

Taylor Readings

Class 4

SYMPTOMS

Some years ago, creative puppeteer Jim Henson died abruptly in his mid-50s from an apparent cold or flu that coursed rapidly through his system. Henson had been working long hours and was run down from heavy business and travel commitments, and although he knew he should see a doctor—his symptoms were getting worse—he put it off. When he finally did check into a hospital, the infection had spread so far that doctors could not save him. Generations of children and parents who had grown up with *Sesame Street* and who had come to love Kermit the Frog, Oscar the Grouch, Big Bird, and the other endearing inventions of Henson's mind were stunned, not only by the abrupt ending to his outstanding career but by the form it took.

A few days later, my young son developed a cold and low-grade fever that proved to be surprisingly intractable. I took him to the medical center and was informed by the overworked but patient physician that my son was just fine, the infection was viral in origin, and there was nothing to do but keep him at home, give him lots of rest and fluids, and continue to administer medication on a regular basis. I felt silly and told the doctor that I had probably been a bit overzealous in coming to see him because the Jim Henson account had alarmed me so much. He smiled wearily and said, "Dr. Taylor, you are probably the 30th 'Jim Henson' mother we have seen here this week."

On the surface, the questions of who uses health services and why would seem to be a medical issue. The obvious answer is that people use services when they are sick. But as the preceding anecdote illustrates, this issue can also be psychological: When and how does a person decide that he or she is sick? When are symptoms dismissed as inconsequential? When does a person decide that a symptom requires treatment by a professional, and when do chicken soup, fluids, and bed rest seem to be all that is needed?

■ RECOGNITION AND INTERPRETATION OF SYMPTOMS

Although people have some awareness of what is going on in their bodies, that awareness may be limited. This limitation leaves a great deal of room for social and psychological factors to operate in the recognition of symptoms and the interpretation of illness (Petrie & Weinman, 1997).

Recognition of Symptoms

I have a tumor in my head the size of a basketball. I can feel it when I blink.

—Woody Allen, *Hannah and Her Sisters*

Common observation reveals that some individuals maintain their normal activities in the face of what would seem to be overwhelming symptoms, whereas others take to their beds the moment they detect any minor bodily disturbance.

Individual Differences Some of these individual differences are stable. That is, some people are consistently more likely to notice a symptom than are other people. Hypochondriacs, like many characters that Woody Allen has played, are convinced that normal bodily symptoms are indicators of illness. Although hypochondriacs represent only 4–5% of the population, because they make such extensive use of medical services, understanding who experiences symptoms more intensely is an important goal of health psychologists (Lecci & Cohen, 2002).

The most frequent symptoms that show up among patients who convert their distress into physical symptoms are back pain, joint pain, pain in the extremities, headache, abdominal symptoms such as bloating, "allergies" to particular foods, and cardiovascular symptoms such as palpitations (Carmin, Weigartz, Hoff, & Kondos, 2003; Rief, Hessel, & Braehler, 2001). Contrary to stereotypes, women are not more likely than men to report these symptoms. But there are pronounced age effects, with older people reporting more symptoms than young people.

Neuroticism also affects the perception of symptoms. Neuroticism is a pervasive dimension of personality marked by negative emotions, self-consciousness, and a concern with bodily processes. People who are high in neuroticism recognize their symptoms more quickly, report their symptoms more quickly, or both (Feldman, Cohen, Doyle, Skoner, & Gwaltney, 1999), and they often erroneously believe they have serious diseases. It may be that neurotic, anxious people exaggerate their symptoms, or they may simply be more attentive to real symptoms (Gramling, Clawson, & McDonald, 1996; Ward & Leventhal, 1993).

Cultural Differences There are reliable cultural differences in how quickly and what kind of symptoms are detected (Kirmayer & Young, 1998). For example, in a comparative study of Anglos and Mexicans,

M. A. Burnam and colleagues (Burnam, Timbers, & Hough, 1984) found that Anglos reported symptoms that occurred infrequently (such as a new pain), but Mexicans reported symptoms that occurred frequently (such as diarrhea). Cultural differences in symptom experience and reporting have been recognized for decades (Zola, 1966), but as yet, the reasons underlying these differences are not fully understood.

Attentional Differences Attentional differences influence the experience of symptoms. People who are focused on themselves (their bodies, their emotions, and their reactions in general) are quicker to notice symptoms than are people who are focused externally, on their environment and activities (Pennebaker, 1983). Thus, people who hold boring jobs, who are socially isolated, who keep house for a living, or who live alone report more physical symptoms than do people who have interesting jobs, who have active social lives, who work outside the home, or who live with others. One possible reason is that these latter people experience more distractions and attend less to themselves than do those people who have little activity in their lives (Pennebaker, 1983).

Situational Factors Situational factors influence whether a person will recognize a symptom. A boring situation makes people more attentive to symptoms than does an interesting situation. For example, people are more likely to notice itching or tickling in their throats and to cough in response to the sensations during boring parts of movies than during interesting parts (Pennebaker, 1980). A symptom is also more likely to be perceived on a day when a person is at home than on a day full of frenzied activity. Intense physical activity takes attention away from symptoms, whereas quiescence increases the likelihood of their recognition.

Any situational factor that makes illness or symptoms especially salient promotes their recognition. For example, a common phenomenon in medical school is **medical students' disease**. As they study each illness, many medical students imagine that they have it. Studying the symptoms leads the students to focus on their own fatigue and other internal states; as a consequence, symptoms consistent with the illness under study seem to emerge (Mechanic, 1972).

Stress Stress can precipitate or aggravate the experience of symptoms. People who are under stress may believe that they are more vulnerable to illness and so attend more closely to their bodies. Financial strain,

disruptions in personal relationships, and other stressors lead people to believe that they are ill (Alonso & Co, 2001; Angel, Frisco, Angel, & Chiriboga, 2003), perhaps because they experience stress-related physiological changes, such as accelerated heartbeat or breathing and interpret these changes as symptoms of illness (Cameron, Leventhal, & Leventhal, 1995).

Mood Mood influences self-appraised health. People who are in a good mood rate themselves as more healthy, report fewer illness-related memories, and report fewer symptoms. People in a bad mood, however, report more symptoms, are more pessimistic that any actions they might take will relieve their symptoms, and perceive themselves as more vulnerable to future illness than do people in good moods (Leventhal, Hansell, Diefenbach, Leventhal, & Glass, 1996). Even people who have diagnosed illnesses report fewer or less serious symptoms when they are in a good mood (Gil et al., 2004).

In summary, then, symptom recognition is determined both by individual differences in attention to one's body and by transitory, situational factors that influence the direction of one's attention. When attention is directed outward, as by vigorous physical activity or a highly distracting environment, symptoms are less likely to be noticed. But when attention is directed toward the body, as by cues that suggest illness, symptoms are more likely to be detected.

Interpretation of Symptoms

The interpretation of symptoms is also a heavily psychological process. Consider the following incident. At a large metropolitan hospital, a man in his late 20s came to the emergency room with the sole symptom of a sore throat. He brought with him six of his relatives: his mother, father, sister, aunt, and two cousins. Because patients usually go to an emergency room with only one other person, and because a sore throat is virtually never seen in the emergency room, the staff were understandably curious about the reason for his visit. There was much chuckling about how Italian families stick together and how they panic at any sign of a disturbance in health. But one particularly sensitive medical student reasoned that something more must have caused the man to come to the emergency room with his entire family in tow, so he probed cautiously but persistently during the intake interview with the patient. Gradually, it emerged that the young man's brother had died a year earlier of Hodgkin disease, a form of cancer that involves the progressive

Can Expectations Influence Sensations? The Case of Premenstrual Symptoms

Many women experience a variety of unpleasant physical and psychological symptoms just before the onset of menstruation, including swollen breasts, cramping, irritability, and depression. These symptoms clearly have a physiological basis, but research indicates that psychological factors may contribute as well. Specifically, it may be that women experience these symptoms more intensely because they *expect* to experience them (McFarland, Ross, & DeCourville, 1989; Ruble, 1972).

To test this idea, D. N. Ruble (1972) recruited a number of women to participate in a study. She told them she was using a new scientific technique that would predict their date of menstruation. She then randomly told participants that the technique indicated either that their period was due within the next day or two (premenstrual group) or that their period was not due for 7–10 days (intermenstrual group). In fact, all the women were approximately a week from their periods. All the women were then asked to complete a questionnaire indicating

infection and enlargement of the lymph nodes. The brother's first symptom had been a sore throat, which he and the family had allowed to go untreated.

This poignant incident illustrates how important social and psychological factors can be in understanding people's interpretations of their symptoms and their decisions to seek treatment (Frostholm et al., 2005a). To this family, the symptom "sore throat" had special significance. It had a history for them that overrode its usual association with the beginnings of a cold (which is, in fact, what the young man turned out to have). Moreover, it symbolized for them a past failure of the family to respond adequately to an emergency, a failure that they were determined not to repeat. What this incident also illustrates, albeit in a less direct way, is that individual, historical, cultural, and social factors all influence the interpretation of the symptom experience.

Prior Experience As the preceding incident attests, the interpretation of symptoms is heavily influenced by prior experience. People who have experience with a medical condition estimate the prevalence of their symptoms to be greater and often regard the condition as less serious than do people with no history of the condition (Jemmott, Croyle, & Ditto, 1988). A symp-

tom's meaning is also influenced by how common it is within a person's circle of acquaintances or culture (Croyle & Hunt, 1991). Highly prevalent risk factors and disorders are generally regarded as less serious than are rare or distinctive risk factors and disorders (Croyle & Ditto, 1990). The very fact that the symptom or condition is widespread may be seen as a reason for attaching little significance to it.

the extent to which they were experiencing symptoms typically associated with the premenstrual state.

The women who were led to believe that their period was due within the next day or two reported more of the psychological and physiological symptoms of premenstruation than did women who were told their periods were not due for 7–10 days. Of course, the results of this study do not mean that premenstrual symptoms have no physical basis. Indeed, the prevalence and seriousness of premenstrual syndrome (PMS) bears testimony to the debilitating effect that premenstrual bodily changes can have on physiological functioning and behavior (Kendler et al., 1992; Klebanov & Jemmott, 1992). Rather, the results suggest that women who believe themselves to be premenstrual may be more attentive to and reinterpret naturally fluctuating bodily states as consistent with the premenstrual state. Such research findings also illustrate the significance of psychological factors in the experience of symptoms more generally.

Expectations Expectations influence the interpretation of symptoms. People may ignore symptoms they are not expecting and amplify symptoms they do expect (Leventhal, Nerenz, & Strauss, 1982). For example, women who believe they are close to their menstrual periods may interpret otherwise vague sources of discomfort as premenstrual symptoms; women who believe their periods are several days away may ignore the same "symptoms" (Box 8.1).

Seriousness of the Symptoms Symptoms that affect highly valued parts of the body are usually interpreted as more serious and as more likely to require attention than are symptoms that affect less valued organs. For example, people are especially anxious when their eyes or face are affected, but less so if the symptom

involves part of the trunk. A symptom will be regarded as more serious and will prompt the seeking of treatment if it limits mobility or if it affects a highly valued organ, such as chest discomfort thought to be indicative of heart disease (Eifert, Hodson, Tracey, Seville, & Gunawardane, 1996). Above all, if a symptom causes pain, it will lead a person to seek treatment more promptly than if it does not cause pain.

Cognitive Schemas or Representations of Illness

Representations People have concepts of health and illness that influence how they react to symptoms (Henderson, Hagger, & Orbell, 2007; Leventhal, Weinman, Leventhal, & Phillips, 2008). Termed **illness representations** or **schemas**, these organized conceptions of illness are acquired through the media, through personal experience, and from family and friends who have had experience with particular disorders (see Croyle & Barger, 1993, for a review).

Illness schemas range from being quite sketchy and inaccurate to being extensive, technical, and complete. Their importance stems from the fact that they lend coherence to a person's comprehension of the illness experience (Hall, Weinman, & Marteau, 2004). As such, they can influence people's preventive health behaviors, their reactions when they experience symptoms or are diagnosed with illness, their adherence to treatment recommendations, and their expectations for their future health (Rabin, Leventhal, & Goodin, 2004).

Illness schemas include basic information about an illness (Leventhal et al., 2008). The *identity*, or label, for an illness is its name; its *consequences* are its symptoms and the treatments that result, as well as the extent to which the person believes the illness has ramifications for his or her life; its *causes* are the factors that the person believes gave rise to the illness, such as environmental or behavioral factors; *duration* refers to the length of time the illness is expected to last; and *cure* identifies whether the person believes the illness can be cured through appropriate treatment. These illness conceptions appear to develop quite early in life (Goldman, Whitney-Saltiel, Granger, & Rodin, 1991).

Most people have at least three models of illness (Leventhal et al., 2008):

- *Acute illness* is believed to be caused by specific viral or bacterial agents and is short in duration, with no long-term consequences. An example is the flu.
- *Chronic illness* is believed to be caused by multiple factors, including health habits, and is long in duration, often with severe consequences. An example is heart disease.
- *Cyclic illness* is marked by alternating periods during which there are either no symptoms or many symptoms. An example is herpes.

There is considerable variability in the disease models that people hold for their disorders, and the disease model a person holds can greatly influence her or his behavior related to that disease. For example, diabetes may be seen by one individual as an acute condition caused by a diet high in sugar, whereas another person with the same disease may see it as a genetic condition lasting for the rest of his or her life, with potentially catastrophic consequences. Not surprisingly, these people will treat their disorders differently, maintain different levels of vigilance toward symptoms, and show different patterns of seeking treatment (Lange & Piette, 2006; Weinman, Petrie, Moss-Morris, & Horne, 1996). People's conceptions of disease give them a basis for interpreting new information, influence their treatment-seeking decisions, lead them to alter or fail to adhere to their medication regimens (Coutu, Dupuis, D'Antonio, & Rochon-Goyer, 2003), and influence expectations about future health (Bishop & Converse, 1986). Which conception of disease an individual holds, then, determines health behaviors in important ways.

Lay Referral Network

The meaning of a symptom ultimately blends into diagnosis, a process that begins not in the physician's office but in an individual's conversations with friends, neighbors, and relatives. Sociologists have written at length about the **lay referral network**, an informal network of family and friends who offer their own interpretations of symptoms well before any medical treatment is sought (Freidson, 1961). The patient may mention the symptoms to a family member or coworker, who may then respond with personal views of what the symptom is likely to mean ("George had that, and it turned out to be nothing at all") (Croyle & Hunt, 1991). The friend or relative may offer advice about the advisability of seeking medical treatment ("All he got for going to see the doctor was a big bill") and recommendations for various home remedies ("Lemon and tequila will clear that right up").

In many communities, the lay referral network is the preferred mode of treatment. A powerful lay figure, such as an older woman who has had many children,

may act as a lay practitioner; because of her years of experience, she is assumed to have personal wisdom in medical matters (Freidson, 1961; Hayes-Bautista, 1976). Within ethnic communities, the lay referral network will sometimes incorporate beliefs about the causes and cures of disease that would be regarded as supernatural or superstitious by traditional medicine. In addition, these lay referral networks often recommend home remedies regarded as more appropriate or more effective than traditional medicine.

Complementary and Alternative Medicine

The use of complementary and alternative medicine (CAM), which builds on this tradition, is on the rise worldwide. As a consequence, the United Nations World Health Organization (WHO) has recently taken the unprecedented step of evaluating the efficacy of these treatments (McNeil, 2002). For example, the Chinese herb *ma huang* helps breathing problems that can cause heart attacks and stroke in some individuals. *Ginkgo biloba* stimulates circulation but can also enhance bleeding, which is risky during surgery. The goal of the WHO is to catalogue all CAM remedies to identify those that are both successful and not risky and to reduce or eliminate use of those that are unsuccessful or risky.

As many as one in three American adults may use an alternative or complementary therapy during the course of a year (Eisenberg et al., 1993), producing an estimated 425 million visits to providers of these therapies and approximately \$13.7 billion in costs (Astin, 1998). What therapies are people using? Most commonly, alternative and complementary therapies include relaxation techniques, chiropractic, massage, imagery, spiritual healing, diets, herbal medicines, megavitamin therapy, self-help groups, energy healing, biofeedback, hypnosis, homeopathy, and acupuncture. As the terminology implies, not all of these therapies are used as alternatives to formal treatment; many are used in conjunction with conventional therapy. But health care providers are often unaware that their patients are supplementing their care with complementary therapies, which can be risky.

Some CAM remedies do work, of course, and simple rest or relaxation can allow an illness to run its course as well. These cures help to perpetuate the use of CAM, and consequently, much illness is never formally treated within the medical community. At any given time, 70–90% of the population has a medical condition that could be diagnosed and treated by a health care provider, but 66–75% of those people choose not to consult one.

The Internet

The Internet may well constitute a lay referral network of its own. On a typical day, more than 6 million Americans will look for health care information online (Center for the Advancement of Health, December 2002). Indeed, the amount of health information on the Internet has mushroomed in recent years, with more than 100,000 health-related websites currently in existence (Center for the Advancement of Health, June 2002). Seeking health information online is one of the most common Internet activities. Sixty-one percent of Internet users report that they have used the Internet to find health information—more than those who shop, get sports scores, or buy stocks. Moreover, more than half the people who have gone online to find health information say it improved the way they took care of themselves (Dias et al., 2002).

Are these trends worrisome? According to a recent study of physicians, 96% said they believe that the Internet will affect health care positively, and many turn to the Internet themselves for the most up-to-date information on illnesses, treatments, and the processing of insurance claims. Nonetheless, some of what is on the Internet is not accurate (Kalichman et al., 2006), and people who use the Web to get information about their illness sometimes get worse (Gupta, 2004). Some health-related Internet sites simply want users to fill a shopping cart with their products. One excellent source of health-related issues is the Center for Advancement of Health website (www.cfah.org). It is evident that the Internet is playing an increasingly major role in providing the information that people get about symptoms, illnesses, and potential cures.

■ WHO USES HEALTH SERVICES?

Just as illness is not evenly distributed across the population, neither is the use of health services. Although the presence of atypical symptoms, a serious illness, or disability are the main reasons that people seek help (Cameron, Leventhal, & Leventhal, 1993; Johnson & Wolinsky, 1993), other factors are important as well.

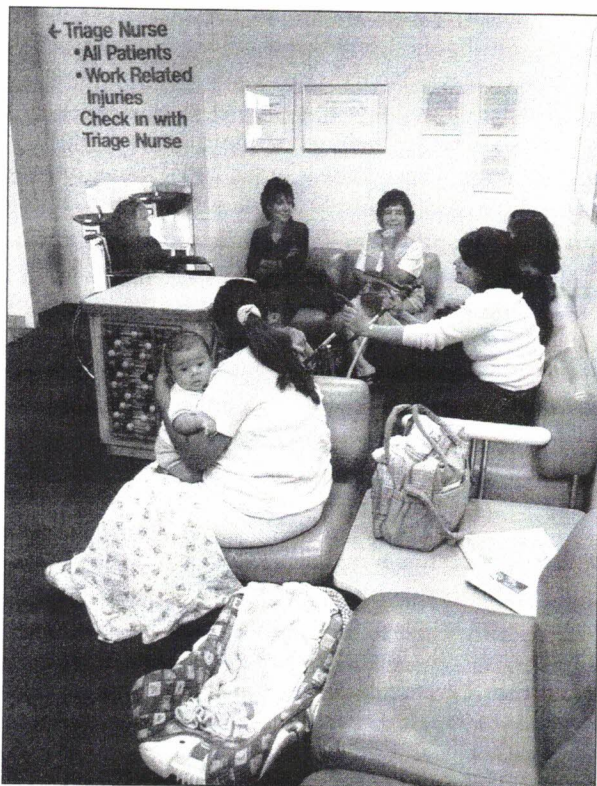
Age

Age influences the use of health care services. The very young and the elderly use health services most frequently (Meara, White, & Cutler, 2004). Young children develop a number of infectious childhood diseases as they

are acquiring their immunities; therefore, they frequently require the care of a pediatrician. Both illness frequency and the use of services decline in adolescence and throughout young adulthood. Use of health services increases again in late adulthood, when people begin to develop chronic conditions and diseases. The elderly use services for a variety of disorders related to the aging process.

Gender

Women use medical services more than do men (Fuller, Edwards, Sermsri, & Vorakitphokatorn, 1993). Pregnancy and childbirth account for much of the gender difference in health services use, but not all. Various explanations have been offered, including, for example, the fact that women have better homeostatic mechanisms than men do: They report pain earlier, experience temperature changes more rapidly, and detect new smells



Women use medical services more than men, they may be sick more than men, and their routine care requires more visits than men's. It is often easier for women to use services, and they require services for such gender-related needs as maternity care.

faster. Thus, they may also be more sensitive to bodily disruptions, especially minor ones (Leventhal, Diefenbach, & Leventhal, 1992).

Another possible explanation stems from the different social norms for men and women regarding the expression of pain and discomfort. Men are expected to project a tough, macho image, which involves being able to ignore pain and not give in to illness, whereas women are not subject to these same pressures (Klonoff & Landrine, 1992).

Economic factors may also be important. Because more women are part-time workers and nonworkers, they do not have to take time off from work to seek treatment, and they do not lose income when they are ill. Consequently, women may use health services more often because seeking treatment for illness disrupts their lives less and costs them less (Marcus & Siegel, 1982). However, the same factors—namely, that women are less likely to be employed, are more likely to work part-time, and are more likely to experience more economic hardship—also contribute to women's poorer health (Ross & Bird, 1994).

Research suggests that women use health care services more often because their medical care is more fragmented. Medical care for most men involves a trip to a general practitioner for a physical examination that includes all-preventive care. But women may visit a general practitioner or internist for a general physical, a gynecologist for Pap tests, and a breast cancer specialist or mammography service for breast examinations and mammograms. Thus, women may use services more often than men, in part because the medical care system is not particularly well structured to meet their basic needs.

Social Class and Culture

The lower social classes use medical services less than do the more affluent social classes (Adler, Marmot, McEwen, & Stewart, 1999), in part because the poorer classes have less money to spend on health services. However, with Medicare for the elderly, Medicaid for the poor, and other inexpensive health services, the gap between medical service use by the rich and by the poor has narrowed somewhat.

The disadvantaged financial position of the lower classes is not the only reason for their low use of services; there simply are not as many high-quality medical services available to the poor as to the well-to-do, and what services there are, are often inadequate and understaffed (Kirby & Kaneda, 2005). Consequently, many poor

people receive no regular medical care at all and see physicians only on an emergency basis. The social-class differences in the use of health services are particularly problematic because not only are the poor sick more often and for longer periods than are the well-to-do, but they die earlier (Adler, Boyce, Chesney, Folkman, & Sync, 1993). The biggest gap between the rich and the poor is in the use of preventive health services, such as inoculations against disease and screening for treatable disorders, which lays the groundwork for poorer health across the life span.

Cultural factors influence whether a person seeks formal treatment. As already noted, people who live in ethnic neighborhoods may hold beliefs about illness that do not correspond to the beliefs of the medical profession, which can lead those people to use a lay referral system of care instead.

Social Psychological Factors

Social psychological factors—that is, an individual's attitude toward and beliefs about symptoms and health services—influence who uses health services. As we saw in Chapter 3, the health belief model maintains that whether a person seeks treatment for a symptom can be predicted based on two factors: the extent to which the person perceives a threat to health and the degree to which he or she believes that a particular health measure will be effective in reducing that threat. Studies suggest that the health belief model explains people's use of services quite well. But the model does a better job of explaining the treatment-seeking behavior of people who have money and access to health care services than of people who do not.

The use of health care services is influenced by socialization—chiefly, by the actions of one's parents. Just as children and adolescents learn other behaviors from their parents, they also learn when and how to use health care services.

Other factors that lead people to seek treatment are interpersonal. For example, an interpersonal crisis may be set off when a symptom threatens a relationship (Zola, 1973). If one member of a couple is always tired, the partner eventually will become annoyed and insist that the other do something about the constant fatigue. Social interference is also a trigger for seeking help. When valued activities or social demands, such as a job or vacation, are threatened by a symptom, a person is more likely to seek prompt treatment than if no such threat is posed. Finally, social sanctioning, as when an employer applies pressure on a symptomatic individual

to seek treatment or return to work, can lead to using health services.

Health services, then, are used by people who have the need, time, money, prior experience, beliefs that favor the use of services, and access to services (Andersen, 1995).

■ MISUSING HEALTH SERVICES

Jerry rolled over when the alarm went off and realized that it was time to get ready to go to work. He'd been up late the night before playing cards with some friends, and as a result, he'd had only about 4 hours of sleep. As he thought about his assembly line job, the prospect of getting dressed and going to work on time seemed less and less attractive. As he swallowed, he noticed some tingling sensations in his throat. It could have been too many cigarettes, or maybe he was coming down with a cold. He thought, "If I call in sick today and just spend some time resting, I'll be in better shape for the rest of the week." Having rationalized his situation, Jerry went back to bed.

Health services may be abused as well as used. In this section, we consider several types of abuse. Some abuse is mild, such as Jerry's decision to sleep off a late night instead of going to work. But in other cases, abuse is more serious. One type of abuse occurs when people seek out health services for problems that are not medically significant, overloading the medical system. Another type of abuse involves delay, when people should seek health care for a problem but do not.

Using Health Services for Emotional Disturbances

Physicians estimate that as much as two-thirds of their time is taken up by patients whose complaints are psychological rather than medical. This problem is more common for general practitioners than for specialists, although no branch of medicine is immune. (College health services periodically experience a version of this phenomenon during exam time; see Box 8.2.) These nonmedical complaints often stem from anxiety and depression, both of which, unfortunately, are widespread (Franko et al., 2005). Unfortunately, such symptoms can also lead to unnecessary treatments (Salmon, Humphris, Ring, Davies, & Dowrick, 2006).

Why do people seek a physician's care when their complaints should be addressed by a mental health specialist? There are several reasons (Henningsen, Zimmermann, & Sattel, 2003; Rief, Martin, Klaiberg,

THE PLACEBO AS A HEALER

Consider the following:

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

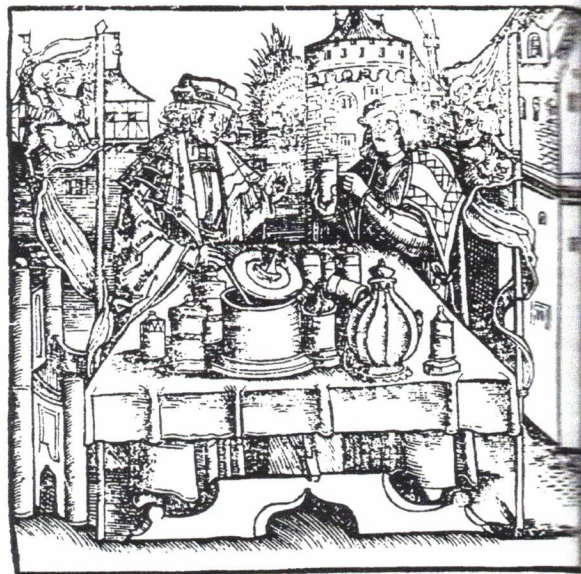
All of these surprising facts are due to one effect—the placebo.

Historical Perspective

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 equally exotic ingredients), and, for healing wounds, powdered Egyptian mummy (Shapiro, 1960).

In some cases, a clear, if somewhat naïve, logic was present in these treatments. For example, consumption (tuberculosis of the lung, which is marked by short-windedness) was treated with ground-up fox lung because the fox is a long-winded animal. 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



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.

these treatments provided? The most likely answer is that these treatments are examples of the **placebo effect**. Placebo effects continue to be powerful today, even though medicine now boasts a large number of truly effective treatments.

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” (Lieberman, 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. The role of placebos in reducing pain and discomfort is substantial. Many patients who ingest useless substances or who undergo useless procedures find that, as a result, their symptoms disappear and their good health returns.

Moreover, 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 cures on their own include 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

dramatic example of relief provided by the placebo. Wright. The patient's expectations of a cure, which his physician was knowing that Krebioz, the physician gave M... that fresh water. T...

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How does a plac... mostly psychological... have. That is, people... think they are going t... of success play an i... (2004). The placebo... ally mediated chain... al effects. For exam... then activation of st... may also work ir... towards the body's n... (Fields, 1978). Exc... main activity using... nance imaging) tech... report reduced pain... show decreased activ... main (Wager et al.,... that placebos may wo

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 two 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.

effective in reducing pain than was the placebo, the placebo was a successful painkiller in 35% of the cases. Another study demonstrated that morphine loses as much as 25% of its effectiveness in reducing pain when patients do not know they have been injected with a painkiller and are therefore not preinclined to experience the drug's effects. 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? The placebo effect is not purely psychological, as stereotypes would have us believe. That is, people do not get better only because they think they are going to get better, although expectations of success play an important role (Stewart-Williams, 2004). The placebo response is a complex, psychologically mediated chain of events that often has physiological effects. For example, if the placebo reduces anxiety, then activation of stress systems may be reduced. Placebos may also work in part by stimulating the release of opioids, the body's natural painkillers (Levine, Gordon, & Fields, 1978). Exciting recent 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 that account for the effects of "real" treatments (Lieberman et al., 2004; Petrovic, Kalso, Peterson, & Ingvar, 2002). Box 10.5 describes a case of a successful placebo effect with a cancer patient.

In some cases, a placebo produces an apparently successful recovery, whereas in other cases, it has no effect. What factors determine when placebos are most effective?

Provider Behavior and Placebo Effects

The effectiveness of a placebo varies depending on how a provider interacts with the patient and how much the provider seems to believe in the curative powers of the treatment being offered. Providers who exude warmth, confidence, and empathy get stronger placebo effects than do more remote and formal providers. Placebo effects are also strengthened when the provider radiates competence and provides reassurance to the patient that the condition will improve. In addition, taking time with patients and not rushing them strengthens placebo effects (Lieberman, 1962; Shapiro, 1964).

The provider's faith in the treatment increases the effectiveness of placebos (Roberts, Kewman, Mercier, & Hovell, 1993). Signs of doubt or skepticism may be communicated subtly, even nonverbally, to a patient, and these signs will reduce the effect. Even clearly effective drugs will lose much of their effectiveness when providers express doubts over their effectiveness. In one study, for example, patients were given chlorpromazine (a tranquilizer commonly used with psychiatric patients) by a provider who either expressed great confidence in its effectiveness or voiced some doubt as to its ability to reduce symptoms. This usually effective drug's actual

effectiveness dropped from 77% to 10% when the provider was doubtful regarding its effectiveness (Feldman, 1956; see also Volgyesi, 1954).

Patient Characteristics and Placebo Effects

Although there is no placebo-prone personality, some types of patients show stronger placebo effects than others. People who have a high need for approval or low self-esteem and who are persuasible in other contexts show stronger placebo effects. Anxious people experience stronger placebo effects. This effect seems to result less from personality, however, 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 (Shapiro, 1964; see also Sharpe, Smith, & Barbre, 1985).

Despite the fact that some personality differences do predict placebo effects, these findings must be set in the context of many dozens of studies that have failed to show effects. Sex, age, hypochondriasis (the tendency to report physical symptoms), dependency, and general neuroticism do not distinguish those who show placebo effects from those who do not. Likewise, results on personality tests, such as the MMPI or the Rorschach (inkblot) test, do not predict who will show a placebo response (for reviews, see Liberman, 1962; Shapiro, 1964).

Patient-Provider Communication and Placebo Effects

As noted in Chapter 9, 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. When the provider-patient relationship is based on effective communication, placebo effects will be stronger.

Another aspect of the patient-provider relationship that enhances the placebo effect is the symbolic value the placebo may have 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

The characteristics of the placebo itself and the setting in which it is administered influence the strength of the placebo response. 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). Thus, for example, foul-tasting, peculiar-looking little pills that are taken in precise dosages ("take two" 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 anytime you feel discomfort"). Similarly, treatment regimens that seem medical and include precise instructions, medications, and the like will produce stronger placebo effects than will regimens that do not seem very medical. For example, exercise prescriptions and dietary restrictions show weaker placebo effects than do pills and other medications.

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 clearly a normative behavior (see Sharpe et al., 1985). In the United States, people spend approximately \$190 billion each year on prescription drugs (National Center for Health Statistics, 2006a), and an additional \$532 million on over-the-counter drugs. About 40% of Americans use at least one prescription medication regularly, and 17% use three or more (Colvin, 2004) (Figure 10.3).

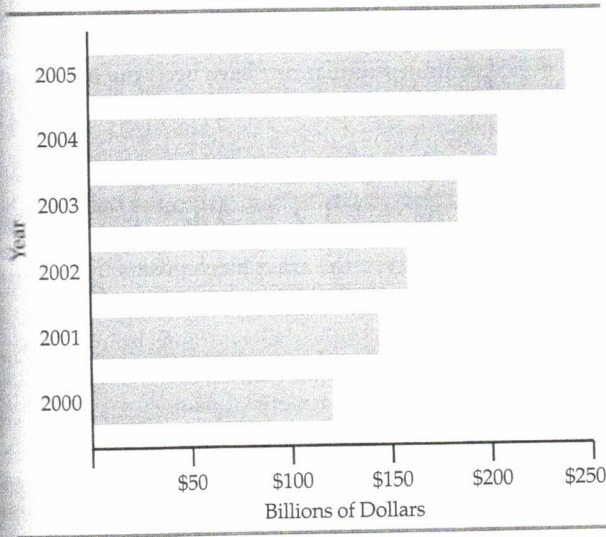
A large number of people are killed or seriously injured each year by overzealous drug taking. There are more than 2 million adverse side effects or disabilities in the United States each year (Center for Drug Evaluation and Research, 2002), which cost hospitals at least \$1.5 billion in longer hospital stays and other complications. The more general cost to society of adverse drug reactions is estimated to be \$47 billion a year (Bales et al., 1997).



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FIGURE 10.3 | Prescription Drug Spending 2000–2005 (Source: U.S. Department of Health and Human Services, 2007.)



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 in drug taking (Roberts et al., 1993).

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.

Generalizability of Placebo Effects

As noted earlier, virtually any medical procedure can have placebo effects (Miller, 1989). For example, many

surgical patients show improvement simply as a function of having had surgery and not as a result of the actual procedure employed (Stolberg, 1999a). Psychiatry and clinical psychology also show placebo effects; some patients feel better simply knowing that a psychiatrist or psychologist has found a cause for their problems, even if this cause is not the real one. Adherence to a placebo can even be associated with lower death rates due to illness (Irvine, Baker et al., 1999).

The efficacy of the placebo should not be thought of as either a medical trick or a purely psychological response on the part of the patient. Placebo effects merit respect. The placebo achieves success in the absence of truly effective therapy (Roberts et al., 1993). It increases the efficacy of a therapy that has only modest effects of its own, and it reduces substantial pain and discomfort. It is the foundation of most of early medicine's effectiveness, and it continues to account for many of medicine's effects today. Its continued success should be encouraged.

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 half a group of patients a drug that is supposed to cure a disease or alleviate symptoms; the other half 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. 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; Shapiro, 1964). ●