

1

What Is Health Anxiety?

“I’ve been sickly ever since I was a kid. For the past week I’ve been feeling out of sorts, but not in a way I can clearly describe. I’m sure something’s wrong. I’m scared I might have MS [multiple sclerosis]. Or maybe it’s AIDS.”

“Every morning in the bathroom I check my body for unusual moles and lesions. Today I found a bump on my skin that I hadn’t noticed before. I couldn’t stop worrying that it might be cancer. As I prodded and squeezed the bump to check it out, it got bigger, redder, and angrier. That really frightened me, to the point that I had to snip it off with nail clippers.”

These people are physically healthy, as their physicians have told them—repeatedly. They are suffering from excessive health anxiety. The purpose of this book is to describe the nature, assessment, and treatment of health anxiety disorders, including hypochondriasis, the various forms of abridged hypochondriasis (among which we include disease phobia), and delusional disorder (somatic type). These are all characterized by excessive anxiety about one’s health, stemming from beliefs that one’s physical integrity is threatened. Like other forms of anxiety (Lang, 1985), health anxiety is a multifaceted phenomenon, consisting of distressing emotions (e.g., fear, dread), physiological arousal and associated bodily sensations (e.g., palpitations), thoughts and images of danger, and avoidance and other defensive behaviors. Health anxiety ranges from mild and transient to severe and chronic. Our emphasis is on the

more debilitating, persistent forms, particularly hypochondriasis. We begin this chapter by defining health anxiety and distinguishing its adaptive and maladaptive forms. We then describe the clinical features of hypochondriasis and related disorders, and explain why health anxiety disorders are important for health care practitioners to understand, detect, and treat.

WHEN IS HEALTH ANXIETY MALADAPTIVE?

Health anxiety varies in the extent to which it is adaptive versus excessive or maladaptive. Virtually all of us have experienced health anxiety at times in our lives. Often the anxiety is adaptive because it motivates us to seek appropriate medical care. Worry about chest pain in a person with a history of cardiac disease, for example, can lead him or her to promptly summon an ambulance when the pain occurs, thereby reducing the risk of mortality.

Health anxiety is maladaptive if it is out of proportion with the objective degree of medical risk. Low anxiety in the face of high risk or high anxiety in the face of low risk can be maladaptive. Lack of worry about the health risks of smoking, for example, can have deadly consequences. Conversely, excessive worry about minor, harmless bodily changes (e.g., spots or rashes) or bodily sensations (e.g., muscle twinges) can cause undue suffering and impairment in social and occupational functioning. The nature and causes of insufficient concern about one's health are not the primary focus of this volume but are discussed in texts on health psychology (e.g., S. E. Taylor, 1999).

HYPOCHONDRIASIS

Diagnostic Criteria

Table 1.1 lists the DSM-IV criteria for hypochondriasis (American Psychiatric Association [APA], 2000). Table 1.2 expands on these criteria by describing the cognitive, emotional, somatic, and behavioral features of hypochondriasis. Table 1.1 is useful for diagnosing hypochondriasis, whereas Table 1.2 better conveys the clinical features of this disorder. These features often, but not always, co-occur.

Cognitive Features

The belief that one is physically ill is known as *disease conviction*. People with hypochondriasis have strong disease convictions, insisting that they have a serious disease that has been undetected by medical investigations. Disease convictions arise from misinterpretations of bodily changes and sensations.

TABLE 1.1. DSM-IV Diagnostic Criteria for Hypochondriasis

A.	Preoccupation with fears of having a serious disease, or the idea that one has such a disease, based in misinterpretation of one's bodily sensations or changes.
B.	Preoccupation persists despite appropriate medical evaluation and reassurance.
C.	The idea that one has a serious disease is not of delusion intensity (as in delusional disorder) and is not restricted to concerns about one's appearance (as in body dysmorphic disorder).
D.	The preoccupation causes significant distress or impairment in social, occupational, or other important areas of functioning.
E.	Duration for at least 6 months.
F.	The preoccupation is not better accounted for by another disorder, such as another somatoform disorder or major depressive disorder.
Poor-insight specifier:	The person is said to have poor insight if, for most of the time during the course of the disorder, he or she does not recognize that his or her concern about having a serious disease is excessive or unreasonable.

Note. Adapted from American Psychiatric Association (2000, p. 507). Copyright 2000 by the American Psychiatric Association. Adapted by permission.

TABLE 1.2. Clinical Features of Hypochondriasis

Cognitive features

- Disease conviction: Belief that one has a serious disease
- Disease preoccupation: Recurrent thoughts and images of disease and death
- Hypervigilance for bodily changes
- Difficulty accepting medical reassurance

Somatic features

- Anxiety-related bodily reactions (e.g., palpitations)
- Benign bodily changes and sensations (e.g., blemishes, mild aches and pains) that are misinterpreted

Hypochondriacal fears

- Fear of currently having a disease
- Fear of contracting a disease in the future
- Fear or anxiety on exposure to disease-related stimuli

Behavioral responses

- Repeatedly checking one's body
 - Reassurance seeking (e.g., from physicians or significant others) that one does not have serious symptoms or diseases
 - Repeated requests for medical tests
 - Checking other sources of medical information (e.g., Internet searches of medical websites)
 - Avoiding or escaping disease-related stimuli
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Strong disease conviction is associated with *preoccupation* with the possibility of having some dire disease. This is associated with preoccupation with one's bodily appearance and functioning, and hypervigilance for bodily sensations. People suffering from hypochondriasis experience recurrent thoughts and images of disease and death, which intrude, often unbidden, into the stream of consciousness (Warwick & Salkovskis, 1989). One hypochondriasis patient, for example, was bothered by recurrent thoughts that she was about to die from HIV. Her thoughts were accompanied by distressing images of "being pushed into a coffin and buried alive because she is bad" and "husband and son cheerfully visiting her grave with another woman whom he calls mummy" (Wells & Hackmann, 1993, p. 268).

Disease conviction and preoccupation persist even though the person receives reassurance from physicians that there is no evidence of serious disease, and even though the frightening "symptoms" rarely become progressively worse (as might happen in the case of a serious physical condition). People with hypochondriasis typically resist the idea that they are suffering from a mental disorder. Although they may have poor insight into the excessive nature of their health anxiety, by definition they are not delusional. They are able to acknowledge, at least in their calmer moments, that their health concerns are exaggerated.

Somatic Features

People with hypochondriasis tend to misinterpret the seriousness of innocuous, natural bodily fluctuations, and overestimate the seriousness of symptoms of general medical conditions¹ (Côté et al., 1996). They may complain of highly specific symptoms, or report symptoms that are vague, variable, and generalized (e.g., aching "all over"). Common specific symptoms include localized pain, bowel complaints (e.g., changes in bowel habits), and cardio-respiratory sensations (e.g., chest tightness). People with hypochondriasis are more concerned with the meaning of their physical symptoms than with any associated discomfort or pain (Barsky & Klerman, 1983).

Hypochondriacal Fears

People with hypochondriasis have some form of disease fear (Kellner, 1985; Noyes, Stuart, Longley, Longbehn, & Happel, 2002). There are two types: fear that one *currently has* a disease, and fear that one *might contract* a disease in

¹Throughout this text we adopt the term *general medical condition* (APA, 2000) to refer to all medical disorders apart from psychiatric disorders.

the future. A person can simultaneously have both types of fear, perhaps because both are associated with fears of dying and death. When Jane W. noticed mildly painful sensations around her eyes, she was preoccupied with fear of having a brain tumor. Jane also feared that some day she might have another bout of blepharitis (eyelid inflammation). She had had bouts in the past and worried that further episodes might lead to blindness.

Disease conviction is closely associated with fear of currently having a disease, and is also correlated with fear of contracting a disease in the future (Cox, Borger, Asmundson, & Taylor, 2000; Hadjistavropoulos, Frombach, & Amundson, 1999; Stewart & Watt, 2000). Fear of having a disease is more central to full-blown hypochondriasis than fear of acquiring a future disease (Côté et al., 1996). The latter fear is a core feature of one of the other health anxiety disorders we discuss in this book: disease phobia.

People with disease fears become frightened or anxious when exposed to stimuli that they believe to be disease-related, such as bodily sensations or other somatic changes. These people also become anxious when exposed to disease-related information, such as medical TV programs, which can lead them to worry that they might have acquired the disease in question. They also often become anxious if they come into contact with people who appear to be ill.

The two disease fears can be functionally related: fear of having a disease (and associated disease conviction) can lead to fears of contracting other diseases. Bob H. was frightened that his immune system had been dangerously weakened because of exposure to solvents at work. He interpreted various bodily sensations, such as fatigue and nasal congestion, as evidence of immunological impairment. Bob also feared that he might someday come down with Asian flu, which he thought would certainly kill him because of his compromised immune system. Thus, his fear of Asian flu was a result of his fear (and associated belief) that his immune system had been compromised.

A person can shift from fear of contracting a disease to fear of actually having the disease. George K. had had a serious anaphylactic (allergic) reaction during childhood after eating a handful of peanuts. The attack was rapid and extreme; his face puffed up like a balloon, his tongue swelled, and his throat tightened to the point that he could barely breathe. George would have died if his mother had not rushed him to hospital. As an adult, George constantly feared he would have a future, possibly lethal, anaphylactic attack. On several occasions he believed he was actually having an attack. One day while eating a banana he noticed that the back of his throat felt scratchy. He misinterpreted this as a symptom of anaphylaxis. He became so frightened that he called an ambulance. Thus, there was a shift in George's focus of apprehension, from fear of contracting a disease to fear of actually having the disease.

Behavioral Reactions

Behavioral Consequences of Fear of Having a Disease

It is important to distinguish between the two forms of disease fear because they can lead to different behavioral reactions: reassurance seeking and checking versus avoidance and escape (Côté et al., 1996). Fear of having a disease is associated with reassurance seeking (e.g., from primary care physicians), recurrent checking of one's body (e.g., frequent breast self-examinations), seeking out other sources of information on the dreaded disease (e.g., checking medical textbooks), and trying various kinds of remedies (e.g., herbal preparations).

Sufferers may perpetually adopt a "sick role," living as an invalid and avoiding all effortful occupational and home responsibilities (Barsky, 1992). They may persistently complain about their health, discussing their concerns in great detail with anyone who will listen. They frequently seek medical attention even though these consultations rarely confirm their beliefs about having a serious disease. During medical appointments they are often difficult to interrupt in terms of discussion about their health concerns. This is what some frustrated clinicians disparagingly call the "organ recital." It reflects the patient's preoccupation with disease.

Patients with hypochondriasis often have poor relationships with their physicians. Frustration and anger on the part of physician and patient are not uncommon (APA, 2000). Physicians, particularly those working in primary care settings, may have only 15–20 minutes for each consultation, which makes it difficult to thoroughly assess patients with long detailed histories of health anxiety. Physicians also may lack the expertise required to assess and treat health anxiety disorders. These factors can contribute to physician frustration. On the other side of the coin, patients may feel that their physicians are not taking them seriously, and worry that their physicians are not sufficiently competent. People with hypochondriasis commonly complain that their physicians are unable to satisfactorily explain or treat their bodily complaints. This may prompt the person to go "doctor shopping." That is, he or she may visit many different physicians in the hope of finding help (Kasteler, Kane, Olsen, & Thetford, 1976; Sato, Takerchi, Shirahama, Fukui, & Gude, 1995). As a result of doctor shopping, some people with hypochondriasis undergo many different medical and surgical treatments, which can produce troubling side effects or treatment complications, such as scarring and pain from repeated surgeries. Thus, hypochondriasis can be worsened by iatrogenic (physician-induced) factors.

Many people with hypochondriasis repeatedly visit hospital emergency rooms (ERs), believing that *this time* there is something seriously wrong with

them. When the patient repeatedly “cries wolf,” the physician may grow dismissive of his or her complaints. Such frequent ER attendees are sometimes put on “time-out” by the attending physicians. That is, the patient is made to wait an inordinate amount of time, sometimes for several hours, before being seen by a physician. This strategy is thought to make ER visits unpleasant for the patient, thereby reducing his or her incentive for repeatedly making unnecessary hospital visits.

Unfortunately, a dismissive approach by physicians can fuel patients’ concerns that they are not getting proper medical care. In turn, this can strengthen their belief that they have a serious undiagnosed medical condition. Although it is tempting for busy clinicians to dismiss concerns voiced by the “worried well,” one should not assume that their fears are always unfounded. People with hypochondriasis—like everyone else—will eventually succumb to some deadly affliction, such as cancer or cardiovascular disease. Periodic medical evaluations are required for people with hypochondriasis, just as they are necessary for everyone else. Routine evaluations are particularly important for older adults with hypochondriasis, where general medical conditions are quite likely to be present.

Behavioral Consequences of Fear of Contracting a Disease

Fear of acquiring a disease is associated with avoidance and escape from stimuli that the person believes to be associated with disease. For example, he or she may avoid hospitals, avoid sickly looking people, and limiting contact with people exposed to sickness such as physicians and nurses. Fear that one might contract a disease can also lead to avoidance of all reminders of the disease. Alan V., for example, had an extremely strong fear of contracting cancer. He avoided all things associated with cancer, including newspapers and magazines that carried stories about people battling cancer, TV programs about stars who had battled cancer, and foods supposedly containing potential carcinogens.

Understanding Behavior by Understanding the Interplay among Disease Fears

The fact that a person can shift from one disease fear to the other, means that health anxious people may shift from avoidance to repetitive checking and reassurance seeking. Understanding the nature of their patients’ fears can therefore help clinicians understand why health-anxious people sometimes avoid and sometimes seek out disease-related stimuli. People who are frightened of contracting a disease tend to avoid disease-related stimuli such as hospitals and

physicians. But when they believe they have acquired the disease they will seek out these stimuli, sometimes assiduously.

Becky A. intentionally avoided performing breast self-examinations as part of her fear and avoidance of all things related to breast cancer. The only checking performed was a yearly mammogram by her doctor. When an annual checkup revealed a small benign cyst, Becky feared that she had developed cancer. Removal of the cyst did not assuage her fears. Becky began to compulsively check her breasts to determine whether she had other cysts. At times she palpated her breasts until they were sore, and she visited her doctor weekly for reassurance.

Health Habits

People with hypochondriasis often pursue various forms of self-diagnosis and self-treatment (Barsky, Wyshak, & Klerman, 1986) and some, in fact, may have little contact with the medical system. “A preoccupation with one’s body, disease, and health may be found among the impassioned proponents of health foods, rigid diets, and elaborate vitamin regimens and among physical fitness and exercise fanatics” (Barsky & Klerman, 1983, p. 274). These people probably represent only a subgroup of cases of hypochondriasis. The majority have no better health habits than people without the disorder. They are just as likely to smoke, eat fatty foods, drink too much coffee or alcohol, and fail to exercise regularly (APA, 2000).

How can we account for this paradoxical coexistence of excessively high health anxiety and average or even poor health habits? It appears that many people with hypochondriasis are “symptom-driven” in their behavior. Their activities seem to be motivated largely by the presence of bodily changes and sensations. These people appear to be more intent on escaping current disease threats than on promoting their health. In our clinical experience, this is especially true for people who fear that they currently have a disease. A healthy lifestyle seems to be more common in people who are frightened of acquiring a future disease, particularly people who believe that such a lifestyle will help them avoid some dreaded affliction.

Hypochondriasis and General Medical Conditions

Although a person suffering from hypochondriasis may have a coexisting general medical condition, a diagnosis of hypochondriasis is only made when the general medical condition does not fully account for the person’s concerns about disease or for his or her bodily changes or sensations (APA, 2000). This is illustrated by the following examples (Schmidt, 1994):

- Hypochondriasis would be diagnosed when the person catastrophically misinterprets medical information about a general medical condition. Bill B. suffered from benign prostate hypertrophy (enlargement). His primary care physician told him that his screening test for prostate cancer was negative. Bill misinterpreted “negative” as meaning “very bad news,” and therefore believed he had cancer. When his physician tried to correct this misconception, Bill worried that the doctor was simply trying to soften the bad news because Bill was so clearly distressed.
- When a person has a serious medical condition with a good prognosis, hypochondriasis would be diagnosed when she or he becomes excessively anxious about the prognosis and is unable to accept the physician’s reassurance. Joanne T. had a congenital cardiac defect that required an artificial valve. Despite being told by her cardiologist that the prognosis was excellent, Joanne greatly feared she would soon die. She was preoccupied with the clicking sound made by the valve, and kept focusing on the noise in order to check that her heart was beating properly.
- Hypochondriasis would be diagnosed when the disease fear or disease conviction is based on bodily changes and sensations that have nothing to do with the diagnosed disease. Daniel P. was involved in a serious motor accident that left him a paraplegic. Although he felt distressed and vulnerable as a result of the disability, he was more concerned about developing cancer. During his stay in the hospital he met several terminal cancer patients from an adjacent ward who were obviously in a great deal of pain and suffering. This greatly frightened Daniel, and he became preoccupied with getting cancer.
- Hypochondriasis would be diagnosed when there is evidence that it was present before the development of a general medical condition.

Intermittent bouts of medically verified disease might sometimes reinforce hypochondriacal beliefs. However, the opposite can also occur. The diagnosis of serious medical disease—in patients with accurately diagnosed hypochondriasis—sometimes ameliorates hypochondriacal symptoms because the disease legitimizes the patients’ complaints, sanctions their assumption of the sick role, affirms their experience of illness, and lessens the skepticism with which they had been previously regarded (Barsky, Fama, Bailey, & Ahern, 1998b). Patients with hypochondriasis sometimes describe a sense of vindication and validation after receiving a diagnosis of a general medical condition, and they note an improvement in their relationships with their physicians: “Now that I know Dr X. is paying attention to me, I can believe him when he says there’s nothing wrong” (Barsky et al., 1998b).

Relationship between Hypochondriasis and Other Psychiatric Disorders

Hypochondriasis frequently co-occurs with mood disorders, anxiety disorders, and somatization disorder (Noyes, 2001). To illustrate, among patients with hypochondriasis assessed in primary care settings, 38–43% had concurrent major depression, which was significantly higher than the frequency of major depression in primary care patients without hypochondriasis (16–18%). Similarly, panic disorder was more common in primary care patients with hypochondriasis (16–17%) than in their counterparts without hypochondriasis (3–6%) (Barsky, Barnett, & Cleary, 1994a; Noyes et al., 1994b).

Comorbidity has two important implications. First, it raises questions about how a particular patient should be treated. If someone has hypochondriasis and major depression, should the clinician try to treat both disorders at once, or should one disorder be treated first? A case formulation (see Chapter 6) can help answer this question. Second, comorbidity patterns might shed light on the causes of hypochondriasis. If hypochondriasis commonly co-occurs with other disorders, then this might indicate a common etiology. A further suggestion of shared etiology arises from the fact that hypochondriasis is phenomenologically similar to several of the disorders with which it commonly co-occurs. Like somatization disorder, hypochondriasis is associated with medically unexplained symptoms. Like obsessive-compulsive disorder, hypochondriasis is associated with behaviors that the person feels compelled to perform, such as reassurance seeking and repeatedly checking one's body. Like major depression, hypochondriasis is associated with somatic complaints (e.g., poor sleep, poor appetite, lack of energy) and pessimism about one's future.

These similarities and comorbidity patterns have led some theorists to speculate that hypochondriasis is really a form of some other disorder. Some investigators have suggested that hypochondriasis and somatization disorder are the same thing (Cloninger, Sigvardsson, von Knorring, & Bohman, 1984; Escobar, Swartz, Rubin-Stipek, & Manu, 1991; Vaillant, 1984). Others have suggested that hypochondriasis is an obsessive-compulsive spectrum disorder (Hollander, 1993; Stein, 2000; Yaryura-Tobias & Neziroglu, 1997).

Other writers have speculated that hypochondriasis is a “masked” form of depression (Goodstein, 1985; Lesse, 1980) or a psychodynamic defense against depression (Dorfman, 1968). If hypochondriasis is a defense against depression, then one would expect patients with hypochondriasis to be less depressed than psychiatric patients without hypochondriasis. Research has failed to support this prediction; hypochondriasis patients tend to be just as depressed as psychiatric controls, if not more so (Kellner, Abbott, Winslow, & Pathak, 1989). Moreover, when hypochondriasis is treated (e.g., with cognitive-behavioral therapy), there is little evidence that an underlying (“un-

masked”) mood disorder arises. Indeed, the evidence suggests the opposite. When treatment reduces hypochondriasis, there is a tendency for depression also to abate (see Chapter 5). Thus, the “masked depression” and psychodynamic defense hypotheses are inconsistent with empirical findings. The issue of whether hypochondriasis has a common etiology with other disorders is examined in Chapter 2.

OTHER CLINICALLY IMPORTANT FORMS OF HEALTH ANXIETY

Abridged Hypochondriasis

Health anxiety, as the primary (most severe) presenting problem, can be clinically important even when the person does not meet the full DSM-IV criteria for hypochondriasis. This form of health anxiety has been called *abridged hypochondriasis* (Gureje, Üstün, & Simon, 1997), which differs from full-blown hypochondriasis in that one or more of the diagnostic features of hypochondriasis are not present (see Table 1.1). For example, the person might be preoccupied with fears of having a serious disease but eventually responds to appropriate medical reassurance (i.e., she or he meets all but criterion B). Alternatively, the person could be preoccupied with fears of disease and be impervious to medical reassurance, but still be able to function reasonably well (i.e., she or he merits all but criterion D).

Joan F. had experienced many episodes of health anxiety, often in reaction to news stories she encountered. Most recently, she read a news report claiming that cellular phones caused leukemia. Joan began to worry that she too had leukemia. After all, her cell phone became quite hot after a full day of use. Wasn't that a sign of deadly radiation? A thorough medical evaluation yielded no evidence of leukemia. Joan was eventually able to accept this reassurance, although she soon began to worry about other potential health problems, such as viruses borne through the air conditioning. Despite a long-standing history of health anxiety, her distress was never severe or incapacitating. Therefore, she was diagnosed with abridged rather than full-blown hypochondriasis.

Transient Hypochondriasis

Transient hypochondriasis is another common term used to describe health anxiety that does not fully meet the DSM-IV criteria for hypochondriasis. *Transient hypochondriasis* is actually a form of abridged hypochondriasis in which clinically significant health anxiety lasts for no more than 6 months (i.e., it meets all but criterion E). Transient hypochondriasis, like other forms

of excessive health anxiety, can be triggered by general medical conditions and by other life stressors (Barsky, Wyshak, & Klerman, 1990b; Ford, 1983; Kellner, 1986).

Various factors may influence whether hypochondriasis is transient or chronic. The disorder is more likely to be chronic when (1) the person receives incentives (“secondary gains”) for remaining in the sick role, (2) when life stressors are persistent (causing arousal-related bodily sensations that the person misinterprets), and (3) when the person is socially isolated and therefore has more opportunity to dwell on his or her body (Barsky et al., 1990b). Hypochondriasis is likely to be transient when the life stressors have abated, such as when a medical condition has resolved (Barsky et al., 1990b) or when the person obtains persuasive medical assurance that he or she does not have a serious medical condition.

John B. was on vacation in Mexico when he noticed a small amount of rectal bleeding after a bowel movement. John reacted with horror because he vividly recalled his father’s slow, painful death from colon cancer. John feared that he too had developed a cancerous polyp. During each day of his week-long vacation he thought of nothing but the possibility of cancer. His wife complained that he seemed distant and distracted, and he often excused himself from recreational activities to go to the washroom and check for blood. John’s worries were eventually assuaged when, on returning home, his physician told him that there was no sign of cancer: he simply had hemorrhoids. John’s health anxiety quickly abated because he trusted his doctor’s opinion and found the explanation to be quite plausible. John’s doctor pointed out that the tests were negative, that the bleeding was mild and sporadic, and that this pattern was inconsistent with the progressive development of cancer.

Increased knowledge about diseases can lead to transient increases in health anxiety. This is exemplified by *medical student’s disease*, which is the short-lived increase in anxiety that occurs when medical students learn about various life-threatening maladies (see Chapter 4). Another potent source of disease-related information is the news media, which can play a prominent role in triggering transient hypochondriasis. Shortly after the terrorist attacks of September 11, 2001, there was a wave of bioterrorism consisting of a small number of actual exposures to anthrax spores mailed in letters, along with a large number of hoaxes and other false alarms. Some people coped with these threats by telling themselves that “it will never happen to me.” They reminded themselves that the likelihood of contamination was minuscule compared to the risk of everyday threats, such as the odds of being in a serious motor vehicle accident. This coping strategy prevented most people from feeling anxious and allowed them to carry on with the important tasks in their lives. But other people reacted by becoming highly anxious and hypervigilant

for threat. They became alarmed when they experienced minor ailments, such as sore throats or chest congestion, worrying that their symptoms could be due to anthrax exposure. These people adopted a “better safe than sorry” approach by engaging in various sorts of protective behaviors. Some donned gas masks and protective gloves before opening their mail, while others stockpiled antibiotics. Most episodes of excessive health anxiety appeared to be short-lived, typically lasting for no more than a few weeks and abating once the threat of bioterrorism receded. Nevertheless, these transient hypochondriacal reactions significantly impaired the functioning of many people.

Disease Phobia

Specific phobia of acquiring or being exposed to a disease is a DSM-IV anxiety disorder. It is associated with distress, apprehension, and avoidance of situations that may, in the mind of the person, lead to contracting the dreaded disease (APA, 2000). Disease phobia is commonly a feature of full-blown hypochondriasis (Kellner, 1985; Marks, 1987; Pilowsky, 1967), although it can exist on its own, without the other features of hypochondriasis. The person with disease phobia is fearful of contracting a disease, but does not believe that he or she has already contracted it, and may respond to medical reassurance. Thus, we share Marks’s (1987) view that disease phobia is an abridged form of hypochondriasis.

Unlike people with full-blown hypochondriasis, people with disease phobia do not typically possess the symptoms of the disease they fear contracting, although they may present with somatic symptoms of anxiety (Côté et al., 1996). Someone phobic of developing skin cancer, for example, would not typically complain of skin lesions, but might complain of nervousness, muscle tension, sweating, and palpitations.

Disease phobia can take a variety of forms, with the most common being fear of developing cancer or acquiring a communicable disease. Paul S. presented with a severe phobia of contracting HIV, associated with fear and avoidance of public washrooms. Although he acknowledged that it was unlikely that he could get HIV from public washrooms, he believed that infection was still possible. He worried that if he had to use a public washroom, the virus might make its way into his body through the pores of his skin.

Somatic Delusions

We include delusional disorder (somatic type) among the health anxiety disorders because of the increasing recognition that delusions are on a continuum with other beliefs, differing quantitatively rather than qualitatively (Chadwick, Birchwood, & Trower, 1996). People with extremely strong, unshakable, and unfounded beliefs that they have a serious disease are suffering from somatic

delusions. The most common forms of somatic delusions are (1) that one is emitting a foul odor from the skin or a body orifice; (2) that one is infested with insects or parasites; (3) that certain parts of the body are misshapen or ugly, contrary to objective evidence; and (4) that parts of one's body (e.g., the circulatory system) are not functioning properly (APA, 2000).

Some people with somatic delusions vociferously complain to public health departments that their dwellings are infested with vermin, and they frequently call on the services of pest control agencies. It is also not uncommon for people with delusions of vermin infestation to consult university zoology departments in the hope of identifying the offending vermin and discovering some method of eradication. This can be seen from a recent account from our zoologist colleague Dr. Karen Needham:

Ten years ago, when I first began taking care of the Spencer Entomological Museum in the Department of Zoology at UBC [University of British Columbia], I would occasionally (once or twice a year) receive a call from a member of the general public complaining about a serious insect invasion in their home. The insects were described as living in clothing, bedding, furniture, and on or under the skin. They were characterized as tiny and fast moving, with their bite accompanied by a sudden, sharp pain; the feeling of them burrowing under the skin was unbearable. So small were they that their victims could barely see them with the naked eye, so fast moving that capturing a specimen for identification was impossible. The few times that people complaining of such an infestation did manage to send something in for identification, the sample invariably consisted of lint, kitchen crumbs, and sometimes human skin. . . . Sadly, in recent years, the number of these calls that I receive has increased dramatically. . . . One elderly woman had become so distraught that she had rid her home of all of its furnishings and was sleeping each night on her freshly scrubbed, bare kitchen floor. Another elderly gentleman could only get relief from the sensation of "little, black insects" burrowing into his skin by dousing himself daily with undiluted kerosene. (2000, p. 16)

If the delusional person does not meet criteria for schizophrenia or a mood disorder, and if the delusions are not due to substance intoxication, or a cognitive disorder (e.g., delirium), or a general medical condition, then the person would be diagnosed with delusional disorder (somatic type) (APA, 2000). It can be difficult to distinguish this disorder from the poor-insight subtype of hypochondriasis. The difference is a matter of degree; compared to delusional disorder, the disease beliefs in poor-insight hypochondriasis are not as strongly held and are more likely to wax and wane over time and circumstance.

It is unclear whether delusional disorder (somatic type) is best regarded as a psychotic spectrum disorder (related to schizophrenia) or whether it should

be considered an extreme form of hypochondriasis (akin to poor-insight hypochondriasis). Certain forms of treatment, such as some pharmacotherapies and cognitive-behavioral interventions, may be effective for poor-insight hypochondriasis and delusional disorder.

Other Disorders

Excessive health anxiety can also be a feature of other disorders, such as panic disorder and major depressive disorder. For example, worry about dying commonly occurs during panic attacks in people with panic disorder. In these cases, a diagnosis of hypochondriasis would not be given if excessive health anxiety appeared to be part of, or “due to,” another disorder (APA, 2000). That is, these presentations would not be considered to be primarily health anxiety disorders. However, if a person with panic disorder also had a broader pattern of disease convictions and disease fears that were unrelated to panic attacks, then a diagnosis of hypochondriasis or other health anxiety disorder would be considered.

PERSONAL AND ECONOMIC COSTS OF HEALTH ANXIETY DISORDERS

The severity of health anxiety is often unrelated to objective measures of physical health (Barsky et al., 1986). Even so, excessive health anxiety—whether in the form of hypochondriasis or related disorders—can seriously impair a person’s social and occupational functioning. People with excessive health anxiety, compared to others, are less likely to be employed outside the home, have more days of bed rest, have greater physical limitations, and are more likely to be living on disability benefits (Barsky et al., 1990b, 1998b; Escobar et al., 1998; Noyes et al., 1993). They also pay more visits to primary care physicians and specialists, have more medical laboratory tests and surgical procedures, and impose a greater economic burden on the health care system (Barsky, Ettner, Horsky, & Bates, 2001; Barsky et al., 1986; Hollifield, Paine, Tuttle, & Kellner, 1999). In fact, medically unexplained “symptoms” account for 25–50% of all primary care visits (Barsky, 2000).

PREVALENCE, ONSET, AND COURSE

Despite some inconsistencies, most studies have found that excessive health anxiety is equally common among women and men (Asmundson, Taylor, & Cox, 2001). Estimates suggest that full hypochondriasis has a lifetime preva-

lence in the general population of 1–5%, and is found in 2–7% of primary care outpatients (APA, 2000). Thus, hypochondriasis is as common as many major psychiatric disorders, such as panic disorder and schizophrenia. Abridged hypochondriasis is more common than the full-blown disorder (Kirmayer & Robbins, 1991; Looper & Kirmayer, 2001; Noyes et al., 1993), suggesting that excessive health anxiety is a widespread clinical problem. The lifetime prevalence of each form of abridged hypochondriasis is unknown. The point prevalence of disease phobia is 3–4% (Agras, Sylvester, & Oliveau, 1969; Malis, Hartz, Doebbeling, & Noyes, 2002). Little is known about the prevalence of delusional disorder (somatic type). Available evidence suggests it is the least common of the health anxiety disorders (APA, 2000), although some investigators believe that its prevalence has been underestimated (Koblenzer, 1997).

Excessive health anxiety can arise at any age although it most commonly develops in early adulthood (APA, 2000). It typically arises when the person is under stress, seriously ill or recovering from a serious illness, or has suffered the loss of a family member (Barsky & Klerman, 1983). Excessive health anxiety also can occur when the person is exposed to disease-related media information, as mentioned earlier.

The course of full-blown hypochondriasis is often chronic (APA, 2000), persisting for years in over 50% of cases (Barsky, Wyshak, Klerman, & Latham, 1990c; Barsky et al., 1998b; Robbins & Kirmayer, 1996). It is most likely to become chronic in people who (1) experience many unpleasant bodily sensations, (2) believe they have a serious medical condition, and (3) have a comorbid psychiatric disorder such as major depression (Barsky, Cleary, Sarnie, & Klerman, 1993a; Noyes et al., 1994a, 1994b). Little is known about the course of other health anxiety disorders. Although the course of transient hypochondriasis is, by definition, less than 6 months, people with this disorder are likely to experience future episodes of excessive health anxiety (Barsky et al., 1993a).

It is unclear whether health anxiety changes with age. The research so far has been based largely on cross-sectional (cohort) studies, which have yielded conflicting findings. Some studies suggest that health anxiety is greater in older than in younger people (Altamura, Carta, Tacchini, Musazzi, & Pioli, 1998; Gureje et al., 1997), while other research has found no difference between age groups (Barsky, Frank, Cleary, Wyshak, & Klerman, 1991). Longitudinal studies are needed to further examine this issue. Such research should attempt to disentangle the effects of declining health and social isolation to assess their relative importance in health anxiety. These variables are often confounded because elderly adults tend to be less healthy and more isolated than younger adults. Recall that social isolation provides a person with more opportunity to dwell on her or his body.

CROSS-CULTURAL CONSIDERATIONS

Cultural factors, such as societally transmitted values, beliefs, and expectations, can influence how a person interprets bodily changes and sensations, and whether treatment seeking is initiated. The tendency to present to primary care physicians with bodily concerns varies across cultures. Clinical and epidemiological studies show that Chinese, African American, Puerto Rican, and other Latin American people tend to present higher levels of medically unexplained “symptoms” than other groups (Escobar, Allen, Hoyas Nervi, & Gara, 2001).

There also appear to be cross-cultural differences in which bodily changes and sensations tend to be feared the most (Escobar, 1995). Some cultures appear to be more concerned about gastrointestinal sensations (e.g., excessive concern about constipation in the United Kingdom), while other cultures appear to be more concerned about cardiopulmonary symptoms (e.g., excessive concern about poor blood circulation and low blood pressure in Germany compared to other countries). Other countries appear to be associated with particularly high concerns about immunologically based symptoms (viruses, “sick building syndrome,” “multiple chemical sensitivity” in the United States and Canada) (Escobar et al., 2001).

Whether a person’s health concerns are unreasonable must be judged in light of his or her cultural background. One should be cautious about diagnosing hypochondriasis or related disorders in people whose beliefs about disease have been reinforced by traditional healers who disagree with the reassurances provided by physicians (APA, 2000). Even with this caveat, a number of *culture-bound syndromes* in which excessive health anxiety is a prominent feature have been identified. A culture-bound syndrome is a recurrent, locality-specific pattern of aberrant behavior and troubling experience that may or may not be linked to a particular DSM-IV diagnostic category (APA, 2000). Although cultural factors appear to shape culture-bound syndromes, these syndromes are considered to be mental disorders because they are associated with distress and functional impairment, and only a subgroup of the culture develop the disorder (i.e., cultural factors appear to be contributory factors, but fail to fully explain the disorder).

To illustrate a culture-bound health anxiety disorder, consider the dhat syndrome found in India. Dhat is characterized by severe anxiety and hypochondriacal concerns about the discharge of semen, along with complaints of whitish discoloration of the urine and feelings of weakness and mental exhaustion (Chadda & Ahuja, 1990; Malhotra & Wig, 1975). Other somatic complaints, such as aches and pains, are often present. The sufferer attributes his problems to the loss of semen in urine. Urological examination fails to reveal any discoloration or sperm.

Dhat is sometimes a feature of full-blown hypochondriasis, although it also can be a culturally specific form of abridged hypochondriasis. Dhat is reportedly common in India (Chadda & Ahuja, 1990), although its precise prevalence remains unknown. Some patients attribute dhat to early masturbation habits, to pre- or extramarital heterosexual contacts, or to homosexual contacts (Chadda & Ahuja, 1990). The disorder appears to arise from widely held cultural beliefs in India. However, cultural factors are not sufficient to explain the disorder because only a subgroup of Indian men develops dhat. Nevertheless, cultural beliefs can help us to partially understand how the disorder arises. In India, semen is widely regarded as an extremely precious fluid—the elixir of life—formed by a long process of distillation. It is believed that 40 meals give rise to 1 drop of blood; 40 drops of blood give rise to 1 drop of bone marrow; and 40 drops of bone marrow give rise to 1 drop of semen. A single ejaculation is thought to be sufficient to deplete one's mental and physical energy (Malhotra & Wig, 1975).

Dhat is sometimes resolved when the physician assures the patient that there is no semen loss, and that health would not suffer even if semen loss occurred (Chadda & Ahuja, 1990; Malhotra & Wig, 1975). If the patient does not respond to medical reassurance, then dhat is likely a feature of full-blown hypochondriasis or possibly a delusional disorder (somatic type).

SUMMARY AND CONCLUSIONS

There are several components of health anxiety, including disease conviction, disease fears, disease preoccupation, bodily checking and reassurance seeking, and disease-related avoidance and escape behaviors. Health anxiety is excessive when it is out of proportion with the objective evidence of disease. Health anxiety disorders include full and abridged hypochondriasis and delusional disorder (somatic type). Excessive health anxiety is common, costly, and often debilitating. Cultural factors, such as culturally based beliefs, can influence the sorts of symptoms and diseases that are feared. Hypochondriasis commonly co-occurs with, and is phenomenologically similar to, various disorders, particularly panic disorder, major depression, obsessive-compulsive disorder, and somatization disorder.