

Hypochondriasis: Conceptualization, Treatment, and Relationship to Obsessive Compulsive Disorder

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Background. Hypochondriasis (HC) involves preoccupation with fears of having a serious illness. The preoccupation is persistent and based on misinterpretation of benign bodily sensations. In response, patients often resort to frequent checks with doctors, of their own body, and of medical references, to reassure themselves of their health status. Some authors have likened HC to obsessive-compulsive disorder (OCD) on the basis of similarities between obsessions and illness preoccupation and the ritualistic checking behavior observed in each condition.

Methods. In this article, the phenomenology of HC is discussed in terms of factors that account for the development and persistence of this disorder. Treatment that is derived from this conceptual model is also described.

Results. HC is best considered as an anxiety problem in which pathological fear is focused on innocuous bodily sensations and other health-relevant cues.

Conclusions. Many of the psychological mechanisms of HC are similar to those present in OCD.

Keywords Hypochondriasis, Obsessive compulsive disorder, Ritualistic checking behavior, Anxiety disorder

“Be careful about reading health books. You might die of a misprint.”

- Mark Twain

The main feature of hypochondriasis (HC) is preoccupation with an erroneous idea that one has, or is imminently developing, a serious medical condition. Other characteristics of this “disease conviction” include interference with the person’s daily life functioning and its persistence in spite of appropriate medical evaluation and reassurance of good health. Sometimes the observed health-related preoccupation in HC is quite specific, with a focus on clear signs, symptoms (e.g., headaches, dizziness, coughing, sore throat), and diseases (e.g., cancer). The preoccupations can also be vague interpretations that are more or less elusive (e.g., “my heart is tired,” “my veins are aching”). Typically, the sufferer attributes unwanted sensations or bodily perturbations to some sort of medical disease and is highly concerned with what is causing the physical sensations, what they mean, and their authenticity. In some instances,

patients describe a preoccupation with a specific organ. The purpose of the present article is to review the clinical features and treatment of HC. First, diagnostic criteria are described and an illustrative case history is presented. The classification of HC is then briefly discussed before turning to an outline of a contemporary theoretical model of the problem. Finally, treatment strategies derived from this conceptual model are presented, and evidence of their efficacy is reviewed.

Many in the medical field will be familiar with individuals suffering from HC since these patients are often reluctant to regard their problems as anything other than physical. As a result, such patients often make frequent telephone inquiries or office visits relating to relatively minor (or undetectable) signs and symptoms. The persistent questioning and seeking of reassurance may pose interpersonal and practical management problems, but these symptoms also lead to a strain on valuable medical resources, escalation in costs, and may expose ostensibly healthy patients to iatrogenic risks that can accompany medical or surgical procedures. Thus, the public health and

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Table 1 Current Diagnostic Criteria (based on *DSM-IV*) for Hypochondriasis

Preoccupation with fears of having, or the idea that one has, a serious disease based on the person's misinterpretation of bodily symptoms.
The preoccupation persists despite appropriate medical evaluation and reassurance.
The belief criterion A is not of delusional intensity (as in Delusional Disorder, Somatic Type) and is not restricted to a circumscribed concern about appearance (as in Body Dysmorphic Disorder).
The preoccupation causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
The duration of the disturbance is at least 6 months.
The preoccupation is not better accounted for by Generalized Anxiety Disorder, Obsessive Compulsive Disorder, Panic Disorder, a Major Depressive Episode, Separation Anxiety, or another Somatoform Disorder.

Table 2 Identifying Features of Hypochondriasis

Preoccupation with bodily functions and processes (heartbeat, breathing, sweating).
Preoccupation with minor physical complaints (stiff neck, unexplained muscle twitching).
Preoccupation with vague and ambiguous physical sensations (tired heart, aching veins).
Repeatedly checking own body for signs of disease, such as monitoring blood pressure, pulse, doing breast exams, etc.
Hypersensitive to any small physical changes in their body.
Numerous complaints about pain (headaches, stomach aches, back pains).
Preoccupation with having serious diseases such as AIDS or cancer.
Seeking repeated physical examinations, diagnostic tests, and reassurance from medical professionals.
Seeking reassurance from friends and family about their physical symptoms.
Doing extensive research on the disease, such as using the World Wide Web or reading medical journals.
Normal reassurance and medical tests do not ease the illness concerns.
Being alarmed if friends or family are diagnosed with a disease.
Visiting numerous doctors who will "correctly" identify and treat them.
Complaints that previous medical visits were not thorough enough to find the problem, or that the doctors were not good enough, did not pay attention, or did not take the complaints seriously.
Avoidance of information about illnesses.
Avoidance of activities or foods thought to be associated with feared diseases.

cost concerns related to HC extend well beyond psychiatry, and into many areas of medical practice.

Table 1 summarizes the diagnostic criteria for HC as defined in the *Diagnostic and Statistical Manual of Mental Disorders* (1). According to the *DSM-IV* symptoms of HC can begin at any age. However, as with many other psychiatric disorders, the most common age of onset is in early adulthood. Symptoms often arise during periods of increased stress, but may be more directly influenced by recovery from a serious illness, diagnosis of an illness in a loved one, or the death of a close friend or relative (2). Exposure to illness-related information may also influence the onset and focus of HC. Table 2 presents a list of signs of HC.

MORBIDITY AND COST

Because patients with HC are typically disinclined to regard their problems as anything other than physical, they tend to surface in primary and specialty medical settings rather than in psychiatric clinics. For this reason, behavioral research on HC has traditionally been quite sparse, although this is changing with recent advances in theoretical conceptualizations of HC that lead to more effective management. Patients with HC may make frequent telephone calls or office visits relating to relatively minor (and perhaps undetectable) physical complaints. The repeated asking for "one more test" or other forms of reassurance sometimes poses practical management problems and interpersonal difficulties. Such symptoms may also put a strain on time and other valuable medical resources, result in an escalation of costs, and expose seemingly healthy individuals to unnecessary risks that can accompany certain medical or surgical procedures.

Patients with HC also suffer considerable emotional and psychological distress and impairment in social and occupational functioning. In a general practice sample they were twice as likely to report at least moderate levels of occupational disability compared to patients without HC (3). They also show at least equal levels of impairment on standard physical functioning measures as do patients with diabetes or arthritis, and are limited to bed two to three times more often than are patients with most major medical illnesses (4,5). In short, HC represents a concern from a public health and a cost effectiveness perspective for many areas of medical practice.

Case Example

Rick was a 55-year-old professional referred to our clinic by his primary care physician. He described chronic throat pain that he interpreted as a sign of throat cancer and that doctors were not taking him seriously. Despite being appropriately examined and reassured of good health by numerous physicians in his community, Rick spent hours each day thinking about his symptoms and wondering whether a new doctor should evaluate him. He also regularly examined his own throat with his hands or in the mirror, researched his symptoms on the Internet, looked them up in medical references, and called various cancer centers for information about throat tumors. Rick was avoiding numerous activities because they either evoked throat pain or additional thoughts about cancer, including exercising and eating certain spicy foods. His degree of conviction regarding his health was quite strong as evidenced by his wife's comment that "Rick has been dying ever since our wedding day 25 years ago."

As suggested, HC falls at the interface of medicine and psychiatry. When observed in mental health settings, it is often secondary to depression, delusional disorders, or anxiety disorders such as panic disorder (6). For this reason, some have proposed that HC constitutes a secondary symptom of more serious underlying psychiatric illness (7). Nevertheless, there is good evidence that many patients exhibit HC as a primary

condition. Due to this diagnostic uncertainty, and to patients' resistance to mental health consultation for their "medical problem," the prevalence of HC is largely unknown. Available estimates of the lifetime prevalence vary widely depending on the setting and range from 0.8% to 8.5% (8). A continuum with normal, everyday experience is present in that intrusive health-related thoughts similar in content to the concerns observed in HC are common in the general population, particularly in patients who have just received a medical diagnosis with a poor prognosis (9). Non-clinical HC-like symptoms are also known to occur with some regularity in specific subpopulations and among people in certain occupations including actors, musicians, doctors, and medical students (10,11).

Primary HC is a chronic, stable condition that causes long term disability, and this is supported by a prospective case-control study (12). Over 200 subjects and controls were recruited from the medical outpatient department in a large teaching hospital. At follow up, 4–5 years later, there had been an improvement in HC symptoms, but two thirds of the patients still met diagnostic criteria.

CLASSIFICATION

Because of the focus on physical symptoms and presence of bodily concerns, HC was classified as a somatoform disorder in DSM-IV. However, there are numerous ways in which HC resembles anxiety disorders such as panic disorder, generalized anxiety disorder, and obsessive compulsive disorder (OCD). For example, all involve health concerns, worry, and checking behavior. Nevertheless, the extent to which HC overlaps with these other disorders is subject to ongoing research and clinical debate (7,13). Of considerable interest is the relationship between HC and OCD. Some have proposed that HC is included among a group of conditions known as "obsessive compulsive spectrum disorders" because HC seems to share many common features with OCD. For example, preoccupations about illness in people with HC are similar to obsessions in OCD in that both are intrusive, unwanted, and evoke anxiety. Reassurance seeking behavior in HC, such as checking with doctors or other medical references, also bears similarity to compulsive rituals in OCD since both appear to temporarily reduce anxiety, yet function paradoxically to maintain obsessional distress in the long-term (14,15,16).

DEVELOPMENT AND PERSISTENCE OF HC

A number of theoretical models of the development of HC have been proposed, including psychoanalytic theories, and the idea that HC exists only as secondary to other psychiatric conditions such as depression and generalized anxiety. However, these conceptualizations have received little empirical support. Similarly, there is little convincing evidence of specific genetic factors, and even less data to support proposed psychodynamic conceptualizations of HC such as "secondary gain." This section outlines a cognitive-behavioral model of HC that is supported by research and that underlies the most effective form of treatment for HC to date.

Developmental Factors

Cognitive-behavioral models of HC contend that a number of grossly normal physiological, cognitive, behavioral, and sociological factors are involved in the development and persistence of HC. Specifically, the problem is viewed as one in which patients habitually misperceive innocuous or unexplained bodily functions in a catastrophic way and as evidence for serious illness, making them more prone to health-focused anxiety (17). That is, the human body produces constant "noise" in the form of fluctuations in functions (e.g., heart rate, blood pressure, etc.) that can sometimes cause discomfort (racing heart, muscle strain, itching, etc.). While these sensations are normal and not at all dangerous, it is thought that people who develop HC mistakenly interpret such phenomena as indicating the presence of a serious physical condition.

The tendency to misperceive "internal noise" as evidence of a serious medical problem is thought to result from erroneous underlying beliefs about health and illness which may develop from sociological factors such as a relative's illness or coverage about diseases in media. For example, consider a patient whose father suffered a stroke at age 55. As this patient progresses toward this age, he or she might become more and more concerned about unexplained internal sensations that could be the onset of a stroke. Table 3 describes five kinds of underlying beliefs that may give rise to misinterpretations of nondangerous bodily symptoms as evidence for illness. Our research group is currently investigating the validity of such domains and their relationship to HC symptoms. Thus, according to the cognitive-behavioral model, one becomes vulnerable to developing HC when erroneous health-related beliefs lead to misperceiving

Table 3 Domains of Cognition in Hypochondriasis

Domain	Characteristic Beliefs
Beliefs about illness	"If it hurts, there must be something wrong," "I couldn't survive having a major illness"
Beliefs about good health	"Good health means being 100% symptom free," "If I were healthy I would have no unexplained pain"
Beliefs about health care	"One must get to the doctor at the first sign of illness or it will be too late," "It is always best to get a second opinion"
Personal vulnerability	"Cancer runs in my family," "I have a weak heart"
Intolerance for uncertainty	"Knowing I am ill would be a relief from my uncertainty," "I must have a good explanation for any discomfort I feel"

harmless physical signs and symptoms as suggestive of a serious illness. The sense that one has a serious medical condition subsequently evokes distress (intense health anxiety) and efforts to gain reassurance of health status and reduce the health concerns.

Why Does HC Persist?

Yet, if patients with HC are not really suffering from serious physical maladies; that is, if they are only *misinterpreting* innocuous symptoms, then why don't they realize this and stop their worrying and disruptive checking behavior? This "neurotic paradox" occurs in HC as a result of physiological, cognitive, and behavioral mechanisms as described below. The reader will also note that these are fundamentally normal human processes, although in people with HC, they appear to be biased and maladaptive. Moreover, these processes account for the persistence of HC symptoms despite the fact that patients never become physically ill.

Physiologic Mechanisms

The emotional arousal associated with intense health anxiety (and indeed any stress or anxiety) leads to normal and adaptive physiological changes and increased activity in the

autonomic nervous system (i.e., the fight or flight response), endocrine changes, and other biochemical manifestations—for example, dizziness or tingling sensations following hyperventilation. While such symptoms are not at all dangerous, they may occur unexpectedly, feel uncomfortable, and be perceived as disconcerting. Not surprisingly, individuals with HC often misinterpret such symptoms as indicating the presence of severe illnesses (18). Thus, at the very point that one is becoming anxious or stressed over one's health, additional threatening "symptoms" seem to appear. The result is further anxiety, increased autonomic symptoms, and an upward spiral leading to urges to seek evaluation for a suspected medical problem (see Figure 1) (19).

Cognitive Mechanisms

Biases in how people with HC think about health-related information also operate to maintain HC. One example is *selective attention* in which patients attend closely to information that could confirm the presence of sickness (headache = brain tumor) and discount information suggestive of good health as immaterial or inaccurate (e.g., brief duration, no other symptoms, medical reassurance). This explains the frustration and urges to get second opinions when doctors conclude there is no sign of illness.

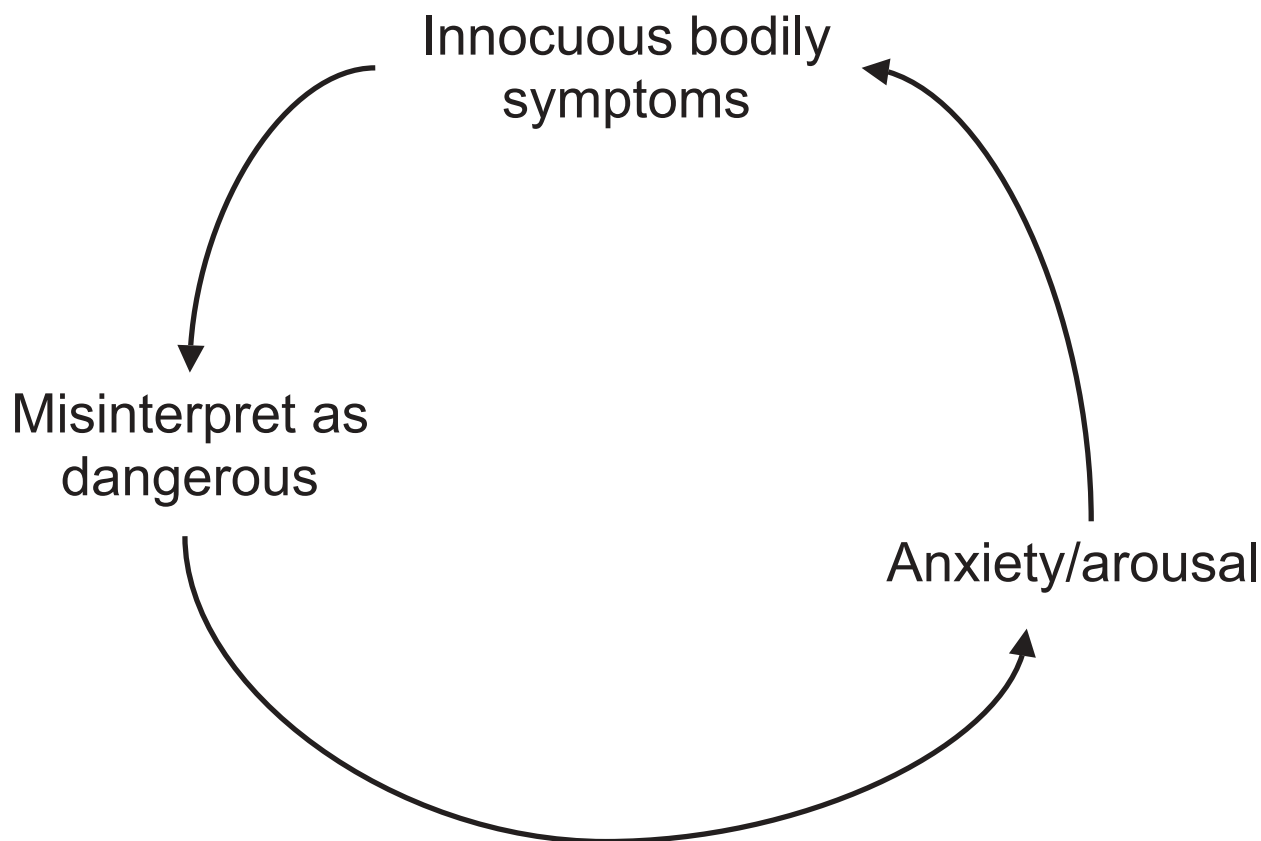


Figure 1 Vicious cycle of bodily symptoms, fear, and autonomic arousal that maintains HC symptoms.

Body vigilance, the tendency to pay excessive attention to normally occurring bodily fluctuations, also maintains HC-related thinking because it leads to noticing an endless array of seemingly unexplained symptoms (which most people simply ignore) that could be misinterpreted illness-related (20). HC patients' *intolerance of uncertainty* also contributes to their chronic health anxiety. Whereas most people accept a certain level of uncertainty over issues related to their health, those with HC tend to interpret *any* doubts regarding their health as highly distressing. Thus, they maintain a low threshold for needing reassurance. However, contrary to intuition, repeated assurance serves to strengthen, not reduce, severe health anxiety, as is discussed below.

Behavioral Mechanisms

Acting to avoid or escape from harm is a natural tendency when one is anxious. People leave a burning building as quickly as they can. When situations are escaped or avoided, fear levels diminish rapidly; therefore these strategies produce a sense of relief from emotional discomfort that is reinforcing. Thus, such behaviors become habitual. However, if (as in the case of patients with HC) the perception of threat is based on a misinterpretation (e.g., an erroneous belief), then the escape and avoidance habits prevent the person from noticing that their fear was groundless in the first place. For example, if a patient keeps earplugs in her ears at all times, then her irrational fear that normal, everyday noise levels will lead to hearing loss can never be disconfirmed, and she will continue to be fearful.

The most noticeable safety-seeking behavior in HC is reassurance seeking. The woman described above repeatedly tested her hearing with an expensive device she had bought solely for this purpose. Other patients describe relying on information from authorities to obtain relief; for example "hearing Dr. Jones say that I do not have heart disease is the only way I can stop worrying about it." Such behavior strengthens erroneous underlying beliefs about illness and health care. Reassurance seeking may further increase distress if patients receive different information from different sources, or worse, inconsistent information from the same source on different occasions. Habitual escape and avoidance behavior often evolves into patterns that can severely disrupt the individual's life.

Avoidance represents another form of safety-seeking behaviors. We recently evaluated a middle-aged woman who had refrained from self-breast examinations because she feared detecting a lump indicative of breast cancer. However, this type of avoidance prevented the self-correction of the woman's erroneous beliefs that (a) breast cancer was likely, and (b) she wouldn't be able to cope if she detected a lump.

Maladaptive behavioral responses such as repeatedly checking one's body, may also feed into the cycle of health anxiety by paradoxically increasing the feared symptoms. For example, a different woman who feared that she had breast cancer *repeatedly* checked her breasts. The constant manipulation caused pain, which she interpreted as a sign confirming the presence of cancer. Constant body checking might also lead to noticing and

misinterpreting normal bodily perturbations and harmless fluctuations in bodily processes. For example, a man who repeatedly measured his blood pressure became extremely anxious when he noticed a rise in pressure (likely the result of worries about health).

TREATMENT

Proper Medical Evaluation

Before commencing with treatment for HC, a thorough review of the patient's medical records is necessary to rule out any co-existing or confounding organic basis for symptoms (such as illness, injury, medication use, or substance abuse). Information from prior exams can be reviewed with the patient and used as evidence suggestive of good health, but should not be used for trying to completely *reassure* the patient. Comorbid mood disorders should be assessed, and if present, management considered.

Psychotherapy

Traditionally, HC was considered resistant to psychotherapy; likely because of the inadequacies of psychodynamic and psychoanalytic conceptualizations of HC as "a personality disorder" or "attention-seeking." In contrast, the scientifically supported conceptual formulation of HC presented above leads to the use of treatment techniques that (a) help patients recognize and modify faulty beliefs about illness such as "all bodily sensations are signs of serious illness" and (b) eliminate behavioral responses that are barriers to the self-correction of faulty beliefs. This treatment approach is called *cognitive-behavioral therapy* (CBT) and it involves a set of procedures that have been demonstrated to substantially reduce HC symptoms. Patients given CBT show significant improvements, up to 80% reduction of symptoms, on a number of indicators of HC (21). Specific procedures are described in the sections that follow.

Cognitive Therapy

Cognitive therapy involves learning to identify faulty thinking patterns, challenging these patterns of thinking, and deriving more constructive, realistic beliefs. It is believed that constructive thoughts lead to less anxiety. In particular, patients with HC are helped to seek and accept alternate and more realistic explanations for their physical complaints by challenging the belief that unusual or uncomfortable physical symptoms must indicate a serious illness. After the patient is able to generate alternate explanations for symptoms, therapy focuses on challenging the need for guarantees. Patients are taught to acknowledge that there is a degree of risk in everyday life and one must accept these risks rather than try to control them.

The following is an excerpt from a cognitive therapy session with Matt, in which the therapist helps him generate alternate explanations for his frequent headaches:

"Matt" had a persistent fear that he had a brain tumor. Whenever he had a headache he wondered how he would know if it really was a tumor. The fear grew until he was also concerned about migraines, embolisms, and strokes as well. He began paying close attention to his blood pressure and pulse, measuring them multiple times each day. He refrained from physical activities and certain foods he thought could cause cancer, and read ingredients on packages of food to make sure they did not contain carcinogenic ingredients. Matt consulted with numerous physicians, had four MRIs and two PET scans over a period of two years.

Therapist: You said that when you feel like you have a headache, you believe it means that you have a brain tumor. Is this correct?

Matt: Yes, I read that frequent headaches are one of the symptoms of a tumor and I seem to have a lot of headaches.

Therapist: That would be pretty serious. So, what other evidence do you have that you have a tumor?

Matt: Well, I don't know, really. I have seen two doctors who both assured me that I am fine. I also had an MRI done recently.

Therapist: So, could it be possible that there is something else responsible for the headaches you are having?

Matt: I suppose there could be.

Therapist: Can you think of some other possible explanations.

Matt: Well, I do get headaches from staring at a computer screen all day at work.

Therapist: Okay that's one explanation. What else?

Matt: It could be stress.

Therapist: Oh, what kinds of things do you get stressed out about?

Matt: I guess when I think about getting headaches.

Therapist: Sure. What happens when you think about getting headaches?

Matt: I usually end up getting one.

Therapist: Are you saying that just focusing on your head can bring on headaches?

Matt: I guess thinking about it does make it worse.

Therapist: It seems then that a tumor is not the only possible explanation for your symptom.

Matt: Yeah, and that explains why the doctors can't find anything physically wrong.

up and down several flights of stairs to increase Matt's heart rate and breathing rate. Matt was asked to focus on his internal sensations and imagine that his headaches were indeed a sign of a tumor or that he might soon have a stroke. Matt practiced these (and other similar) exercises on a daily basis for "homework" and over time, realized that his fears did not make sense. He also learned not to become anxious based on the mere thought of illness, or concerned with minor physical symptoms.

How Effective is CBT?

Research on the effects of CBT for HC has provided encouraging results. In one study, Warwick and associates found that under 20 sessions of CBT was superior to no treatment (wait list), with treated patients showing substantial reduction in health anxiety, the need for reassurance, and the frequency of checking behavior (21). Evidence from this study also suggests that HC patients found CBT acceptable since only 6% of the sample refused to begin therapy and only 6% discontinued treatment prematurely. In a subsequent study, Clark and colleagues (22) compared 16 weekly sessions of CBT to a credible control treatment: stress management. At both post-treatment and follow-up CBT was more effective than stress management in reducing illness fears and unnecessary medical visits. This finding demonstrates that the specific procedures in CBT (i.e., cognitive therapy and exposure), over and above non-specific factors common to all forms of psychotherapy (i.e., the therapeutic relationship), are responsible for causing durable improvement in HC symptoms. Refusal and drop out rates were similarly low (4%) again suggesting acceptability and tolerability. An important limitation of these treatment studies is that the results are based on HC patients who accepted psychological treatments. Unfortunately, clinical experience suggests that a large number of patients do not agree to participate in such interventions (i.e., they believe they have a bona fide medical problem that requires medical treatment). Thus, at present, the results from HC treatment studies might not be generalizable to the HC population at large.

Exposure and Response Prevention (ERP)

ERP are two specific techniques often implemented for HC as well as OCD. Exposure involves helping patients confront situations, physical sensations, and thoughts, frequently avoided or feared, but which pose a low risk of actual threat. Response prevention means refraining from compulsive behaviors that temporarily reduce anxiety, such as reassurance seeking or body checking. ERP sessions are conducted at a rate that patients can tolerate and exposure to anxiety provoking situations occurs at a pace agreed upon collaboratively by the therapist and patient.

Exposure therapy for Matt entailed practicing eating foods that he believed were "cancer-causing." For response prevention, he was instructed to refrain from speaking to doctors, friends, and family about diseases and resist urges to check his vital signs. At one session, Matt and his therapist practiced running

Pharmacotherapy

There is very little research on the use of medication for treating HC. Case reports suggest tricyclic antidepressants may be helpful (23). Preliminary results from a placebo-controlled trial suggest fluoxetine, a serotonin reuptake inhibitor, may be effective; yet the placebo effect in that study was quite substantial (24). Thus, the current evidence for the use of pharmacotherapy in HC is unconvincing.

SUMMARY AND CONCLUSIONS

HC is a fairly common problem in certain settings and in vulnerable individuals. It is associated with considerable distress,

iatrogenic illness, and monetary costs to afflicted patients and healthcare providers (and systems) alike. Diagnosis is often delayed, which exacerbates the condition; and many patients are never matched with the correct treatment. Previously considered only a secondary condition, HC is now known to exist as a primary condition and is best conceptualized as an anxiety disorder in which the possibility of serious illness has become the focus of pathological fear. Factors contributing to the etiology and persistence of HC include erroneous beliefs and assumptions about health as well as maladaptive behavioral responses (e.g., constant reassurance seeking) to situations or bodily sensations that are erroneously perceived as threatening. There are increasing signs that long-term reduction of HC symptoms requires the use of treatment procedures that help individuals with HC to modify their dysfunctional beliefs and interpretations, and their excessive responses.

HC resembles OCD in that fear is evoked by specific obsession-like intrusive thoughts or ideas; in this case, about one's health and possible illness. To reduce this health anxiety, patients take to seeking reassurance and checking. However, in performing such rituals, patients actually strengthen their habit of becoming anxious when confronted with (arguably) ambiguous bodily stimuli or other information about health. Thus, the HC symptoms persist. As with OCD, the most effective treatment for HC involves cognitive and behavioral methods aimed at modifying thinking and behavioral habits.

Presently, there are two impediments to successful treatment of HC: (1) the patient's reluctance to view their problem as anything other than physical and (2) the lack of providers trained in the provision of effective therapy (i.e., CBT). Thus, it is the primary care or specialty physician who is usually in the position of proposing to the patient that their problem is not a medical condition per se, but instead a problem with excessive *anxiety* about health. In our experience, patients appreciate when their doctor demonstrates empathy and an understanding of their health anxiety. This includes an acknowledgment that the person's physical symptoms are *real*, but that there may be alternative, less catastrophic, explanations for them. Offering a logical and coherent explanation for this problem, and a convincing rationale for the need for psychiatric services, is therefore an important task.

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