



CHAPTER 2

# Culture, Behavior, and Health

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*"If you wish to help a community improve its health, you must learn to think like the people of that community. Before asking a group of people to assume new health habits, it is wise to ascertain the existing habits, how these habits are linked to one another, what functions they perform, and what they mean to those who practice them" (Paul, 1955, p. 1).*

People around the world have beliefs and behaviors related to health and illness that stem from cultural forces as well as individual experiences and perceptions. A 16-country study of community perceptions of health, illness, and primary health care found that in all 42 communities studied, people used both the Western biomedical system and indigenous practices, including indigenous practitioners. Also, there were discrepancies between which services the governmental agencies said existed in the community and what was really available. Due to positive experiences with alternative healing systems and shortcomings in the Western biomedical system, people relied on both (Nichter, 2008; Scrimshaw, 1992). In recognition of the widespread use of nonbiomedical therapies, the U.S. National Institutes of Health established a center for the study of alternative and complementary medicine, which is now called the National Center for Complementary and Integrative Health (NCCIH, 2014). With a yearly budget of \$124.1 million, the NCCIH's mandate is to provide research evidence of efficacy for nonbiomedical treatments, such as acupuncture, herbal preparations, meditation, and spiritual healing. The popularity of complementary

and integrative approaches was demonstrated by a U.S. nationwide survey, demonstrating that 33.2% of adults used such treatments (NCCIH, 2017). The global importance of those approaches is evidenced by the World Health Organization's (WHO) major report, *WHO Traditional Medicine Strategy 2014–2023*, and the establishment of 21 regional centers for the study of traditional medicine to strengthen the evidence base and promote quality.

In the past three decades, we have moved from rejecting traditional health beliefs and practices to understanding that culturally rooted, traditional healing approaches are valued and used, often in combination with biomedicine. At this time there is increasing recognition that such approaches can and should be rigorously evaluated. Nevertheless, appreciation for cultural knowledge and behaviors in the planning and execution of health programs often falls short of the mark. Experience has shown that when health programs fail to recognize and work with indigenous beliefs and practices, they also fail to reach their goals. Similarly, research to plan and evaluate health programs must take cultural beliefs and behaviors into account if researchers expect to understand why programs are not working and determine what to do about it.

This chapter draws on the social sciences—particularly, anthropology, psychology, and sociology—to examine the cultural and behavioral parameters that are essential to understanding global health efforts. It complements the *Understanding and Acting on Social Determinants of Health and Health Equity*

chapter, which covers social, political, and economic forces that affect health, but does not go deeply into the cultural components of health. This chapter begins with some key concepts from the field of anthropology and the subfield of medical anthropology. It continues with brief descriptions of the various types of health belief systems and healers around the world. Next, some key theories of health behavior and behavioral and cultural change are described and discussed. Issues of health literacy and health communication are then addressed, along with the myriad health promotion strategies available. Methodological issues are presented, followed by a case study of acquired immunodeficiency syndrome (AIDS) and a commentary on the international efforts to curb the Ebola virus pandemic in West Africa. Another case study examines the use of rapid assessment methods to guide the introduction of an improved nutritional cereal for infants and children in Ghana. The chapter concludes by summarizing how all of these areas need to be considered in global health efforts.

## ► Basic Concepts from Medical Anthropology

Health and illness are defined, labeled, evaluated, and acted upon in the context of culture. In the nineteenth century, anthropologist Edmund Tyler (1871) defined culture as “that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities acquired by man as a member of society.” Since those early days of anthropology, there have been literally hundreds of definitions of culture, but most have the following concepts in common (Board on Neuroscience and Behavioral Health, 2002):

- Shared ideas meanings and values
- Socially learned, not genetically transmitted
- Patterns of behavior that are guided by these shared ideas, meanings, and values
- Often exists at an unconscious level
- Constantly modified through “lived experiences”

The last of these concepts—*lived experiences*—comprises the experiences that people (and sometimes groups of people) go through as they live their lives. These experiences modify their culturally influenced beliefs and behaviors (Garro, 2000; Mattingly & Garro, 2000). As a consequence, culture is not static on either the group or the individual level; rather, people are constantly changing. This concept allows for cultural change as people migrate to a new setting (community, region, or country), as people acquire additional

education and experiences, and as conditions change around them (e.g., armed conflicts, economic changes in a country or region, political changes). This is a helpful viewpoint when looking at cultural change on both individual and group levels.

Medical anthropologists observe different cultures and their perspectives on disease and illness. For example, they look at the biological and the ecological aspects of disease, the cultural perspectives, and the ways in which cultures approach prevention and treatment.

## Insider Versus Outsider Perspectives

To understand the cultural context of health, it is essential to work with several key concepts. First, the concepts of insider and outsider perspectives are useful for examining when we are seeing things from our point of view and when we are trying to understand someone else’s view of things. The insider perspective (*emic*, in anthropological terminology) shows the culture as viewed from within. It refers to the meaning that people attach to things from their cultural perspective. For example, the view that worms (*Ascaris*) in children are normal and are caused by eating sweets is a perspective found within some cultures. The outsider perspective (*etic*, in anthropological terminology) refers to the same thing as seen from the outside. Rather than meaning, it conveys a structural approach, or something as seen without understanding its meaning for a given culture. The outsider perspective can also convey an outsider’s meaning attached to the same phenomenon. For example, this view might hold that *Ascaris* infection is contracted through eggs in contaminated soil or foods contaminated by contact with that soil; the eggs get into the soil through fecal wastes from infected individuals. The concepts of insider and outsider perspectives allow us to look at health, illness, and prevention and treatment systems from several vantage points; to analyze the differences between these perspectives; and to develop approaches that will work within a cultural context (Scrimshaw & Hurtado, 1987).

To continue the example, in Guatemalan villages where the previously mentioned insider beliefs about *Ascaris* prevailed, researchers learned that some mothers believed that worms are normal and are not a problem unless they become agitated. In their view, worms live in a bag or sac in the stomach and are fine while so confined. Agitated worms get out and appear in the feces or may be coughed up. Mothers also believed that worms are more likely to become agitated during the rainy season, because the thunder and lightning frighten them. From an outsider perspective, this relationship makes sense: Sanitation is

more likely to break down in the rainy season, so there is more chance of infection and more diarrheal disease, which will reveal the worms.

The dilemma for the health workers, in the Guatemalan worms example, was to get the mothers to accept deworming medication for their children, because most of the time worms were perceived as normal. If the health workers tried to tell the mothers that their beliefs were wrong, the mothers would reason that the health workers did not understand illness in a Guatemalan village and would reject their proposal. The compromise was to suggest that the children be dewormed just before the rainy season, so as to avoid the problem of agitated worms. It worked.\*

The insider–outsider approach leads to another set of concepts. According to the Western biomedical definition, disease is the outsider perspective—that is, disease is an undesirable deviation from a measurable norm. Deviations in temperature, white blood cell count, red blood cell count, bone density, and many others are, therefore, seen as indicators of disease. Illness, in contrast, means “not feeling well.” Thus, it is a subjective, insider view. This sets up some immediate dissonances between the two views. It is possible to have an undesirable deviation from a Western biomedical norm and to feel fine. Hypertension, early stages of cancer, human immunodeficiency virus (HIV) infection, and early stages of diabetes are all instances where people may feel well, yet have a disease. Thus, healthcare providers must communicate the need for behaviors to “fix” something that people may not realize is wrong.

This potential conflict becomes even more critical when we think about the role of risk factors and prevention in contemporary biomedical practice. Laboratory tests can reveal the potential risk of future disease—for example, elevated low-density lipoprotein cholesterol (LDL) level, which may be predictive of an increased possibility of future cardiac or arterial disease. To reduce the possibility of such future disease, the patient might be labeled as “high risk” and prescribed medication to take daily for years. Even among those persons with substantial education, it is difficult to understand how to interpret risk and probability when one feels well and does not have a disease. The widespread rejection of vaccines by some well-educated parents represents another example of the power of insider (*emic*) understandings. The failure of public health advocacy for vaccines to convince such parents of the outsider (*etic*) view of the safety and value of vaccines demonstrates the power of cultural beliefs even in the face of scientific evidence.

It is also possible for someone to feel ill and for the Western biomedical system not to identify a disease. When this occurs, there is a tendency for Western-trained healthcare providers to say that nothing is wrong or that the person has a “psychosomatic” problem. Although both of these statements can be correct, there are several other explanations for this occurrence. One possibility is that Western biomedical science has not yet figured out how to measure a disease or disorder. Recent examples of this phenomenon include chronic fatigue syndrome and fibromyalgia: These conditions were labeled “psychosomatic” at one time, and remain incompletely understood by biomedicine, but now are defined by measurable deviations from a biological norm. Similarly, painful menstruation was labeled “subconscious rejection of femininity” in the past, but is now associated with elevated prostaglandin levels and can be helped by administration of a prostaglandin inhibitor.

A more intriguing set of conditions are what anthropologists have called “culture-bound syndromes” (Hughes, 1990; Simons, 2001; Simons & Hughes, 1985), but that might be better described as “culturally defined syndromes.” *Culturally defined syndromes* are an insider way of describing and attributing a set of symptoms. They often refer to symptoms of a mental or psychological problem, but a physiological disease may also exist, posing a challenge to the health practitioner. For example, Rubel, O’Neill, and Collado-Ardon (1984) found that an illness called *susto* (“fright”) in Mexico corresponded with symptoms of tuberculosis in adults. If people were told there was no such thing as *susto* and that they had tuberculosis, they rejected the diagnosis and the treatment on the grounds that the doctors obviously knew nothing about *susto*. This situation was complicated by the fact that tuberculosis was viewed as serious and stigmatizing. The solution was to discuss the symptoms with people and mention that Western biomedicine has a treatment for those symptoms (Rubel et al., 1984). *Susto* may also be used to describe other sets of symptoms—for example, those of diarrheal disease in children (Scrimshaw & Hurtado, 1988). Other examples of culture-bound syndromes include evil eye (Latin America, the Mediterranean), zar (the Middle East and North Africa), brain fog or brain fog (West Africa), amok (running amok) or *mata elap* (Indonesia, Malaysia, and the Philippines), *latah* (Malaysia and Indonesia), *pà leng* (China), and *ataque de nervios* (Puerto Rico) (Guarnaccia et al., 2010; Simons & Hughes, 1985).

\* We are indebted to Elena Hurtado of Guatemala for this example.



A recent example of what appears to be a new culture-bound syndrome has emerged among refugee children in Sweden whose families faced deportation (Aviv, 2017). *Uppgivenhetssyndrom*, or resignation syndrome, afflicting hundreds of children on the eve of their families' deportation, involves loss of speech and voluntary movement. The children exhibit no neurologic pathology in clinical tests, yet they must be fed, washed, and turned in bed by caregivers, as if they are comatose.

Not all individuals within a group will necessarily have the same beliefs and behaviors. With culturally defined syndromes, it is essential for an outsider to ask about the symptoms associated with the illness and to proceed with diagnosis and treatment on the basis of those symptoms. This is good practice in any event, because people often make a distinction between the cause of a disease or illness and its symptoms. Even if the perceived cause is inconsistent with the Western biomedical system, a disease can be diagnosed and treated based on the symptoms without challenging people's beliefs about the cause. When people's beliefs about the cause are denied, they may reject prevention or treatment measures entirely (Nichter, 2008).

The term *Western biomedicine* is used throughout this chapter because a term like *modern medicine* would deny the fact that there are other medical systems, such as Chinese and Ayurvedic medicine, that have modern forms. *Indigenous medical system* is used to refer to an insider—"within the culture"—system. Thus, Western biomedicine is an indigenous medical system in some countries, such as the United States and Canada, but it may exist side by side with other indigenous systems, even in the United States and Western Europe. In most of the world, Western biomedicine now coexists with, and often dominates, local or indigenous systems. Because of this multiplicity of systems, and because of class differences, physicians and policy makers in a country may not accept or even be aware of the extent to which indigenous systems exist or recognize their importance (Cameron, 2010). Also, many countries are home to peoples with multiple cultures and multiple languages. The cross-cultural principles discussed in this chapter may be just as important to work within a country as it is to work in multiple countries or cultures.

## Ethnocentrism

Another key concept from medical anthropology is that of ethnocentrism. *Ethnocentric* refers to seeing your own culture as "best." Ethnocentrism is a natural tendency, because the survival and perpetuation of a

culture depend on its teaching its children to accept the culture and on its members feeling that it is a good thing. In the context of cross-cultural understanding, ethnocentrism poses a barrier if people approach a culture with the attitude that it is inferior to their own culture. One of anthropology's key contributions to how we view the world is *cultural relativism*, which refers to the idea that the beliefs, behaviors, and values of each culture make sense within that culture. From this perspective, each culture has developed its own ways of solving the problems of how to live together; how to obtain the essentials of life, such as food and shelter; how to explain phenomena; and so on. Cultural relativism has been misunderstood in contemporary discourse as implying that we should not hold beliefs about "right" and "wrong," especially about culturally patterned practices that may cause harm. For example, in parts of Africa and the Middle East, female infants or young girls may have their genitals partially or completely amputated, which is sometimes called "female genital mutilation" by Western activists seeking to end the practice. Lane and Rubinstein (1996), in their analysis of the practice, advocated that cultural relativism means that we should try to understand the cultural explanations driving the practice and the context in which it occurs. At the same time, they emphasize that understanding why and how this behavior occurs does *not* mean that we condone the practice. Indeed, familiarity with the cultural rationale of a potentially harmful practice can be the basis of effective intervention against it.

The importance of seeking to understand a cultural practice can be a major challenge when global health is considered. What if a behavior is "wrong" from an epidemiologic perspective? How does one distinguish between a "dangerous" behavior (e.g., using an HIV-contaminated needle, swimming in a river with snails known to carry schistosomiasis, ingesting a powder with lead in it as part of a healing ritual) and behaviors that are merely different and, therefore, seem odd? For example, Bolivian peasants traditionally used very fine clay in a drink believed to be good for digestion and stomach ailments. Health workers succeeded in discouraging this practice in some communities because "eating dirt" seemed like a bad thing. The health workers then found themselves faced with increased caries and other symptoms of calcium deficiency in these same communities. Analysis revealed that the clay was a key source of calcium for these communities. It turns out that biomedicine also uses clay—but we color it pink or give it a mint flavor and put it in a bottle with a fancy label (S. Scrimshaw, personal observation).

Thus, there is a delicate balance between being judgmental without good reason and seeking to introduce behavior change because there is real harm from existing behaviors. In general, it is best to leave harmless practices alone and focus on understanding and changing harmful behaviors. This task is more difficult than it might seem, because the concept of cultural relativism also applies to perceptions of quality of life. A culture in which people believe in reincarnation may approach death with more equanimity, and may not embrace drastic procedures that prolong life only briefly. In some cultures, loss of a body organ is viewed as impeding the ability to go to an afterlife or the next life, and such surgery may be refused. Thus, it is important in global health for cultural outsiders to be cautious about making statements about what is good for someone else.

## Holism

The concept of holism is also useful in looking at health and disease cross-culturally. *Holism* is an approach used by anthropologists that looks at the broad context of whatever phenomenon is being studied. Holism involves staying alert for unexpected influences, because you never know what may have a bearing on the program you are trying to implement. For public health, this consideration is crucial because diverse factors may influence health and health behavior (Nichter, 2008).

A classic example of this situation is the detective work that went into discovering the etiology of the New Guinea degenerative nerve disease, kuru. Epidemiologists could not figure out how people contracted the disease, which appeared to have a long incubation period and to occur more frequently in women and children than in men. Many hypotheses were advanced, including inheritance (genetic), infection (bacterial, parasitic), and psychosomatic explanations.

By the early 1960s, the most widely accepted of the prevailing hypotheses was that kuru was genetically transmitted. Nevertheless, this proposal did not explain the sex differences in infection rates in adults but not in children, nor how such a lethal gene could persist. Working with Gadjusek of the National Institutes of Health (NIH), cultural anthropologists Glasse and Lindenbaum used in-depth ethnographic interviews to establish that kuru was relatively new to that region of New Guinea, as was the practice of cannibalism. Women and children were more likely to engage in the ritual consumption of the brains of dead relatives as a way of paying tribute to them, which was culturally less acceptable for men. Also, this tissue was

cooked, but women, who did the cooking, and children, who were around during cooking, were more likely to eat it when it was partially cooked and, therefore, still infectious. Lindenbaum and Glasse suggested the disease was transmitted by cannibalism. To confirm their hypothesis, Gadjusek's team inoculated chimpanzees with brain material from women who had died of kuru; the animals subsequently developed the disease. The disease, initially thought to be a slow virus, was subsequently identified as caused by prions, which are mis-folded proteins transmitted through the ingestion of brain tissue. Since then, the practice of cannibalism has declined and the disease has now virtually disappeared (Gadjusek, Gibbs, & Alpers, 1967; Lindenbaum, 1971). The research on kuru led scientists to discover a similar pattern of disease caused by the ingestion of beef that had been fed neurologic tissue of deceased cattle, called "mad cow disease" or variant Creutzfeldt-Jakob disease (Collinge et al., 2006).

## Health Literacy

In recent years, increasing attention has focused on another area that intersects with culture in people's ability to understand and access health care—the concept of health literacy. *Health literacy* is defined as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions" (Ratzan & Parker, 2000). Health literacy has been most thoroughly explored in the United States, and until recently was seen more as a literacy issue than a cultural issue. A 2004 Institute of Medicine report notes the importance of considering cultural issues such as many of those discussed in this chapter, and of taking a more global look at the problem and needed interventions (Nielsen-Bohlman, Panzer, & Kindig, 2004). Many National Academy of Medicine (NAM) reports have followed, along with an NAM Roundtable and discussion papers on the topic (e.g., Allen, Auld, Logan, Montes, & Rosen, 2017).

In looking at culture and health literacy, several categories for misunderstandings between provider and patient emerge.

First, there is a difference between medical terminology and lay terminology, which can occur in any language or culture. What is "diastolic" or a "bronchodilator"? What are HDL and LDL? What are T cells?

Second, individual and cultural differences surround concepts. What does it mean to maintain a "moderate" weight? To an anxious teen who wants to become a model, moderate weight might mean

something clinically dangerously low (from the outsider, health practitioner perspective). To some women from Latin America or the Middle East, moderate weight will be heavier than U.S. norms, whereas a U.S. woman who fears she weighs too much might be viewed as dangerously thin in those cultures.

Third, meanings may differ. While working with prenatal care programs in Mexico, Scrimshaw's team struggled with communicating the concept of risk in pregnancy as they developed materials to help women identify symptoms that meant that they should seek care. It turned out that the direct translation of "risk" into Spanish, or *riesgo*, did not carry the same meaning. When they explained the concept to women, they said, "Oh, you mean *peligro*." *Peligro* translates directly as "danger" (Alcalay, Ghee, & Scrimshaw, 1993; Scrimshaw et al., 1990).

Finally, language issues may affect understanding. While researchers were investigating seizure disorders in adolescents from three cultures, it became clear that the word "trauma" has two different meanings. It can mean psychological shock, or it can mean physical trauma, such as a blow to the head. The exact same word *trauma* is used in Spanish, with the same two potential meanings. When neurologists talked with patients who had epilepsy and their parents from Latino cultures, the neurologists used the word "trauma" as a cause of seizures to mean a blow to the head. The Latino parents heard the psychological meaning and thought their child had been traumatized psychologically by some fright or shock (Long, Scrimshaw, & Hernandez, 1992).

Lane and her colleagues (2017) found that health literacy can be compromised at times even for well-educated individuals. It is particularly important to note that health literacy is as much a problem of the healthcare provider and health communication staff as it is of a patient or the people in a community. If medical "jargon" is used, no amount of education short of experience in medicine or nursing will help someone understand. Terms such as "oncology," "nephrology," and "gastroenterology" have meaning for the medical world, but not for patients. Healthcare providers outside the United States often have a better understanding of this issue than their U.S. counterparts.

## Cultural Competence

A concept related to health literacy is that of cultural competence. *Cultural competence* in health care describes "the ability of systems to provide care to patients with diverse values, beliefs and behaviors, including tailoring delivery to meet patients' social, cultural, and linguistic needs" (Betancourt, Green, & Carrillo, 2002). The concept of cultural competence emerged, in part, from the

U.S. federal government's elaboration of the *Cultural and Linguistically Appropriate Services* (CLAS) guidelines to improve the care of diverse populations (Office of Minority Health, 2016). Healthcare institutions began using the CLAS standards to design cultural competence trainings for their staff. It became clear, however, that in-service training was insufficient to make participants truly competent in cultural issues. From this critique, scholars have suggested that cultural humility is a more realistic framework, because it promotes the understanding and appreciation of health beliefs and behaviors in their cultural contexts and respectful strategies to negotiate optimal health in the context of these beliefs and behaviors (Tervalon & Murray-García, 1998). To achieve this goal, we must understand our own biases.

Cultures vary in their definitions of health and of illness. A condition that is endemic in a population may be seen as normal and may not be defined as illness. *Ascaris* infection in young children was previously mentioned as a perceived "normal" condition in many populations. Similarly, malaria is seen as normal in some parts of Africa, because everyone has it or has had it. In Egypt, where schistosomiasis was common and affected the blood vessels around the bladder, blood in the urine was referred to as "male menstruation" and was seen as normal. These definitions may also vary by age and by gender. In most cultures, symptoms such as fever in children are seen as more serious than the same symptoms in adults. Men may deny symptoms more than women in some cultures, but women may do the same in others. Often, adult denial of symptoms is due to the need to continue working.

Sociologist Talcott Parsons (1948) first discussed the concept of the sick role, wherein an individual must "agree" to be considered ill and to take actions (or allow others to take actions) to define the state of his or her health, discover a remedy, and do what is necessary to become well. Individuals who adopt the sick role neglect their usual duties, may indulge in dependent behaviors, and seek treatment to get well. By adopting the sick role, they are viewed as having "permission" to be exempted from usual obligations, but they are also under an obligation to try to restore health. The process of seeking to remain healthy or to restore health is discussed in more detail later in this chapter.

## Belief Systems

**EXHIBIT 2-1** depicts types of insider cultural explanations of disease causation. Based on the literature, it attempts to be as comprehensive as possible for cultures around the world. The exhibit consists of generalizations about culture-specific health beliefs and behaviors; these generalizations cannot, however, be assumed to apply

**EXHIBIT 2-1** Types of Insider Cultural Explanations of Disease Causation**Body Balances**

- Temperature: Hot, cold
- Energy
- Blood: Loss of blood; properties of blood reflect imbalance; pollution from menstrual blood
- Dislocation: Fallen fontanel
- Organs: Swollen stomach; heart; uterus; liver; umbilicus; others
- Incompatibility of horoscopes

**Emotional**

- Fright
- Sorrow
- Envy
- Stress

**Weather**

- Winds
- Change of weather
- Seasonal disbalance

**Vectors or Organisms**

- Worms
- Flies
- Parasites
- Germs

**Supernatural**

- Bewitching
- Demons
- Spirit possession
- Evil eye
- Offending God or gods
- Soul loss

**Food**

- Properties: Hot, cold, heavy (rich), light
- Spoiled foods
- Dirty foods
- Sweets
- Raw foods
- Combining the “wrong” foods (incompatible foods)
- Mud/clay

**Sexual**

- Sex with forbidden person
- Overindulgence in sex

**Heredity****Old Age**

to every individual from a given culture. We can learn about the hot/cold balance system of Latinos, Asians, and Middle Easterners, explained in the next section, but the details of the system will vary from country to country, from village to village, and from individual to individual. When someone walks in the door of a clinic, you cannot know whether he or she as an individual adheres to the beliefs described for his or her culture and what shape the individual’s belief system takes. This makes the task of the culturally proficient healthcare provider both easier and harder. It means a practitioner working with a Mexican population does not have to memorize which foods are hot and which are cold in Mexico, but the practitioner does need to know that the hot/cold belief system is important in Mexican culture and be able to be understanding and responsive when people bring up the topic.

The beliefs held by cultures around the world are classified into various categories, which are discussed here. These categories are used for diagnosis and treatment and for explaining the etiology or origin of the illness. Often, multiple categories are used. For example, emotions may be seen as causing a “hot” illness.

**Body Balances**

Within body balances (opposites) belief systems, the concepts of “hot” and “cold” are among the most pervasive around the world. The hot/cold balance is particularly important in Asian, Latin American, and Mediterranean cultures. Hot and cold beliefs are part of what is referred to as “humoral medicine,” which is thought to have derived from Greek, Arabic, and East Indian pre-Christian traditions (Foster, 1953; Logan, 1972; Weller, 1983). The concept of opposites (e.g., hot and cold, wet and dry) also may have developed independently in other cultures (Rubel & Haas, 1990). For example, in the Chinese medical tradition, hot is referred to as *yin* and cold as *yang* (Topley, 1976).

In the hot and cold belief system, a healthy body is seen as in balance between the two extremes. Illness may be brought on by violating the balance, such as washing the hair too soon after childbirth (cold may enter the body, which is still “hot” from the birth), eating hot or heavy foods at night, or breastfeeding while upset (the milk will be hot from the emotions and make the baby ill). “Hot” does not always refer to temperature, however. Often foods such as beef and pork



are classified as hot regardless of temperature, whereas fish may be seen as cold regardless of temperature.

When illness has been diagnosed, the system is used to attempt to restore balance. Thus, in Central America, some diarrheas in children are viewed as hot, and protein-rich “hot” foods such as meats are withheld, aggravating the malnutrition that may be present and may be exacerbated by the diarrheal disease (Scrimshaw & Hurtado, 1988). An extensive literature exists on the topic of hot and cold illness classifications and treatments for them advocated by many of the world’s cultures.

Energy balance is particularly important in Chinese medicine, where it is referred to as *chi*. When this balance is disturbed, it creates internal problems of homeostasis. Foods (often following the hot/cold theories) and acupuncture are among the strategies used to restore balance (Topley, 1976).

Blood beliefs include the concept that blood is irreplaceable; thus loss of blood—even small amounts—is perceived as a major risk. Adams (1955) describes a nutritional research project in a Guatemalan village where this belief inhibited the researcher’s ability to obtain blood samples until the phlebotomists were instructed to draw as little blood as possible. Also, villagers were told that the blood would be examined to see if it was “sick” or “well” (another belief about blood) and they would be informed and given medicines if it were sick, which in fact did occur.

Menstrual blood is regarded as dangerous, especially to men, in many cultures, and elaborate precautions are taken to avoid contamination with it (Buckley & Gottlieb, 1988). As seen in the Guatemalan example, blood may have many properties that both diagnose and explain illness. Bad blood is seen as causing scabies in South India (Beals, 1976, p. 189). Haitians have a particularly elaborate blood belief system, which includes concepts such as *mauvais sang* (literally, “bad blood,” when blood rises in the body and is dirty), *saisissement* (rapid heartbeat and cool blood, due to trauma), and *faiblesses* (too little blood). Blood qualities may also be seen as “opposites,” such as clean–unclean, sweet–normal, bitter–normal, high–normal, heavy–weak, clotted–thin, and quiet–turbulent (C. Scott, personal communication, 1976). It is easy to see how these concepts could be used in a current program to prevent HIV infection in a Haitian community, because the culture already has ways of describing problems with blood.

Dislocation of body parts may occur with organs, but also with a physical aspect, such as the fontanel or “soft spot” in a baby’s head where the bones have not yet come together in the first year or so to allow for growth. From the outsider perspective, a depression

in this spot can be indicative of dehydration, often due to diarrheal disease. From the insider perspective, it is referred to as a cause of the disease (*caida de mollera*) in Mexico and Central America.

Many cultures associate illness with problems in specific organs. Good and Good (1981) talk about the importance of the heart for both Chinese and Iranian cultures. They discuss a case in which problems with cardiac medication were wrongly diagnosed for a Chinese woman who kept complaining about pain in her heart. In fact, she was referring to her grief over the loss of her son. The Hmong people of Laos link many problems to the liver, referring to “ugly liver,” “difficult liver,” “broken liver,” “short liver,” “murmuring liver,” and “rotten liver.” These terms are said to refer to mental and emotional problems, and so are idiomatic rather than literal (O’Connor, 1995, p. 92; Thao, 1986).

Topley (1976) mentions incompatibility of horoscopes between mother and child in Chinese explanations for some children’s illnesses.

## Emotional Illnesses

Illnesses of emotional origin are important in many cultures. Sorrow (as in the case of the Chinese woman mentioned previously), envy, fright, and stress are often seen as causing illnesses. In a Bolivian village in 1965, for example, Scrimshaw was told that a young girl’s smallpox infection was attributed to her sorrow over the death of her father.

Envy can cause illness because people with envy could cast the “evil eye” on someone they envy, even unwittingly, or the envious person can become ill from the emotion (Reichel-Dolmatoff & Reichel-Dolmatoff, 1961). Fright, called *susto* in Latin America, has already been mentioned. In addition to the case of tuberculosis in adults discussed previously, *susto* is a common explanation for illness in children. It is also mentioned in Chinese culture (Topley, 1976).

## Weather

Everything from the change of seasons to unusual variations within seasons (too warm, too cold, too wet, too dry) can be blamed for causing illness. Winds, such as the Santa Ana in California or the Scirocco in the North African desert, are also implicated as sources of illness in many cultures. From the outsider perspective, changes in seasons can be associated with increases in risk and incidence of disease. For example, in many areas people have a greater chance of contracting malaria, cholera, and gastrointestinal infections during the rainy season.



## Vectors or Organisms

Vectors or organisms are blamed for illness in some cultures and represent a blend of Western biomedical and indigenous concepts. “Germs” is a catch-all category, as is “parasites.” Worms are seen as causing diarrhea, whereas flies are seen as causing illness and, sometimes, as carrying germs.

## The Supernatural

The supernatural is another frequently viewed source of illness, especially in Africa and Asia, though this belief system is certainly not confined to those regions. In fact, the evil eye is a widespread concept—someone deliberately or unwittingly brings on illness by looking at someone with envy, malice, or too hot a gaze. In cultures where most people have dark eyes, strangers with light eyes may be seen as dangerous. In Latin America, a light-eyed person who admires a child can risk bringing evil eye to that child, but can counter it by touching the child. In other cultures, touching the child can be unlucky, so it is important to learn about local customs. Frequently, amulets and other protective devices, such as small eyes of glass, red hats, and a red string around the wrist, are worn to prevent evil eye. These objects can be viewed as an opportunity to discuss preventive health measures, because they are an indication that people are thinking about prevention.

Bewitching is deliberate malice, done either by the individual who wishes someone ill (literally) or by a practitioner at someone else’s request. Bewitching can be countered by another practitioner or by specific measures taken by an individual. In some regions of Africa, epidemics are blamed on “too many witches,” and people disperse to get away from them, thereby reducing the critical population density that had previously sustained the epidemic (Alland, 1970).

Belief in soul loss is widespread throughout the world. Soul loss can be caused by sources such as fright, bewitching, evil eye, and demons. It can occur in adults and children. Soul loss is serious and can lead to death. It must be treated through rituals to retrieve the soul. In Bolivia, for example, a village priest complained to Scrimshaw that his attempt to visit a sick child was thwarted when the family would not allow him to enter the house. The family later reported that an indigenous healer was performing a curing ritual at the time, and the soul was flying around the house as they were trying to persuade it to reenter the child. Opening the door to the priest would have allowed the soul to escape. In the Western biomedical system, this child’s symptoms would have been attributed to severe malnutrition.

Spirit possession is also a worldwide belief, and one that is found especially frequently in African and Asian cultures. One of the best-known accounts of this phenomenon is *A Spirit Catches You and You Fall Down* (Fadiman, 1997), a moving story of seizure disorders in a Hmong community and the misunderstandings between the family and physicians. In another example, from South India, Beals (1976) mentions spirit possession in a daughter-in-law whose symptoms included refusing to work and speaking insultingly to her mother-in-law. He suggests that spirit possession is a “culturally sanctioned means of psychological release for oppressed daughters-in-law” (p. 188). Freed and Freed (1967) discuss similar cases in other regions of India. In Tanzania, malaria in children is sometimes blamed on possession by a bird spirit (Kamat, 2008). In Haiti, spirit possession is seen as a mark of favor by the spirits and is actively sought out. One of the drawbacks, however, is that the possessing spirits object to the presence of foreign objects in the body; as a consequence, some women do not want to use intrauterine devices as a means of birth control.

Demons are viewed as causing illness in Chinese culture, while offending God or gods is a problem in other cultures (Topley, 1976). In South India, epidemic diseases such as chickenpox and cholera (and, formerly, smallpox) are believed to be caused by disease goddesses. These goddesses bring the diseases to punish communities that become sinful (Beals, 1976, p. 187). The concept of punishment from God is seen in a case study from Mexico, where onchocerciasis (river blindness), which is caused by a parasite transmitted by the bite of a fly that lives near streams, is often thought to be due to sins committed either by the victim or by relatives of the victim. These transgressions against God are punished by God closing the victim’s eyes (Gwaltney, 1970).

## Food

In many cultures, food is perceived as being able to cause illness through its role in the hot and cold belief system; through spoiled foods, dirty foods, or raw foods; and by combining the wrong foods. Sweets are implicated as a cause of worms in children, and children who eat mud or dirt may become ill. Foods may also cause problems if eaten at the wrong time of day, such as “heavy” foods at night. An extensive literature describes food beliefs and practices worldwide, which has important implications for public health practice.

## Sexual Illnesses

In Ecuador in the early 1970s, children’s illnesses were sometimes blamed on affairs between one of the

child's parents and a *compadre* or *comadre*—one of the child's godparents (Scrimshaw, 1974). Such a relationship was viewed as incestuous and dangerous to the child. In India, sex is sometimes viewed as weakening to the man, so overindulgence is considered a cause of weakness. To return to the concept of blood beliefs, it is thought that 30 drops of blood are needed to make one drop of semen, so blood loss weakens a man.

## Heredity and Old Age

Heredity is sometimes blamed for illness, early death, or some types of death. Similarly, old age may be the simple explanation given for illness or death. Heredity as noted here is expressed as an insider view, but is also part of the Western biomedical body of evidence on the causation or risk for many diseases.

## Illness in Various Forms

**TABLE 2-1** illustrates the way in which some of these beliefs are used to explain a particular illness—in this case, diarrheal disease in Central America. It is typical of the way in which an illness may be seen as having different forms, or manifestations, with different etiologies. It is also typical of the way in which several different explanations may be put forth for one set of symptoms.

In this case, Table 2-1 and **FIGURE 2-1** (the diagram of treatments) were key in expanding the orientation of the Central American diarrheal disease program. The program had intended to emphasize the distribution of oral rehydration solutions (ORS) in the clinics, but the insider perception was that a child should be

taken to the clinic only for the worst form of diarrhea, dysentery. Instead, the most common treatment for diarrhea consisted of fluids in the form of herbal teas or sodas with medicines added. Often, storekeepers and pharmacists were consulted. It made sense to provide the ORS at stores and pharmacies as well as at clinics, so that all diarrheas were more likely to be treated (Scrimshaw & Hurtado, 1988).

In a related situation, Kendall, Foote, and Martorell (1983) found that, when the government of Honduras did not include indigenous or “folk” terminology for diarrheal disease in its mass-media messages regarding oral rehydration, people did not use ORS for diarrheas attributed to indigenously defined causes.

## Healers

**EXHIBIT 2-2** lists types of healers, which range from indigenous practitioners to Western biomedical providers. Pluralistic healers are those who mix the two traditions, although some Western biomedical healers and those from other medical systems may also mix traditions in their practices.

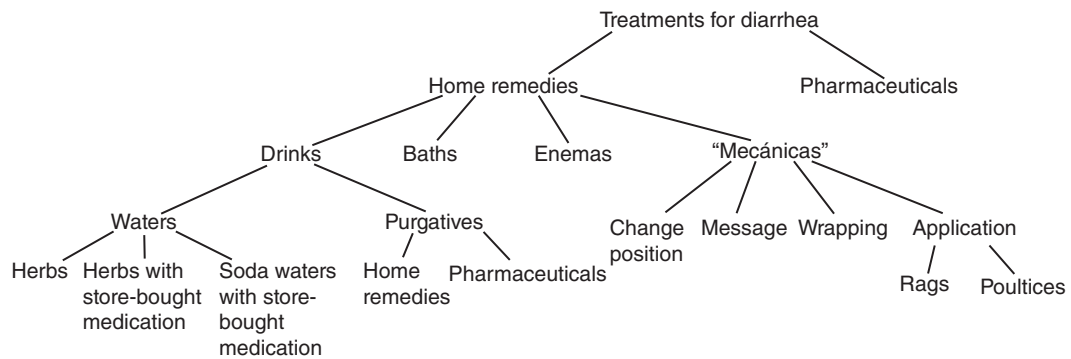
As with explanations of disease, the types of healers listed in Exhibit 2-2 are found in different combinations in different cultures. There is always more than one type of healer available to a community, even if members have to travel to seek care. The 16-country study of health-seeking behavior described earlier found that in all communities, people used more than one healing tradition, and usually more than one type of healer (Scrimshaw, 1992). The process of diagnosing

**TABLE 2-1** Taxonomy of Diarrhea

CAUSE		SYMPTOMS All types have watery and frequent stools	TREATMENT
Mother's milk	Physical activity	Hot	Not breastfeeding when hot
	Hot foods		Mother changes diet
	Pregnancy		Breastfeeding stops
	Anger	Emotional	Very dangerous Home, drugstore, injectionist, witch, spiritualist
	Sadness		
	Fright		

<b>Food</b>		Bad food	Flatulence, feeling of fullness	Home, folk curer
		Excess		
		Does <i>not</i> eat on time		
	Hot	Quality		
	Cold			
<b>Tooth Eruption</b>			Tooth eruption	None
<b>Fallen fontanel, fallen stomach</b>	Fallen stomach		Green with mucus Sunken fontanel; vomiting; green in color	Folk curer
	Fallen fontanel			
<b>Evil eye</b>			Fever	Folk curer
<b>Stomach Worms</b>			Worms	Drugstore, home, folk curer
<b>Cold enters Stomach</b>	From feet		White in color	Folk curer
	From head			
<b>Dysentery</b>			Blood in stools, "urgency;" color is red or black	Home, drugstore, health post

Courtesy of Scrimshaw, S. C. M., & Hurtado, E. (1987). *Rapid assessment procedures for nutrition and primary health care: Anthropological approaches to improving program effectiveness (RAP)*. Los Angeles: UCLA Latin America Center, p. 26. Reprinted with permission of the Regents of the University of California.



**FIGURE 2-1** Taxonomy of treatments for diarrhea.

Courtesy of Scrimshaw, S. C. M., & Hurtado, E. (1987). *Rapid assessment procedures for nutrition and primary health care: Anthropological approaches to improving program effectiveness (RAP)*. Los Angeles: UCLA Latin America Center, p. 26. Reprinted with permission of the Regents of the University of California.

**EXHIBIT 2-2** Types of Healers**Indigenous**

- Midwives
- Doulas
- Shamans
- Curers
- Spiritualists
- Witches
- Sorcerers
- Priests
- Diviners
- Herbalists
- Bonesetters
- Massagers

**Pluralistic**

- Injectionists
- Indigenous health workers
- Western-trained birth attendants
- Traditional chemists/herbalists
- Storekeepers and vendors

**Western Biomedical**

- Pharmacists
- Nurse–midwives
- Nurses
- Nurse practitioners
- Physicians
- Dentists
- Other health professionals

**Other Medical Systems**

- Chinese medical system
  - Practitioners
  - Chemists/herbalists
  - Acupuncturists
- Ayurvedic practitioners
- Taoist priests

illness and seeking a cure has been referred to as “patterns of resort,” a descriptor that is now favored over the older term “hierarchy of resort” (Scrimshaw & Hurtado, 1987). People may zigzag from one practitioner to another, crossing from one type to another type of healer, and not always starting with the simplest and cheapest, but with the one they can best afford and who they believe will be most effective, given the severity of the problem. Even middle- and upper-class individuals, who can afford Western biomedical care, may use other types of practitioners and practices.

Indigenous practitioners are usually members of the culture and follow traditional practices. Today, they often mix elements of Western biomedicine and other traditional systems. In many instances, they are “called” to their profession through dreams, omens, or an illness, which usually can be cured only by their agreement to become a practitioner. Most learn through apprenticeship to other healers, although some are taught by dreams. Often, they will take courses in Western practices in programs such as those developed to train Chinese “barefoot doctors” or community-based health promoters. In some instances, they must conceal their role as traditional healer from those running the training programs. The incorporation of some Western biomedical knowledge and skills often enhances a practitioner’s prestige in the community.

Some indigenous practitioners charge for their services, but many do not, accepting gifts instead. In a few traditions (including some Chinese cultures), practitioners are paid as long as family members are

well, but they are not paid for illness treatment. The duty of the practitioner in those cases is to keep people well, which argues for the acceptability of prevention programs in those cultures.

For the most part, indigenous practitioners do “good,” meaning healing. Some can do both good and evil (e.g., shamans, sorcerers, and witches in many cultures). A few in these categories practice only evil or negative rituals, which aim to cause harm—for example, for revenge or to counteract the good fortune of a rival. Their work must then be countered by someone who does “good” magic. The power of belief is such that if individuals believe they have been bewitched, they may need a counteractive ritual, even if the Western biomedical system detects and treats a specific disease. In Guayaquil, Ecuador, one woman believed that she had been *maleada* (cursed) by a woman who was jealous of her, and that this curse was making her and her children ill. A *curandera* (curer) was brought in to do a *limpia* (ritual cleansing) of the house and family to remove the curse (Scrimshaw, 1974).

The importance of the power of belief is not confined only to bewitching. One anthropologist working with a Haitian population discovered that a Haitian burn patient made no progress until she went to a *Houngan* (voodoo priest) on the patient’s behalf and had the appropriate healing ritual conducted (J. Halifax-Groff, personal communication, 1976).

In some cultures, healers are seen as diagnosticians, while others do the treatment (Alland, 1970). Other healers may handle both tasks, but refer some



kinds of illness to other practitioners. In Haiti, both midwives and voodoo priests refer some cases to the Western biomedical system. Healers who combine healing practices or who combine the ability to do both diagnosis and treatment are viewed as more powerful than other types. Topley (1976, pp. 259–260) discusses this issue in the setting of Hong Kong, noting that Taoist priest healers are particularly respected in that area. They are seen as both priest and doctor and “claim to combine the ethics of Confucianism, the hygiene and meditation of Taoism, and the prayers and self-cultivation of the Buddhist monk.”

Pluralistic healers combine Western biomedical and indigenous practices. Injectionists will give an injection of antibiotics, vitamins, or other drugs purchased at pharmacies or stores. Sometimes these injections are suggested by the pharmacist or storekeeper; at other times they are self-prescribed. Because antibiotics proved so dramatically effective in curing infections when Western biomedicine was first introduced in many cultures, injections are often seen as conveying greater healing than the same substance taken orally. Thus, many antibiotics now available orally and vitamins are injected. In today’s environment, this practice increases the risk of contracting HIV or hepatitis if sterile or new needles and syringes are not used.

Traditional chemists and herbalists, as well as storekeepers and vendors (many communities are too small to have a pharmacy), often sell Western biomedical medications, including those that require a prescription in the United States and Western Europe. While prescriptions may be “legally” required in many countries, the laws are not always rigorously enforced. This is also true for pharmacies, which are very important—sometimes the most important—sources of diagnosis and treatment in many communities around the world.

For more than 50 years, countries around the world have enlisted and trained indigenous health practitioners to function as part of the national or regional health system. These programs have ranged from China’s “barefoot doctors” to the education of community members in Latin America, Africa, and Asia to provide preventive care and triage. These efforts have nearly disappeared in some areas (e.g., China) and reemerged in others. For example, in Australia, indigenous people are now involved as indigenous health outreach workers to their communities (2010, healthinfont@ecu.edu.au). In Nepal, indigenous health workers have been enlisted in programs to address diarrheal disease and acute respiratory infections (Ghimire, Pradhan, & Mahesh, 2010), and female Ayurvedic doctors are important resources for women’s health (Cameron, 2010).

Western biomedical practitioners are an important source of care, but they may also be expensive or

difficult to access in remote areas. As mentioned earlier, if an individual believes that an illness is due to a cause explained by the indigenous system and a Western biomedical practitioner denies that cause, the individual may not return to that practitioner but rather seek help elsewhere (Kamat, 2008; Nichter, 2008).

As noted, there are other medical systems with long traditions, systematic ways of training practitioners, and well-established diagnostic and treatment procedures. Until recently, Western biomedical practitioners totally rejected both these and indigenous systems, often failing to recognize how many practices and medicines that Western biomedicine has “borrowed” from other systems (e.g., quinine, digitalis, many anesthetics, aspirin, and estrogen). Elements of these systems that were derided in the past, such as acupuncture, have now found their way into Western biomedical practice and are being “legitimized” by Western research (Baer, 2008).

## ► Theories of Health Behavior and Behavior Change

The fields of sociology, psychology, and anthropology have developed many theories to explain health beliefs and behaviors and behavior change (Schumacher, Ockene, & Riekert, 2009). Some theories developed by sociologists and psychologists in the United States were developed first for U.S. populations and only later applied internationally. Others were developed with international and multicultural populations in mind from the beginning. Only a few of the many theories of health and illness beliefs and behavior are covered in this section; those included here have been quite influential in general or are applicable for international work in particular.

### Health Belief Model

The health belief model suggests that decision making about health behaviors is influenced by four basic premises—perceived susceptibility to the illness, perceived severity of the illness, perceived benefits of the prevention behavior, and perceived barriers to that behavior—as well as by other variables, such as sociodemographic factors (Rosenstock, Strecher, & Becker, 1974). In general, people are seen as weighing perceived susceptibility (how likely they are to get the disease) and perceived severity (how serious the disease is) against their belief in the benefits and effectiveness of the prevention behavior they must undertake and the costs of that behavior in terms of barriers such as time, money, and aggravation. The more serious the disease is believed to be, and the more effective

the prevention, the more likely people are to incur the costs of engaging in the prevention behavior.

The health belief model has been extensively studied, critiqued, modified, and expanded to explain people's responses to symptoms and compliance with healthcare regimens for diagnosed illnesses. One concern has been that this model does not work as well for chronic problems or habitual behaviors because people learn to manage their behaviors or the healthcare system. Also, it has been accused of failing to take environmental and social forces into account, which in turn increases the potential for blaming the individual. The difficulty in quantifying the model for research and evaluation purposes is also a problem.

Work by Bandura led to the inclusion of self-efficacy in the model. *Self-efficacy* has been defined as "the conviction that one can successfully execute the behavior required to produce the desired outcome" (Bandura, 1977, 1989). The concept of *locus of control*, or belief in the ability to control one's life, also has been incorporated into this model. An example of this concept can be found in a comparison of migrant Yugoslavian and Swedish females with diabetes. The study revealed a stronger locus of control in the Swedish women and more passivity toward self-care in the Yugoslavian women, who also had a lower self-efficacy. The authors attributed these findings to the different political systems in the two countries—collectivism in Yugoslavia versus individualism in Sweden (Hjelm, Nyberg, Isacson, & Apelqvist, 1999). A more recent example, among impoverished HIV-positive women in Kenya, found that the women preferred to use indigenous treatments to manage their symptoms, rather than taking available antiretroviral therapy. The women's shared cultural model of self-management enhanced the women's confidence in their own ability to care for themselves rather than take the Western biomedical drugs (Copeland, 2017).

The value of the four basic premises of the health belief model has held up well under scrutiny. Perceived barriers have the strongest predictive value of the four dimensions, followed by perceived susceptibility and perceived benefits. Perceived susceptibility is most frequently associated with compliance with health screening exams. Perceived severity of risk has been noted to have a weaker predictive value for protective health behaviors, but is strongly associated with sick-role behaviors.

In *Medical Choice in a Mexican Village*, Young (1981) describes a health decision-making process very similar to that found in the health belief model. In choosing between home remedies, pharmacy, or store, and between indigenous healer or doctor, the villagers weigh the perceived severity of the illness, the potential

efficacy of the cure to be sought, the cost (money, time, and so on) of the cure, and their own resources to seek treatment and pay the cost as they make their decision. The simplest, least costly treatment is always the first choice, but the severity of illness and efficacy issues may force adoption of a more costly option. Other studies of health-seeking behavior have found similar patterns throughout the world (e.g., Kamat, 2008).

## Theory of Reasoned Action

The theory of reasoned action was first proposed by Ajzen and Fishbein (1972) to predict an individual's intention to engage in a behavior in a specific time and place. This theory was intended to explain virtually all behaviors over which people have the ability to exert self-control. Five basic constructs precede the performance of a behavior: (1) behavioral intent, (2) attitudes and beliefs, (3) evaluations of behavioral outcomes, (4) subjective norms, and (5) normative beliefs. Behavioral intent is seen as the immediate predictor of behavior. Factors that influence behavioral choices are mediated through this variable. To maximize the predictive ability of an intention to perform a specific behavior, the measurement of the intent must closely reflect the measurement of the behavior. For example, measurement of the intention to begin to take oral contraceptives must include questions about when a woman plans to visit a clinic and which clinic she plans to attend. The failure to address action, target, context, and time in the measurement of behavioral intention will undermine the predictive value of the model.

In a test of this theory's ability to predict condom use intentions in a national sample of young people in England, measures of past behavior were found to be the best predictors of intentions and attenuated the effects of attitude and subjective norms (Sutton, McVey, & Glanz, 1999).

## Diffusion of Health Innovations Model

The diffusion of health innovations model proposes that communication is essential for social change, and that diffusion is the process by which an innovation is communicated through certain channels over time among members of a social system (Rogers, 1983; Rogers & Shoemaker, 1972). An *innovation* is an idea, practice, service, or other object that is perceived as new by an individual or group. Ideally, the development of a diffusion strategy for a specific health behavior change goal will proceed through six stages:

1. Recognition of a problem or need
2. Conduct of basic and applied research to address the specific problem

3. Development of strategies and materials that will put the innovative concept into a form that will meet the needs of the target population
4. Commercialization of the innovation, which will involve production, marketing, and distribution efforts
5. Diffusion and adoption of the innovation
6. Consequences associated with adoption of the innovation

According to classic diffusion theory, a population targeted by an intervention to promote acceptance of an innovation includes six groups: Innovators, early adopters, early majority, late majority, late adopters, and laggards. The rapidity and extent to which health innovations are adopted by a target population are mediated by a number of factors, including relative advantage, compatibility, complexity, communicability, observability, trialability, cost-efficiency, time, commitment, risk and uncertainty, reversibility, modifiability, and emergence (see the *Innovation, Technology and Design* chapter for more information on scaling up health innovations).

Relative advantage refers to the extent to which a health innovation is better (faster, cheaper, more beneficial) than an existing behavior or practice. Antibiotics, for example, were quickly accepted in most of the world because they were dramatically faster and more effective than traditional practices.

Compatibility is the degree to which the innovation is congruent with the target population's existing set of practices and values. Polgar and Marshall (1976) point out that injectable contraceptives were acceptable in the village in India where Marshall worked because injections were viewed so positively due to the success of antibiotics.

The degree to which an innovation is easy to incorporate into existing health regimens may also affect rates of diffusion. Iodized salt is easier to use than taking an iodine pill, because consuming salt is already a habit. Health innovations are also more likely to be adopted quickly and by larger numbers of individuals if the innovation itself can be easily communicated.

The concept of trialability involves the ease of trying out a new behavior. For example, it is easier to try a condom than to be fitted for a diaphragm. Observability refers to role models, such as village leaders volunteering to be the first recipients in a vaccination campaign.

A health innovation is also more likely to be adopted if it is seen as cost-efficient. A famous case study of water boiling in a Peruvian town demonstrated that the cost in time and energy of gathering

wood and making a fire to boil the water far outweighed any perceived benefits, so water boiling was seldom adopted (Wellin, 1955). Successful health innovations are likely to be those that do not require expenditure of much additional time, energy, or other resources.

One of the overall messages regarding communicating health education and promotion stated by Rogers (1973) is that mass media and interpersonal communication channels should both be used. Implementing both methods is of particular importance in low- and middle-income countries (LMICs), especially in rural communities. Rogers emphasizes that mass media deliver information to a large population and add knowledge to the general knowledge base, but interpersonal contacts are needed to persuade people to adopt new behaviors (thereby using the knowledge function, the persuasion function, and the innovation-decision process). In Rogers's work and other work cited by him, "family planning diffusion is almost entirely via interpersonal channels" (p. 263). Notably, Rogers presents five examples in different countries (including India, Taiwan, and Hong Kong), wherein interpersonal channels were the primary source for family planning information and were the motivating factors to seeking services.

The limitations of using mass media to disseminate health messages include the following issues:

- *Limited exposure.* In LMICs, smaller audiences have access to mass media. Radio continues to be an important mass-media tool, but social media via cell phones and other modes of Internet access are now a key way to reach people. Low literacy levels are another barrier.
- *Message irrelevancy.* The content of mass-media messages may be of no practical use for many rural and "non-elite" populations. Often instrumental information—"how to" information—is not included in the messages (e.g., where to receive services or the positive and negative consequences of adapting a particular health behavior).
- *Low credibility.* For people to accept and believe the messages being diffused, trustworthiness needs to exist between the sender and the receiver. In many LMICs, radio and TV stations are run by a government monopoly and their content may be considered to be government propaganda by the receivers. Radio and TV in Nigeria, Pakistan, and other African and Asian countries, for example, are controlled by the government (Rogers, 1973).

The diffusion of innovations model focuses solely on the processes and determinants of adoption of a new behavior and does not help to understand or



explain the maintenance of behavior change. Many health behaviors require permanent or long-term changes. Also, it is important to understand whether a new behavior is being carried out appropriately, consistently, or at all. One salient example involves condom use, which healthcare practitioners demonstrated to a population by unrolling the condom over a banana. Women who became pregnant while they reported using condoms had been faithfully putting them on bananas.

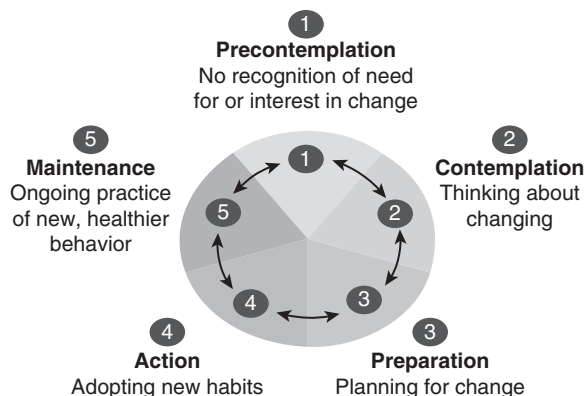
The rapid development of information technology—in particular, the use of smartphones—is revolutionizing diffusion of information and communication. For example, a smartphone innovation among men who have sex with men (MSM) consists of a computer app designed to facilitate finding sexual partners of men infected with a sexually transmitted disease. This app was used by the Monroe County Health Department in Rochester, New York, to map the spread of several sexually transmitted infections among this group, to document their sexual networks, and to advise sexual partners that they may have been exposed to an infection (Pennise et al., 2015).

Wearable devices range from sensors embedded in clothing to glasses to computerized watches and health-related wrist units. These devices have multiple applications, including fall risk assessment, quantifying sports exercise, studying people's habits, and monitoring the elderly (Hagthi, Thurow, & Stoll, 2017). Smartphone apps, in some cases, are motivating people to engage in more physical activity or eat healthier—for example, by tracking their daily steps or completing a food diary (Karpman, 2016). Others allow patients to upload their blood glucose readings, heart rates and other health data that they and their providers can monitor over time. Hagthi et al. (2017) note that “Based on consultation with expert scientists in environmental engineering and medicine, we believe that, motion trackers, gas detectors, and vital signs are the most important elements in health monitoring. . . .” Globally, smartphones and wrist or belt units are the most likely to be relevant for health-related applications in the near future.

## Transtheoretical Model

Theories around the concept of stages of change have been evolving since the early 1950s. Currently, the most widely accepted stage change model is the transtheoretical model of behavior change developed by Prochaska, DiClemente, and Norcross (1992) (**FIGURE 2-2**). This model includes five core constructs: (1) stages of change, (2) decisional

“Stages of change”  
Transtheoretical model of behavior change



**FIGURE 2-2** “Stages of change” transtheoretical model of behavior change.

Reproduced from Prochaska, J., DiClemente, C., & Norcross, J. (1992). In search of how people change: Applications to addictive behaviors. *American Psychologist*, 47, 1102–1104.

balance, (3) self-efficacy, (4) processes of change, and (5) maintenance. Interventions relying on this model are expected to include all four constructs in the development of strategies to communicate, promote, and maintain behavior change.

The transtheoretical model identifies five stages of change. The first is precontemplation, in which individuals have no intention to take action within the next 6 months. In the contemplation stage, individuals express an intention to take some action to change a negative health behavior or adopt a positive one within the next 6 months. The preparation stage refers to the intent to make a change within the next 30 days. The action stage involves the demonstration of an overt behavior change for an interval of less than 6 months. In the fifth stage, known as maintenance, a person will have sustained a change for at least 6 months. The model helps healthcare providers, including those working in health education and communication, to develop appropriate strategies for reaching people at the various stages of readiness for change.

Decisional balance is an assessment of the costs and benefits of changing, which will vary with the stage of change. Self-efficacy is divided into two concepts within the transtheoretical model. First, confidence exists that one can engage in the new behavior. Second, the temptation aspect of self-efficacy refers to factors that can tempt one to engage in unhealthy behaviors across different settings.

The fourth construct of the transtheoretical model deals with the process of change. It includes 10 factors that can influence the progression of individuals from the precontemplation stage to the maintenance stage.



## The Harm Reduction Model

Harm reduction is a concept that emerged from chemical dependency treatment programs, in which researchers realized that expecting those persons who were addicted to substances to become abstinent in one single step, without any relapse, was not possible for the vast majority. It drew on the ideas of the transtheoretical model that changing health behavior involves several steps (contemplation, planning, action) and may also involve relapse. The important insights of the harm reduction model are that (1) relapse is not failure and (2) making even a small step in improving health behavior often leads to additional positive changes (Lane, Lurie, Bowser, Kahn, & Chen 1999). The harm reduction model has been integrated into obesity-reduction programs, smoking cessation, and teen pregnancy prevention.

## Explanatory Models

Explanatory models were initially proposed by the physician-anthropologist Kleinman (1980, 1986, 1988). They differ from some of the theories described earlier in this section in that they are designed for multicultural settings. They include models such as the meaning-centered approach to staff-patient negotiation described by Good and Good (1981). Although such models focus on individual interactions between physician or other staff and patients, the concepts underlying them—such as Kleinman's negotiation model—have proved useful for research and for behavioral interventions for larger populations.

An explanatory model is seen as dynamic, and can change based on individual experiences with health, with health information, or with the illness in question (McSweeney, Allan, & Mayo, 1997).

**EXHIBIT 2-3** adapts and summarizes concepts from Good and Good's (1981) description of the meaning-centered approach. This approach involves mutual interpretations across systems of meaning. The interpretive goal is understanding the patient's perspective. The underlying premise is that disorders vary profoundly in their psychodynamics, cultural influences in interpretation, behavioral expression, severity, and duration. As noted earlier, it is difficult to apply "codes" to culture and symptoms due to factors such as individual variations, groups assimilating or changing, and groups adding beliefs and behaviors from other cultures. For example, belief in *espiritismo* (spiritism) was traditionally strongest among Puerto Rican groups in the United States, but this belief has now been adopted by other cultures of Latin American origin as well. Thus, instead of trying to provide "formulas" for understanding health and illness belief systems within different cultures, the focus with the meaning-centered approach is on the meaning of symptoms. The medical encounter must involve the interpretation of symptoms and other relevant information.

## Other Theories

A number of other theories can be useful in looking at culture and behavior. For example, the multi-attribute utility theory predicts behavior directly from an individual's evaluation of the consequences or outcomes

### EXHIBIT 2-3 Meaning-Centered Approach to Clinical Practice

#### Primary Principles

- Groups vary in the specificity of their medical complaints.
- Groups vary in their style of medical complaining.
- Groups vary in the nature of their anxiety about the meaning of symptoms.
- Groups vary in their focus on organ systems.
- Groups vary in their response to therapeutic strategies. Human illness is fundamentally semantic or meaningful (it may have a biological base, but is a human experience).

#### Corollary

- Clinical practice is inherently interpretive.

#### Actions

Practitioners must:

- Elicit patients' requests, questions, and other communications.
- Elicit and decode patients' semantic networks.
- Distinguish disease and illness and develop plans for managing problems.
- Elicit explanatory models of patients and families, analyze conflict with biomedical models, and negotiate alternatives.

Adapted by permission from Springer Nature: Springer Nature, *The Meaning of Symptoms: A Cultural Hermeneutic Model for Clinical Practice* by B. J. Good and M. J. D. Good, Copyright 1981.

associated with both performing and not performing a given behavior. Some models, such as social learning theory, have been criticized by anthropologists who argue against the notion that people are like a “black box” into which you can pour information and expect a specific behavior change.

## ► Common Features of Successful Health Communication and Health Promotion Programs

When applied in practice, many of the principles discussed in this chapter can help increase the success of health communication and health promotion programs. In particular, understanding and incorporating people’s insider cultural values, beliefs, and behaviors; a community-based approach with strong community participation; recognition of gender issues (Zamen & Underwood, 2003); peer group education, including use of community-based outreach workers; and multilevel intervention approaches have proved essential to program success.

The Agita Sao Paulo Program in Brazil provides a case study in using local culture to design both the content and the delivery system for a program to use physical activity to promote health (Matsudo et al., 2002). Just the word *agita* (which means to move the body—to “agitate” in the sense of “stirring,” but also to change) is more culturally understood and internalized than a literal translation of “exercise.” In addition to representing careful work on culturally acceptable ways of delivering the message, this project provides multiple culturally valued ways to increase physical activity, and “tailors” these options to the age, gender, and lifestyles of community members.

In a very different project, work in three townships in South Africa focused on identifying where AIDS prevention would be most effective from the culturally appropriate, insider perspective (Weir et al., 2003). Among other things, researchers learned that ideal prevention intervention sites varied depending on whether the central business district or the township was the most popular location for initiating new sexual encounters. The type of sex (commercial versus casual) as well as the availability of condoms varied with the site. The age of people engaging in risky behaviors and risk behaviors by gender also varied by site. Again, prevention programs needed to be tailored.

In another HIV/AIDS prevention project, this time in Vietnam, paying attention to culture

and religion was essential to program strategies (Rekart, 2002). In Belize, understanding adolescents and making sure the program met their needs in both cultural- and age-appropriate ways was key (Martiniuk, O’Connor, & King, 2003). In Nepal, the use of indigenous workers and attention to cultural practices helped lower the incidence and severity of diarrheal and respiratory infections in the districts targeted for interventions (Ghimire et al., 2010). Evaluation of programs addressing family planning and HIV prevention shows that behavior-change communication increases knowledge and interpersonal communication among audience members and motivates positive changes in behavior (Salem, Bernstein, Sullivan, & Lande, 2008).

Another example of focusing on understanding and changing cultural values around unhealthy behaviors is found in the area of smoking cessation. Abdullah and Husten (2004) set forth a framework for public health intervention in this area that addresses multiple levels of society.

The need for the involvement of communities is also clearly demonstrated in the literature, as literally hundreds of references exist on this topic. A recent summary article outlines many of the broad principles underlying this approach, including community analysis with community participation, action plans designed with community input, and community involvement in implementation (Nguyen-Truong, Tang, & Hsiao, 2017). Community involvement may take the form of ongoing oversight and evaluation as well as the more usual modes of using community outreach workers (e.g., Thevos, Quick, & Yanduli, 2000), working through community organizations, and getting individuals involved (Bhuyan, 2004). A report from a recent project in Bolivia documents the success of involving community members in everything from mapping the villages to priority setting for the program (Perry, Shanklin, & Schroeder, 2003). The former head of the United Kingdom’s National Health Service, Nigel Crisp, argues strongly that the quest for global health in the twenty-first century must involve a paradigm shift in which nations, communities, and indigenous peoples around the world have a much greater voice in the design and implementation of health services (Crisp, 2010).

Two projects in Chicago demonstrate the success of the community outreach worker approach. In one case, the project focuses on intravenous drug abusers, helping them to reduce their HIV/AIDS-related risk behaviors and to initiate drug abuse treatment programs. This work simply could not have been accomplished without the efforts of community outreach workers, all of whom are former addicts who know how and when to reach

current addicts. Also, the outreach workers come from the predominant cultural/ethnic group in each community (Booth & Wiebel, 1992; Wiebel, 1993; Wiebel et al., 1996). Similarly, the Chicago Project for Violence Prevention involves ex-gang members as outreach workers. Both programs have been adopted internationally as well as in other cities in the United States. A similar focus on peer group education in Botswana led to increased knowledge and prevention behaviors among women at risk for HIV/AIDS infection (Norr, Norr, McElmurray, Tlou, & Moeti, 2004).

## ► Methodologies for Understanding Culture and Behavior

Many of the research methodologies developed in the United States do not translate easily, literally, or figuratively to international settings. Differences in linguistic nuances, in the meanings of words and concepts, in what people would reveal to a stranger, and in what they would reveal to someone from their community have all complicated the application of the quantitative methodologies used by sociologists, psychologists, and epidemiologists. The realization of these problems came about gradually, through failed projects and missed interpretations, and especially once AIDS appeared. As a disease whose prevention is still largely behavioral, and with which many hidden or taboo behaviors are involved, AIDS highlighted the need for qualitative research and for research conducted by individuals from the cultures being studied. More recently, the Ebola pandemic of 2013–2016 reinforced the need to understand and address behaviors and beliefs as part of health interventions.

The field of global health has now moved from an almost exclusively quantitative orientation to the recognition that a toolbox of methodologies is available. Some of these tools may be more valuable than others for some situations or questions; at other times, a mix of several methodologies may offer the best approach. These methodologies derive from epidemiology, survey research, psychology, anthropology, marketing (including social marketing), and other fields. The biggest disagreement has been over the relative value of quantitative and qualitative methods.

The debate on the scientific value of qualitative versus quantitative research is well summarized by Peltos and Peltos (1978). They define *science* as the “accumulation of systematic and reliable knowledge about an aspect of the universe, carried out by empirical observation and interpreted in terms of the interrelating of

concepts referable to empirical observations” (p. 22). The Peltos add that “if the ‘personal factor’ in anthropology makes it automatically unscientific, then much of medical science, psychology, geography, and significant parts of all disciplines (including chemistry and physics) are unscientific” (p. 23).

In fact, scientific research is not truly objective, but rather is governed by the cultural framework and theoretical orientation of the researcher. One example of this bias can be found in the past tendency of biomedical researchers in the United States to focus on adult men for many health problems that also occur in women (such as heart disease). The earlier example of kuru also demonstrates the limitations of cultural bias.

Qualitative research techniques include the following:

- Observation: Behaviors are observed and recorded.
- Participant observation: The researcher learns by participating in cultural events and practices.
- Interviews: Both open-ended and semi-structured queries are possible, usually based on interview guides or checklists.
- Focus groups: A group of people are asked to discuss specific questions and topics.
- Document analysis: Existing documents and prior research are evaluated.
- Systematic data collection: This technique ranges widely, from photography and videotaping to asking informants to draw maps; sort cards with pictures, words, or objects; answer questions based on scales; and many more (Bernard, 2013; Peltos & Peltos, 1978; Scrimshaw & Hurtado, 1987).

A key feature of qualitative research is the use of these multiple methods to triangulate, or compare, data so as to ensure accuracy. With these approaches, the researcher does not simply rely on what is said, but can observe what is actually done. Another feature is that the researcher spends enough time in the community to be able to interview, observe, or otherwise evaluate the same individuals or behaviors multiple times, thereby further ensuring the depth and accuracy of the resulting data.

These techniques yield data that are descriptive and exploratory, and that serve to investigate little-understood phenomena, identify or discover important variables, and generate hypotheses for further research. Results are often explanatory, helping researchers to understand the social and cultural forces causing the phenomenon and to identify plausible causal networks. They also present the “voices” of the participants, and introduce context and meaning into the findings. They yield themes, patterns, concepts, and insights related to cultural phenomena. They can be particularly

valuable for behaviors that are often hidden, such as sexual risk taking and drug abuse (Dickson-Gomez, 2010; Wiebel, 1993). In evaluations, they help practitioners make judgments about a program, improve its effectiveness, and inform decisions about future programming, as illustrated in the case study on acceptability of an infant cereal found later in this chapter.

The methodological concepts of validity and reliability provide a common foundation for the integration of quantitative and qualitative techniques. *Validity* refers to the accuracy of scientific measurement—“the degree to which scientific observations measure what they purport to measure” (Pelto & Pelto, 1978, p. 33). For example, in Spanish Harlem in New York City, a study using the question “¿Sabe como evitar los hijos?” (“Do you know how to avoid [having] children?”) elicited responses on contraceptive methods and was used as the first in a series of questions on family planning. By not using family planning terminology at the outset, the study was able to avoid biasing respondents (Scrimshaw & Pasquariella, 1970). The same phrase in Ecuador, however, produced reactions like “I would never take out [abort] a child!” If the New York questionnaire had been applied in Ecuador without first testing it through semi-structured ethnographic interviews, the same words would have produced answers to what was, in fact, a different question (Scrimshaw, 1974). Qualitative methods often provide greater validity than quantitative methods because they rely on multiple data sources, including direct observation of behavior and multiple contacts with people over time. Thus, they can be used to increase the validity of survey research.

*Reliability* refers to replicability—the extent to which scientific observations can be repeated and the same results obtained. In general, this goal is best accomplished through survey research or other quantitative means. Surveys can test hypotheses and examine questions generated through qualitative data. Qualitative methods may help us discover a behavior or learn how to ask questions about it, while quantitative data can tell us how extensive the behavior is in a population and which other variables are associated with it.

Murray (1976) describes just such a discovery during qualitative research in a Haitian community, where a simple question—“Are you pregnant?”—had two meanings. Women could be pregnant with *gros ventre* (“big belly”) or could be pregnant and in *perdition*. Perdition meant a state where a woman was pregnant, but the baby was “stuck” in utero and refused to grow. Perdition was attributed to causes such as “cold” spirits, or ancestors. Women may be in perdition for years, and may be separated, divorced, or widowed, but the pregnancy is attributed to her partner when it

commenced. Murray subsequently included questions about perdition in a later survey, which revealed that it was apparently a cultural way of making infertility or subfecundity socially acceptable, as many women in perdition fell into these categories.

Surveys are effective tools for collecting data from a large sample, particularly when the distribution of a variable in a population is needed (e.g., the percentage of women who obtain prenatal care) or when rarely occurring events must be assessed (e.g., neonatal deaths). Surveys are also used to record people’s answers to questions about their behavior, motivations, perception of an event, and similar topics. Although surveys are carefully designed to collect data in the most objective manner possible, they often suffer inaccuracies based on respondents’ perceptions of their own behavior, their differing interpretations of the meaning of the question, or their desire to please the interviewer with their answers. Surveys also can encounter difficulty in uncovering motives (i.e., why individuals behave as they do), and they are not apt to uncover behaviors that may be consciously or unconsciously concealed. In “Truths and Untruths in Village Haiti: An Experiment in Third World Survey Research,” Chen and Murray (1976) describe some of these problems.

The traditional anthropological approach involves one person or a small team who remain at the research site for at least a year. This practice is intended to ensure that the findings take into account the changes in people’s lifestyles with the changes in seasons, activities, available food, and so on. Also, the anthropologist often needs time to learn a language or dialect and learn enough about the culture to provide a context for questions and observations. More recently, a subset of anthropological tools (ethnographic interview, participant observation, conversation, and observation) plus the market researchers’ tool of focus groups have been combined in a rapid anthropological assessment process known as the Rapid Assessment Procedure (RAP) (Scrimshaw, Carballo, Carael, Ramos, & Parker, 1992; Scrimshaw, Carballo, Ramos, & Blair, 1991; Scrimshaw & Hurtado, 1987).

RAP evolved around the same time as Rapid Rural Appraisal was developed by rural sociologists (Chambers, 1992). Both methods made listening to community voices easier for program planners and healthcare providers and became frequently used tools for program development and evaluation. RAP is designed to involve local researchers who already know the language and much of the cultural context. Such procedures have been developed for many topics, including AIDS, women’s health, diarrheal disease, seizure disorders, water and health, and childhood



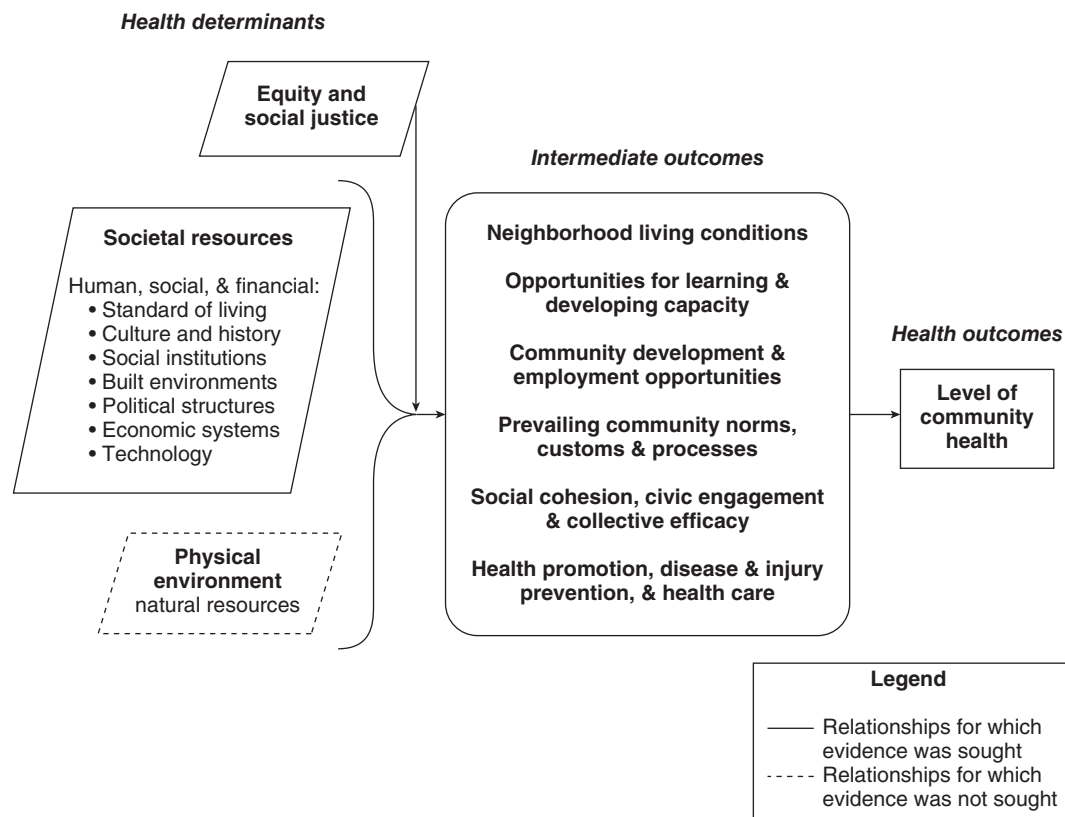
obesity prevention. RAP has become a generic concept, and has been modified for many uses. Modified titles include RARE, ERAP, and FES (focused ethnographic study). In the past 20 years, the RAP methodologies have been embraced by community members, researchers, and funders alike and have been broadly used in community participatory research.

The case study on the use of focused ethnographic methods to assess the feasibility of introducing a fortified infant cereal in an African country, which appears in the next section of this chapter, is a good example of the use and value of this approach. With a relatively small number of interviews, researchers were able to establish that the cereal as constituted and packaged would be unlikely to succeed. Minor modifications (i.e., a cereal that did not require cooking and was packaged in small amounts) were recommended to change the product's likely acceptability.

In community participatory research, community members become involved in the design, conduct, and interpretation of research. This approach has been used most often for health intervention and behavior change programs where community acceptance of such interventions and programs is essential for success. It also has been found to increase the validity (accuracy) of the data, as community members are invested in developing programs that work.

A final comment on methodology is that as the social sciences are increasingly combining methodologies and sharing each other's tools, it is also important to share theoretical approaches. Where methodology is concerned, this leads to using multilevel approaches to research, in which environment, biological factors, cognitive issues, societal and cultural context, and political and economic forces all can contribute to the analyses. This should take place at least to the extent that an examination is made of data one step above and one step below the phenomenon being explained (Rubenstein, Scrimshaw, & Morrissey, 2000).

An example of a logic framework using this approach can be found in the work of the Centers for Disease Control and Prevention (CDC) task force that developed and maintains the *Guide to Community Preventive Services*—a series of evidence-based recommendations for community public health practice based on a systematic and critical review of the evidence. Topics considered in the guide include major risk behaviors (e.g., tobacco use, alcohol abuse and misuse, other substance abuse, nutrition, physical activity, healthy sexual behavior), specific illnesses (e.g., cancer, diabetes), and one overarching topic, the sociocultural environment. **FIGURE 2-3** presents the logic framework for this topic. The outcomes of community health (on the right side of the figure) stem



**FIGURE 2-3** The *Guide to Community Preventive Services*' social environment and health model.

Reproduced from Anderson L. M., Scrimshaw S. C., Fullilove M. T., et al. (2003). The community guide's model for linking the social environment to health. *American Journal of Preventive Medicine*, 24(35), p. 13. Reprinted with permission from Elsevier.

from factors in the physical environment and societal resources; outcomes related to equity and social justice issues derive from factors on the left side of the figure. The immediate outcomes, which are listed in the middle of the figure, range from neighborhood living conditions to prevailing community norms regarding prevention and health care (Anderson, Fielding, et al., 2003; Anderson, Scrimshaw, et al., 2003). This approach greatly broadens the context for understanding and addressing the health of individuals and of communities.

The CDC's *Community Guide* can be accessed through the following website: [www.thecommunityguide.org](http://www.thecommunityguide.org). That website and related publications listed there provide evidence-based guidelines for improving community health, many of which have global relevance.

## ► Case Study: Use of a Focused Ethnographic Study to Assess the Acceptability of a Fortified Infant Cereal in Africa<sup>†\*</sup>

Earlier in this chapter, qualitative methods derived largely from anthropology were described as being important tools for ascertaining cultural facilitators and impediments to behavior changes that lead to improved health. As discussed then, these tools have been adapted for use in rapid assessment. This case study involves a rapid (focused) ethnographic study that was conducted before a new infant cereal was introduced to assess the potential success of this cereal by investigating household and local market behaviors.

Many infants and young children (IYC) in Africa continue to suffer from malnutrition or undernutrition. Where mothers breastfeed exclusively for at least six months, quality foods that complement the nutrients in human milk are important after six months when human milk alone is not adequate to meet nutritional needs.

In one African country, a project was devised to introduce a fortified cereal-based food that could help contribute to improved nutrition for infants and children consuming it. The aim of the focused ethnographic study was to determine whether families would purchase the food if available and, if the product was purchased, who actually consumed it. Why each

of these steps did or did not occur was also important to assess. The price of the product was pegged at the amount that most urban families, even the poor, could afford to spend per day for a cereal.

It was important to the researchers to make the study framework broad enough to include key variables, so that they could avoid mistakes made by intervention projects that fail to take important cultural, economic, access, and other factors into account. A household perspective was chosen because the purchase and preparation of the cereal would be done at the household level.

Research questions included the following items:

- How much are households currently spending on food for their infants?
- Are their current expenditures providing a nutritionally adequate diet?
- Do households that are spending less than  $x$  amount (e.g., cents/day) have the potential to shift their expenditures?
- Which other factors determine household buying and/or preparation of foods for the infant or young child, and would these other factors interfere with making a switch, even if the family could afford it monetarily?

It was also important to take into account the possible foods for infants and young children in this environment: (1) human milk, (2) home-prepared foods that are made for family members and are also given to the infant or young child, (3) home-prepared foods that are made exclusively for the infant or young child, (4) commercial products that are marketed and purchased for household consumption, (5) commercial products that are marketed and purchased exclusively for the infant or young child, and (6) commercial products that are marketed for household consumption, but are purchased exclusively for the infant or young child.

The focused ethnographic study interviewed key informants—people who had personal knowledge and experience in an area of concern to the project. Four different techniques were used:

1. *Free listing exercises.* The respondent is asked a question or set of questions that elicit a series of items (objects, events, issues) pertaining to a particular cultural domain. For example, the interviewer can ask, “What are all the different places where a person can get food for infants or young children?”

<sup>†\*</sup> This case study is based on Pelto, G. H., & Armar-Klemes, M. (2010). *Focused ethnographic study to assess the potential of a commercial complementary food*. Report prepared for the Global Alliance for Improved Nutrition, Geneva, Switzerland.

2. *Open-ended interviewing, with guiding questions.* In open-ended questions, the interviewer writes down what the respondent says in response to a question without using precoding. Questions can be broad or narrow—for example, “How do you prepare cereal for your baby?”
3. *Rating and ranking exercises.* Respondents are asked to rate and rank items such as foods and sources of health care. Methods include handing respondents’ cards with pictures of objects to be ranked and asking them to arrange these from most to least important, as well as asking them to assign the card to a slot along a continuum. (A similar technique for the latter method is the familiar scale of perceived pain.)
4. *Mapping exercises.* Respondents create visual maps on which they indicate the locations of specific features of concern for the researcher, such as places to obtain commercial foods.

In this case study, there were two main types of key informant-respondents: (1) women who gave information from the perspective of people who take care of children and (2) people who gave information from the perspective of marketing infant and young child foods. Thirty primary care givers, 10 alternate caregivers, and 12 sellers of these foods were interviewed. The sellers were divided into street vendors and keepers of small shops.

The results of the study provided evidence to answer the key question about the potential acceptability of a new fortified cereal for infants and young children. They revealed that fortified cereals are, indeed, used and accepted, and that a relatively high proportion of the food budget for households with infants is spent on these items. Thus the key question about a dietary niche for a fortified cereal was answered affirmatively.

Importantly, the study uncovered the reality that a food that must be cooked, however briefly, is *unlikely* to be chosen over instant foods that do not require cooking. Busy mothers will spend more money to purchase prepared cooked cereals from street vendor or buy small packets of instant cereal that can be mixed with water rather than cooking a cereal themselves. This was extremely important guidance, as it showed that the cereal planned for introduction would need to be modified so that it would not require cooking if it was to be a success.

Because families were already spending so much for these foods, there was clearly a niche for a lower-cost fortified cereal, but it must be instant and available in small packets to be a financially viable option for families. The findings of this study were valuable in planning a program to introduce the cereal, providing the guidance that healthcare practitioners needed to proceed with an appropriately modified product, and to avoid spending time and money on something that would not work.

## ► Case Study: The Slim Disease—HIV/AIDS in Sub-Saharan Africa<sup>‡\*</sup>

AIDS changed the way in which epidemiologic and behavioral research is conducted and health interventions designed and carried out. This case study illustrates virtually all the topics covered in this chapter.

### Epidemiology

As of 2016, an estimated 36.7 million adults and children were living with HIV/AIDS worldwide (UNAIDS, 2017). Nearly half (17.8 million) were women, and 2.1 million were children. Of the 36.7 million persons with HIV/AIDS, 19.4 million reside in eastern and southern Africa, among whom 59% are women and girls. In 2016, 77,000 new HIV infections in eastern and southern Africa occurred in children. Per capita rates of infection rates in the United States decreased by 18% between 2008 and 2014, as a result of a combination of aggressive use of antiretroviral therapies and prevention strategies (HIV.gov, 2017a, 2017b; WHO, 2010).

Unlike in the Western world, where AIDS was originally associated with gay men and injection-drug users, in Africa the most common route of transmission is through heterosexual sex. Men infect their partners (often wives) as a result of their involvement with other partners. A pregnant, HIV-positive woman may transmit the virus to her fetus through the placenta or to her infant through breastfeeding.

Generally, AIDS patients in Africa suffer from intestinal infections, skin disease, tuberculosis, herpes zoster, and meningitis. In the industrialized countries, AIDS is associated with Kaposi’s sarcoma (a skin cancer), meningitis, and pneumonia.

<sup>‡\*</sup> This case study was developed by Isabel Martinez, MPH.

Why does the same disease spread so differently from one region of the world to another? History, politics, economics, and cultural and social environments influence the course of a disease in a society. In the case of Africa, traditional family, social, and environmental structures were disrupted by European colonization, which imposed changes on the existing culture. Even after countries became independent from Europe, their political, ecological, and economic structures remained disrupted and often unstable. Many of these factors contributed to an environment in which AIDS easily took hold (Akeroyd, 1997; Bond, Kreniske, Susser, & Vincent, 1997; Hunt, 1989; Jok, 2001). These factors and their association with the AIDS pandemic are described in the following subsections. In addition to illustrating the relationship between cultural norms, prevention and healthcare access, and disease, this case study demonstrates the profound relationship between the general sociocultural, political, physical, and economic environment and health.

### Risk of AIDS Associated with Migratory Labor

The integral family structure of the African culture has been broken up by the migratory labor system in eastern, central, and southern Africa. This system was historically part of the region's industrial development and colonization by European powers. These large industries, which include mining, railroad work, plantation work, and primary production facilities (e.g., oil refineries), have absorbed a massive labor influx from rural areas. Men typically leave their homes and travel outside their communities to work sites, where they remain for long periods of time. This system has not only kept families apart, but also increased the numbers of sex partners for men—in turn, giving rise to a higher prevalence of sexually transmitted infections (STIs) and later AIDS. In many African cultures, regular sex is believed essential to health. Men in the migratory labor system have sex with prostitutes close to their work sites, become infected, and eventually return home and infect their wives, whose babies may in turn become infected (Hunt, 1989; Salopek, 2000).

### War

In 2017, there were 14 major armed conflicts and 29 additional armed conflicts globally. Of these 43 conflicts, 21 occurred in Africa. A country at war typically faces a weakening of its political system, and this situation in Africa has intensified the impact of the AIDS epidemic. Several populations become more vulnerable to HIV/AIDS during wartime, including those affected by food emergencies and scarcity, displaced persons,

and refugees. Women are especially at risk. They are six times more likely to contract HIV in refugee camps than women in populations that reside outside such camps. In addition, women are often victims of rape as a weapon of war by the enemy side. Armed forces and the commercial sex workers with whom soldiers interact are also affected by the epidemic (Akeroyd, 1997; Carballo & Siem, 1996; Jok, 2001, 2012; UNAIDS, 1999; United Nations, 1999a; Uppsala Conflict Data Program, n.d.; Wallensteen & Harbom, 2009).

### Gender Roles and Cultural Traditions

The African woman's struggle with the AIDS pandemic has been depicted often in the literature (Akeroyd, 1997; Carballo & Siem, 1996; Hunt, 1989; Messersmith, 1991; Salopek, 2000; UNAIDS, 1999; Watkins, 2004). The risk to women from husbands or partners returning from work in other areas has already been discussed. Another risk—sex work or prostitution by women as a means of survival—is now almost a death sentence in Africa, considering the great risk of contracting HIV/AIDS through such employment. There are many reasons why some African women find the need to engage in sex work, although studies have linked most of these reasons to a political economy context. Sex in exchange for favors, material goods, or money is conducted in all socioeconomic levels, from female entrepreneurs in foreign trade having to use sexual ploys to ensure business to impoverished young women needing money to support themselves and their families (Swidler & Watkins, 2007). Even if women in sex work are knowledgeable about preventing HIV infection through use of condoms, their cost and availability, combined with the resistance of some males to use them, raise barriers for the safety of these women and play a part in further transmission of the disease (Akeroyd, 1997; Messersmith, 1991).

Having multiple sexual partners has increasingly been implicated in raising the risk for HIV for both men and women (Helleringer, Kohlerb, & Kalilani-Phiric, 2009). Called “concurrency,” these practices are now a major focus of intervention efforts (Shelton, 2009).

Other cultural factors that place young women at greater risk for HIV infection include a superstition in some areas that having sex with a virgin will cure an HIV-infected man. Adolescent girls and young women are placed at higher risk of exposure to HIV due to the behavioral practices of engaging in sex with older men (Tulio de Oliveira et al., 2017). The practice of female circumcision also places young girls at risk. In both of these circumstances, the risk of contracting HIV through sex or infected surgical instruments increases for adolescents (Akeroyd, 1997; Salopek, 2000).



## Additional Cultural Beliefs

Secrecy regarding HIV/AIDS is common within some sub-Saharan cultures. Denying that AIDS is affecting one's community or that one is infected increases the chances that the virus will be transmitted to other people because preventive actions are not taken (Akeroyd, 1997; Salopek, 2000; UNAIDS, 1999; United Nations, 1999d). Preventive actions go beyond preventing sexual transmission, to include concerns about transmission during treatment of ill individuals and during funeral practices.

In some parts of Africa, AIDS is referred to as the "slim disease" because of the wasting away that occurs as a result of the infections. Because of this belief, men prefer sex with plump women, believing that they are not infected. AIDS is called "white man's disease" in Gabon and "that other thing" in Zimbabwe. HIV and AIDS are a source of shame and denial in these African cultures. AIDS is also considered a punishment for overindulgence of the body. One *sangoma* (faith healer), who has helped revive an ancient Zulu custom of virginity testing of young girls, supported her belief in reviving this custom by saying, "We have adopted too many Western things without thinking, and we lost respect for our bodies. This has allowed things like AIDS to come torture us" (Akeroyd, 1997; Hunt, 1989; Salopek, 2000; UNAIDS, 1999).

## Barriers to Prevention or Treatment of HIV/AIDS

Barriers to prevention of HIV/AIDS include lack of financial resources and allocation of funds to projects that might be less crucial than those related to health. For example, a foreign country funded a multimillion-dollar hospital in Zambia, even though the rural clinics where the majority of the population live are often not even stocked with aspirin (Bartholet, 2000; Salopek, 2000).

Changing people's health behavior and addressing cultural beliefs has also been a tough challenge when it comes to prevention efforts. Promoting safe sex and the use of contraception, as well as abstaining from some cultural rituals, can be perceived as changing traditional gender roles for both men and women, and may go against some religious values that are part of the core for some communities. The need to hide or look away from the problem of HIV/AIDS stems from the disgrace attached to the disease, which makes it difficult for people even to discuss it, much less be tested for this infection. The stigma of HIV/AIDS needs to be removed for prevention efforts to be more widely accepted by the African people (Akeroyd,

1997; Bartholet, 2000; Salopek, 2000; UNAIDS, 1999; United Nations, 1999c).

One project in Ghana used both the health belief model and social learning theory to examine the determinants of condom use to prevent HIV infection among youth. The authors of the study found that perceived barriers significantly interacted with perceived susceptibility and self-efficacy. Youth who perceived a high level of susceptibility to HIV infection and a low level of barriers to condom use were almost six times as likely to have used condoms at last intercourse. A high level of perceived self-efficacy and a low level of perceived barriers increased the likelihood of use three times (Adih & Alexander, 1999).

## Prevention Efforts by Community and Governmental Agencies and Nongovernmental Organizations

In the 1990s, Uganda and Senegal reduced their HIV infection rates through aggressive public education and condom promotion campaigns, expanded treatment programs for other STIs, mobilization of nongovernmental organizations (NGOs), and reduction of stigma for people with HIV/AIDS. Health officials believe the education efforts surrounding AIDS have contributed to women delaying the onset of sexual intercourse and increased condom use among sex workers and men and women who have casual sex (UNAIDS, 1999; United Nations, 1999a).

The theory of self-efficacy has proved useful in addressing AIDS. For example, one study in South Africa found that knowledge of risk and its prevention was important, but not sufficient to change behavior. The authors stress the need to improve personal autonomy in decision making about sexual behavior and condom use for both men and women through skills development programs that promote self-efficacy (Reddy, Meyer-Weitz, van den Borne, & Kok, 1999).

The United Nations and its specialized agencies have created major programs to assist countries and communities in prevention efforts, including joining forces to accelerate the development of experimental vaccines. Academic institutions have also teamed up with local community and church organizations to create prevention projects and help organize the communities to reach more of the public. These efforts have assisted in empowering many volunteers, mostly women, to motivate others in their communities through education and increasing women's negotiation skills for safe sex or condom use (Msiza-Makhubu, 1997; United Nations, 1999d; WHO, 1997).

There is also a growing movement in which doctors in Africa work with traditional healers to do outreach and education on AIDS. As discussed earlier, traditional healers have better access to many populations. People seek their help because of tradition and lack of adequate health care (Associated Press, 2000; Green, 1994).

## Antiretroviral Therapy

Donor agencies/organizations such as the Global Fund to Fight AIDS, TB, and Malaria; the U.S. President's Plan for AIDS Relief; the World Bank; the European Commission; WHO; and the Gates Foundation have aggressively provided testing for HIV/AIDS and antiretroviral (ARV) therapy during the past eight years, and infection rates have come down (UNAIDS, 2004a; WHO, 2004). Beginning in 2003, the United States implemented the President's Emergency Plan for AIDS Relief (PEPFAR/Emergency Plan). As of 2017, this program had provided antiretroviral treatment (ART) to more than 11 million HIV-infected people and supported HIV testing and counseling (HTC) for more than 56.7 million people (PEPFAR, 2017).

Innovative prevention programs such as the introduction of male circumcision in areas where it had not been practiced are also helping to reduce infection rates. Male circumcision has been found to help protect against infection, reducing transmission rates by as much as 60% (Bailey & Mehta, 2009; Bailey et al., 2007; Tobian et al., 2009; Westercamp & Bailey, 2007).

## Antiretroviral Treatment Challenges

Diminished political and economic support for antiretroviral programs could lead to the interruption of treatment of HIV/AIDS patients, which in turn would provide the HIV virus with the potential to become drug resistant. Other challenges in Africa include a shortage of health professionals, many of whom have left their home countries for better opportunities in higher-income countries. In addition, a lack of treatment literacy poses a huge challenge for effective antiretroviral treatment (UNAIDS, 2004b).

The individual behaviors that place people at risk are part of the larger root causes of the problem in Africa, including colonialism, big industry's design of mass labor migration, poverty, gender inequalities, and war. The ideal prevention and intervention strategies would address health behavior changes as well as economic and community barriers to the provision of social services and treatment options (Akeroyd, 1997; Bond et al., 1997; Tylor, 1871; United Nations, 1999c, 1999d; WHO, 1997).

## ► Ebola

The Ebola virus shares several characteristics with HIV/AIDS. First identified in 1976, Ebola is a newly emergent infection. Beginning as a zoonotic disease that infected fruit bats, nonhuman primates, and other mammals, it "jumped species" to infect humans as a result of ecological disruption—in this case, hunting wild animals for food or what is called "bush meat." An Ebola pandemic in 2013–2016 that was centered in the West African countries of Liberia, Sierra Leone, and Guinea infected some 17,145 individuals, among whom 6,070 died. The short interval between recognition of symptoms and death of 6–16 days, the appalling fatality rate of 25% to 90%, and the lack of effective antimicrobial agents and preventive vaccines produced panic that often impeded global health strategies to reduce infection and provide supportive care to the infected.

The two hardest-hit countries—Liberia and Sierra Leone—are impoverished. Liberia ranks 182th out of 187 countries in the United Nations Human Development Index; Sierra Leone comes in at 180 (United Nations Development Programme, 2017). Cultural patterns of care for the sick and dying, as well as careful tending of the dead in preparation for burial, were found to increase Ebola transmission, because contact with body fluids—even sweat—in the context of cleaning, feeding, or moving an infected person can lead to transmission (CDC, 2015).

When American and European global health personnel first arrived to help fight the epidemic, in many cases they were greeted with fear and even violence by villagers, who, upon seeing the Westerners in hazmat suits, resisted their approach and often hid their sick family members. A new psychosocial paradigm called "fear-related behaviors" in situations of mass threat is now recognized as an expected reaction to disasters and must be planned for with clear communication, cultural understanding, and the close collaboration of foreign public health workers with local professional and community leaders (Espinola et al., 2016). Viewed from this perspective, the panicked responses of the African villagers were not irrational (Richardson et al., 2016). Beginning with the slave trade and colonialism, Western incursions into Liberia and Sierra Leone have caused immense suffering. Further complicating the cultural misunderstandings is the fact that Liberia has 31 separate languages and Sierra Leone has 25 (Rodriguez, 1997).

With Ebola deaths mounting and the evidence that the health systems of the affected West African countries were under-resourced and overwhelmed, numerous well-meaning multinational, governmental, and nongovernmental agencies rushed to the scene to help.

Grieving African family members were not allowed to touch or kiss their dead. Rather than observing time-honored funereal practices, they were instead obliged to place their deceased loved ones in plastic bags, to be buried with chloride disinfectant. Those and other measures to prevent transmission represented enormous changes in cultural practices around death and dying, but they worked to reduce transmission (Agusto, Teboh-Ewungkem, & Gumel, 2015). Analyses of the Ebola pandemic, and the behavioral changes that led to decreases in transmission, demonstrated that serious attention to clear communication and understanding of cultural patterns are critical elements of responses to outbreaks and disasters.

## ► Conclusion

This chapter has briefly explored cultural and behavioral issues that influence global health. Anthropology, sociology, and psychology have much greater depth in terms of both methods and theories than can be described in this chapter. A rich and extensive literature exists on health beliefs and behaviors, environmental and biological contexts, health systems, and programmatic successes and failures. It is essential to take these factors into account when contemplating global health work. In addition, a program must consider structural factors, such as setting, hours, child care, and ambience, as well as factors of content, such as culturally acceptable services, which includes providers who treat patients with respect and understanding.

Research and preventive services regarding health beliefs and behaviors must accept and integrate concepts different from those held by Western biomedicine, by middle- or upper-class healthcare providers, or by healthcare providers from an ethnic or cultural group that is different from their patients. This requirement demands the ability inherent in some of the anthropological methods and approaches discussed earlier—that is, the ability to “get into someone’s head” and understand things from an insider perspective. There is nothing like the experience of spending time with people, in their own homes or community, and striving to reach that insider understanding.

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## Discussion Questions

1. Which prevention strategies for AIDS would you develop if you were the minister of health of a sub-Saharan African country? Which strategies would you use if you were a community leader? Would the strategies used for these two perspectives differ? If so, how? How would you address some of the cultural beliefs or traditions associated with HIV/AIDS mentioned in the case study?
2. If you were entering a community to introduce a health program, who would you talk to? What would you ask? Why?
3. Discuss the concepts of validity and reliability in research as they apply to the use of quantitative and qualitative methods. Next, discuss the same concepts as they apply to community participatory research.
4. What is the hot/cold illness belief system? Why is it important? How would you incorporate it into a maternal and child health program?
5. Many people believe that healers such as midwives and shamans are called to their profession by a greater spiritual power. What significance does this belief have for official health programs around the world? How should they address this belief?
6. If an indigenous practice seems peculiar to you, but does no apparent harm, what should you do?
7. How could you learn what people in a community really believe about health and illness?
8. Based on the theories of behavior change, create your own model by taking what you think is the best content from existing theories. Explain your reasoning.
9. How would you balance the need to interrupt Ebola transmission in a situation such as the recent West African outbreak with the importance of addressing the fears and panic of the population?



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