in over and over again, and I would hope, "Maybe this will take it all away."

A different visualization technique may be used by patients trying to take a more aggressive stance toward illness and discomfort. Instead of using imagery to calm and soothe themselves, these patients use it to rouse themselves into a confrontive stance by imagining a combative, action-filled scene. The following example is from a patient who used aggressive imagery in conjunction with chemotherapy treatment:

> I imagined that the cancer was this large dragon and the chemotherapy was a cannon, and when I was taking the chemotherapy, I would imagine it blasting the dragon, piece by piece.

One chemotherapy patient profited from the use of both types of imagery:

> It was kind of a game with me, depending on my mood. If I was peaceful and wanted to be peaceful, I would image a beautiful scene, or if I wanted to do battle with the enemy, I would mock up a battle and have my defenses ready.

How effective is guided imagery? Early claims that guided imagery can cure diseases such as cancer have no foundation. However, the practice of guided imagery can alleviate stress and induce relaxation. There is some evidence that guided imagery can reduce pain (Abdoli, Rahzani, Safaie, & Sattari, 2012; Posadzki, Lewandowski, Terry, Ernst, & Stearns, 2012), but on the whole, like other CAM therapies, there are too few rigorous randomized clinical trials that test its effectiveness (Posadzki & Ernst, 2011).

Chiropractic Medicine

Chiropractic medicine was founded by Daniel Palmer in 1895 and involves performing adjustments on the spine and joints to correct misalignments that are believed to both prevent and cure illness. Chiropractic is a popular intervention in the United States, and several schools of chiropractic education train practitioners. About 20 percent of people in the United States will make use of chiropractic services at some point in their lives, primarily for the treatment of pain (Barnes, Powell-Griner, McFann, & Nahin, 2004). Most of the evidence for beneficial effects of chiropractic management is limited to a few small-scale studies (Pribicevic, Pollard, Bonello, & de Luca, 2010; Stuber & Smith, 2008). Accordingly, more formal evaluation of these techniques for specific disorders is needed.

Osteopathy

Osteopathy is an alternative medical practice that draws on the body's ability to heal itself. Using manual and manipulative therapy, the osteopath seeks to facilitate healing. There is little scientific evidence for the principles of osteopathy, and little empirical evidence that it is effective except for managing lower back pain (New York University Langone Medical Center, 2012).

Massage

In contrast to chiropracty, massage involves manipulation of soft tissue. In Traditional Chinese Medicine, massage (tui na) is used to manipulate the flow of qi. Massage reduces stress and is believed to boost immune functioning and flush waste out of the system. Certain forms of exercise such as tai chi, which are methodical and stylized, may induce a meditative state and balance the life force.

Tai chi is a Chinese martial art and form of stylized, meditative exercise, characterized by methodically slow circular and stretching movements and positions of bodily balance.

© Jon Feingersh/Blend Images LLC RF

Massage is also used to control stress and pain, and about 5 percent of people in the United States use massage as CAM (Barnes, Powell-Griner, McFann, & Nahin, 2004). Some studies have found massage to be effective for persistent back pain, but the studies are limited by small samples, poor controls, and weak designs (Cherkin, Sherman, Deyo, & Shekelle, 2003).

Who Uses CAM?

Most people who use CAM use only one form. That is, people who take dietary supplements do not necessarily also practice yoga or seek treatment from chiropractors. About 20 percent of adults use two different CAM therapies, but only 5 percent use three or more. Most commonly, those who use more than one CAM therapy combine herbal or dietary supplements with prayer or meditation (Neiberg et al., 2011).

Why do people use complementary and alternative medicines? People often turn to CAM if they have disorders that are not successfully treated by traditional medicine. These include functional disorders that are not well managed by traditional medicine, such as chronic fatigue syndrome; chronic conditions whose existence or treatment create side effects, such as cancer; and intractable pain problems, such as back problems or neck pain (Barnes, Powell-Griner, McFann, & Nahin, 2004). Depression, anxiety, stress, insomnia, severe headaches, and stomach and intestinal disorders also prompt the use of CAM therapies, particularly when these conditions have not been successfully treated through traditional medicine (Frass et al., 2012). Experiencing delays in receiving medical care and high costs of medical care can also lead to use of CAM therapies. Use of CAM therapies, particularly chiropractic care, massage, and acupuncture, increase significantly when access to conventional care has been restricted (Su & Li, 2011).

CAM therapies are used more by white people than by minorities, and are especially used by non-Hispanic white middle-aged older women (Frass et al., 2012; Gahche et al., 2011). The typical CAM therapy for this group is a dietary supplement containing calcium. Overall, the use of CAM therapies has grown in the past two decades, especially among non-Hispanic whites (Gahche et al., 2011).

Complementary and Alternative Medicine: An Overall Evaluation

There is currently insufficient evidence to evaluate the effectiveness of most CAM therapies. In many cases, formal studies have not been undertaken, and when they have, the samples are often small, the controls poor, and the designs weak. The verdict, accordingly, is out on many of these treatments (*The Economist,* April 2012), except in particular cases (e.g., specific dietary supplements provide benefits for nutrient deficiencies).

It is difficult to evaluate CAM therapies because they are often highly individualized. Thus, formal standards of evidence-based medicine run against the philosophy that guides CAM treatment recommendations, namely that each patient's therapeutic regimen address that person's specific problems. One patient's pain may be treated through one set of CAM therapies, whereas another patient's pain may be treated through a different set of individualized therapies.

Because many CAM therapies have not been formally evaluated, the conflict posed by these therapies is this: They are now so widely used that they have become a standard part of health care, yet when and why they work is often in question. Moreover, many of these therapies, like traditional interventions, have a placebo component, which means that the mere taking of an action can ameliorate a disorder largely by improving mental and physical adjustment to it. Of course many therapies that are now established as active treatments were once considered alternative treatments. For example, diet change (Chapter 4) and even surgery were once considered alternative medicine, but now are often well integrated into health care. This is because these treatments have been subject to the standards of evidence-based medicine, which is now the standard for making the transition from CAM to medical intervention (Committee on the Use of Complementary and Alternative Medicine, 2005).

Some CAM therapies such as massage and some forms of yoga are intrinsically enjoyable, and so asking if they "work" is akin to asking whether reading a book, gardening, or raising tropical fish "works." They don't need to work medically to have a beneficial impact on well-being. Moreover, if people feel less "stressed out" after having practiced some CAM therapies, such as meditation or guided imagery, that may be benefit enough. Overall, though, as patients insist on having more of these alternative therapies included in their treatment, as they pester their physicians and insurance companies to have CAM therapies covered, and as they expend billions of dollars on CAM therapies, the pressure to formally evaluate these treatments through more rigorous research mounts.

Thus, at present, the importance of CAM derives from the fact that millions of people worldwide use

these therapies and spend billions of dollars doing so (*The Economist,* April 2012). Moreover, more people use self-care and CAM therapies to treat themselves when they are ill than use traditional medicine (Suzuki, 2004), and millions of these people practice **integrative medicine,** that is, the combination of alternative medicine with conventional medicine. Given widespread use, the effectiveness and safety of these therapies is essential, and so continued evaluation of their effectiveness is critical (Selby & Smith-Osborne, 2013). Moreover, because some use of CAM therapies results from unmet treatment and emotional needs, these factors merit consideration in the treatment process as well.

THE PLACEBO EFFECT

Consider the following:

- Inhaling a useless drug improved lung function in children with asthma by 33 percent.
- People exposed to fake poison ivy develop rashes.
- Forty-two percent of balding men who took a placebo maintained or increased their hair growth.
- Sham knee surgery reduces pain as much as real surgery (Blakeslee, 1998, October 13).

All of these surprising facts are due to one effect—the placebo.

History of the Placebo

In the early days of medicine, few drugs or treatments gave any real physical benefit. As a consequence, patients were treated with a variety of bizarre, largely ineffective therapies. Egyptian patients were medicated with "lizard's blood, crocodile dung, the teeth of a swine, the hoof of an ass, putrid meat, and fly specks" (Findley, 1953), concoctions that were not only ineffective but dangerous. If the patient did not succumb to the disease, he or she had a good chance of dying from the treatment. Medical treatments of the Middle Ages were somewhat less lethal, but not much more effective. These European patients were treated with ground-up "unicorn's horn" (actually, ground ivory), bezoor stones (supposedly a "crystallized tear from the eye of a deer bitten by a snake" but actually an animal gallstone or other intestinal piece), theriac (made from ground-up snake and between 37 and 63 other ingredients), and, for healing wounds, powdered

This 16th-century woodcut shows the preparation of theriac, a supposed antidote to poison. If theriac was a successful treatment, it was entirely due to the placebo effect.

© INTERFOTO/Alamy

Egyptian mummy (Shapiro, 1960). As late as the 17th and 18th centuries, patients were subjected to bloodletting, freezing, and repeatedly induced vomiting to bring about a cure (Shapiro, 1960).

Such accounts make it seem miraculous that anyone survived these early medical treatments. But people did; moreover, they often seemed to get relief from these peculiar and largely ineffective remedies. Physicians have for centuries been objects of great veneration and respect, and this was no less true when few remedies were actually effective. To what can one attribute the success that these treatments provided? The most likely answer is that these treatments are examples of the **placebo effect.**

What Is a Placebo?

A **placebo** is "any medical procedure that produces an effect in a patient because of its therapeutic intent and not its specific nature, whether chemical or physical" (Liberman, 1962, p. 761). The word comes originally from Latin, meaning "I will please." Any medical procedure, ranging from drugs to surgery to psychotherapy, can have a placebo effect.

Placebo effects extend well beyond the beneficial results of ineffective substances (Stewart-Williams, 2004; Webb, Simmons, & Brandon, 2005). Much of the effectiveness of active treatments that produce real

BOX 9.6 Cancer and the Placebo Effect

A dramatic example of the efficacy of the placebo effect is provided by the case history of a cancer patient, Mr. Wright. The patient thought he was being given injections of a controversial drug, Krebiozen, about which his physician was highly enthusiastic. In fact, knowing that Krebiozen was not an effective treatment, the physician gave Mr. Wright daily injections of nothing but fresh water. The effects were astonishing:

Tumor masses melted. Chest fluid vanished. He became ambulatory and even went back to flying again. At this time he was certainly the picture of health. The water injections were continued since they worked such wonders. He then remained symptom-free for over 2 months. At this time the final AMA announcement appeared in the press—"Nationwide Tests Show Krebiozen to Be a Worthless Drug in Treatment of Cancer."

Within a few days of this report, Mr. Wright was readmitted to the hospital in extremis; his faith was now gone, his last hope vanished, and he succumbed in less than 2 days.

Source: Klopfer, 1959, p. 339.

cures on their own includes a placebo component. For example, in one study (Beecher, 1959), patients complaining of pain were injected with either morphine or a placebo. Although morphine was substantially more effective in reducing pain than was the placebo, the placebo was a successful painkiller in 35 percent of the cases. In summarizing placebo effects, A. K. Shapiro (1964) stated:

> Placebos can be more powerful than, and reverse the action of, potent active drugs. . . . The incidence of placebo reactions approaches 100% in some studies. Placebos can have profound effects on organic illnesses, including incurable malignancies. . . . Placebos can mimic the effects usually thought to be the exclusive property of active drugs. (p. 74)

How does a placebo work? People do not get better only because they think they are going to get better, although expectations play an important role (Geers, Wellman, Fowler, Rasinski, & Helfer, 2011; Webb, Hendricks, & Brandon, 2007). Nor does a placebo work simply because the patient is distracted from the condition (Buhle, Stevens, Friedman, & Wager, 2012). The placebo response is a complex, psychologically mediated chain of events that often has physiological effects. For example, if the placebo reduces a negative mood, then activation of stress systems may be reduced (Aslaksen & Flaten, 2008). Placebos may also work in part by stimulating the release of opioids, the body's natural painkillers (Levine, Gordon, & Fields, 1978).

Research that examines brain activity using fMRI (functional magnetic resonance imaging) technology reveals that when patients report reduced pain after taking a placebo, they also show decreased activity in pain-sensitive regions of the brain (Wager et al., 2004). Evidence like this suggests that placebos may work via some of the same biological pathways as "real" treatments (Lieberman et al., 2004; Petrovic, Kalso, Peterson, & Ingvar, 2002). Box 9.6 describes a case of a successful placebo effect with a cancer patient. What factors determine when placebos are most effective?

Provider Behavior and Placebo Effects

The effectiveness of a placebo varies depending on how a provider treats the patient and how much the provider seems to believe in the treatment (Kelley et al., 2009). Providers who exude warmth, confidence, and empathy get stronger placebo effects than do more remote and formal providers. Placebo effects are strengthened when the provider radiates competence and provides reassurance to the patient that the condition will improve. Taking time with patients and not rushing them also strengthens placebo effects (Liberman, 1962; Shapiro, 1964). Signs of doubt or skepticism may be communicated subtly, even nonverbally, to a patient, and these signs will reduce the effect.

Patient Characteristics and Placebo Effects

Some patients show stronger placebo effects than others. People who have a high need for approval or low self-esteem and who are persuadable in other contexts show stronger placebo effects. Anxious people

experience stronger placebo effects. This effect seems to result less from personality than from the fact that anxiety produces physical symptoms, including distractibility, racing heart, sweaty palms, nervousness, and difficulty sleeping. When a placebo is administered, anxiety may be reduced, and this overlay of anxiety-related symptoms may disappear (Sharpe, Smith, & Barbre, 1985).

Patient-Provider Communication and Placebo Effects

As previously noted, good communication between provider and patient is essential if patients are to follow through on their prescribed treatment regimens. This point is no less true for placebo responses. For patients to show a placebo response, they must understand what the treatment is supposed to do and what they need to do.

One benefit of the placebo is the symbolic value it has for the patient. When patients seek medical treatment, they want an expert to tell them what is wrong and what to do about it. When a disorder is diagnosed and a treatment regimen is prescribed, however ineffective, the patient has tangible evidence that the provider knows what is wrong and has done something about it (Shapiro, 1964).

Situational Determinants of Placebo Effects

A setting that has the trappings of medical formality (medications, machines, uniformed personnel) will induce stronger placebo effects than will a less formal setting. If all the staff radiate as much faith in the treatment as the physician, placebo effects will be heightened.

The shape, size, color, taste, and quantity of the placebo also influences its effectiveness: The more a drug seems like medicine, the more effective it will be (Shapiro, 1964). Treatment regimens that seem medical and include precise instructions produce stronger placebo effects than regimens that do not seem very medical. Thus, for example, foul-tasting, peculiar-looking little pills that are taken in precise dosages ("take two" as opposed to "take two or three") and at prescribed intervals will show stronger placebo effects than will good-tasting, candylike pills with dosage levels and intervals that are only roughly indicated ("take one or two anytime you feel discomfort"). Interestingly, changing from a branded to a generic drug appears to reduce the drug's effectiveness and increase side effects, despite no change in the active ingredients (Faasse, Cundy, Gamble, & Petrie, 2013).

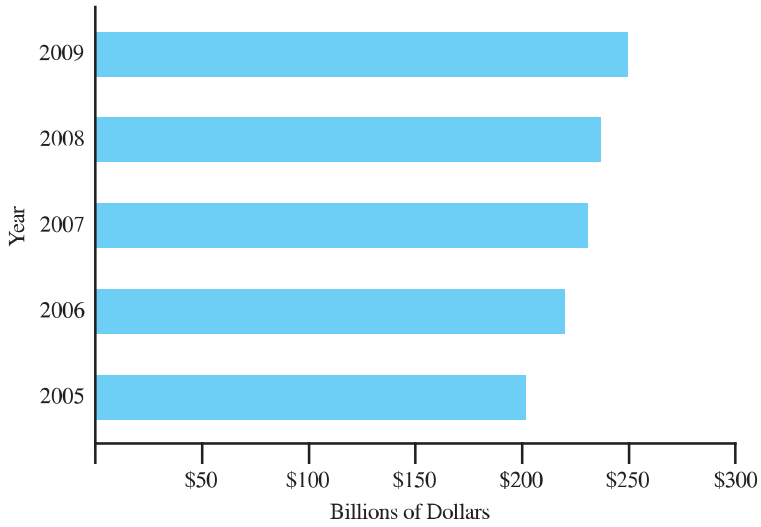
The nocebo effect refers to the fact that information about potential adverse effects of a condition or treatment may help produce those adverse effects (Colloca & Miller, 2011). The nocebo effect relies on many of the same mechanisms as placebo effects do. That is, negative expectations can influence mood and symptoms just as positive expectations do (Crichton, Dodd, Schmid, Gamble, Cundy, & Petrie, 2014). For example, one study found that exposing people to information suggesting that wind farm noise can have adverse health effects found an increase in symptoms and negative mood (Crichton et al., 2014).

Social Norms and Placebo Effects

The placebo effect is facilitated by norms that surround treatment regimens—that is, the expected way in which treatment will be enacted. Drug taking is a normative behavior. In the United States, people spend approximately $297 billion each year on prescription drugs and an additional $56.9 billion on non-durable medical products such as over-the-counter drugs (Centers for Medicare and Medicaid Services, 2015). About 40 percent of Americans use at least one prescription medication regularly, and 12 percent use three or more (National Center for Health Statistics, 2009) (Figure 9.4).

A large number of people are killed or seriously injured each year by overzealous drug taking. Forty-eight percent of people in the United States take at least one prescription drug each month and 11 percent take five or more (Gu, Dillon, & Burt, 2010). There are more than 2.5 million emergency department visits due to adverse side effects or disabilities in the United States each year (Centers for Disease Control and Prevention, October 2015), which cost hospitals at least $3 billion in longer hospital stays and other complications (Hansen, Oster, Edelsberg, Woody, & Sullivan, 2011). The more general cost to society of adverse drug reactions is estimated to be $55.7 billion a year (Centers for Disease Control and Prevention, October 2015). However, the drug-taking epidemic continues unabated. Clearly, there is enormous faith in medications, and the psychological if not the physical benefits can be quite substantial. Thus, placebos are effective in part because people believe that drugs work and because they have a great deal of experience with drug taking.

FIGURE 9.4 | Prescription Drug Spending 2005–2009
(*Source:* Centers for Medicare and Medicaid Services, 2011)



Equally important is the fact that most people have no experience that disconfirms their drug taking. If one is ill, takes a drug, and subsequently gets better, as most of us do most of the time, one does not in reality know exactly what caused this result. A drug may be responsible; the disease may have run its course; or one's mood may have picked up, altering the body's physiological balance and making it no longer receptive to an invader. Probably a combination of factors is at work. Regardless of the actual cause of success, the patient acting as his or her own naïve physician will probably attribute success to whatever drug he or she took, however erroneous that conclusion may be.

The Placebo as a Methodological Tool

The placebo response is so powerful that no drug can be marketed in the United States unless it has been evaluated against a placebo. The standard method for so doing is termed a **double-blind experiment.** In such a test, a researcher gives one group of patients a drug that is supposed to cure a disease or alleviate symptoms; another group receives a placebo. The procedure is called double-blind because neither the researcher nor the patient knows whether the patient received the drug or the placebo; both are "blind" to the procedure. Once the effectiveness of the treatment has been measured, the researcher looks in the coded records to see which treatment each patient received. The difference between the effectiveness of the drug and the effectiveness of the placebo is considered to be a measure of the drug's effectiveness (America & Milling, 2008). Comparison of a drug against a placebo is essential for accurate measurement of a drug's effect. Drugs may look four or five times more successful than they really are if there is no effort to evaluate them against a placebo (Miller, 1989). •

SUMMARY

1. Patients evaluate their health care based more on the quality of the interaction they have with the provider than on the technical quality of care.
2. But many factors can impede effective patient-provider communication. The office setting and the structure of the health care delivery system are often designed for efficient rather than supportive health care.
3. Providers contribute to poor communication by not listening, using jargon-filled explanations, alternating between overly technical explanations and infantilizing baby talk, communicating negative expectations, and depersonalizing the patient.
4. Patients contribute to poor communication by failing to learn details of their disorder and treatment, failing to give providers correct information, and failing to follow through on treatment recommendations. Patient anxiety, lack of education, and lack of experience with the disorder interfere with effective communication as well.
5. Because the provider usually receives little feedback about whether the patient followed instructions or the treatments were successful, it is difficult to identify and correct problems in communication.
6. Poor communication leads to nonadherence to treatment and, potentially, the initiation of malpractice litigation.
7. Adherence to treatment is lower when recommendations do not seem medical, when lifestyle modification is needed, when complex self-care regimens are required, and when patients hold theories about the nature of their illness or treatment that conflict with medical theories.
8. Adherence is increased when patients have decided to adhere, when they feel the provider cares about them, when they understand what to do, and when they have received clear written instructions.
9. Efforts to improve communication include training in communication skills. Patient-centered communication improves adherence. Face-to-face communication with a physician can enhance adherence to treatment because of the personalized relationship that exists.
10. The hospital is a complex organizational system buffeted by changing medical, organizational, and financial climates. Different groups in the hospital have different goals, such as cure, care, or core, which may occasionally conflict. Such problems are exacerbated by communication barriers.
11. Hospitalization can be a frightening and depersonalizing experience for patients. The adverse reactions of children in hospitals have received particular attention.
12. Information and control-enhancing interventions improve adjustment to hospitalization and to stressful medical procedures in both adults and children.
13. Nearly two-thirds of adults in the United States use complementary and alternative medicine (CAM) instead of or in conjunction with traditional medicine. The most common of these are prayer and herbal or vitamin supplements. Other common CAM therapies include meditation, yoga, massage, acupuncture, chiropracty, osteopathy, hypnosis, and guided imagery.
14. People are more likely to turn to CAM therapies if their disorders have not been successfully treated by traditional medicine. Evaluation of CAM therapies has been difficult because they are often individualized, and thus, treatment does not conform to standards required for formal evaluation using standards of evidence-based medicine.
15. Overall, the evidence for CAM therapies suggests success of certain therapies for the management of pain. For other disorders there is as yet insufficient evidence.
16. A placebo is any medical procedure that produces an effect in a patient because of its therapeutic intent and not its actual nature. Virtually every medical treatment shows some degree of placebo effect.
17. Placebo effects are enhanced when the physician shows faith in a treatment, the patient is

predisposed to believe it will work, these expectations are successfully communicated, and the trappings of medical treatment are in place.

18. Placebos are also a vital methodological tool in evaluating drugs and other treatments.

KEY TERMS

acupuncture
adherence
ayurvedic medicine
chiropractic medicine
colleague orientation
complementary and alternative medicine (CAM)
creative nonadherence
dietary supplements
double-blind experiment
guided imagery
health maintenance organization (HMO)
holistic medicine
homeopathy
hypnosis
integrative medicine
managed care
nonadherence
patient-centered care
placebo
placebo effect
preferred-provider organization (PPO)
private, fee-for-service care
Traditional Chinese Medicine
yoga