

# Severe Health Anxiety: Why It Persists and How To Treat It

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## ORIGINAL ARTICLE

*Hypochondriasis (HA) involves the fear of serious illness despite appropriate reassurances. Because HA is associated with patients' personal suffering and clinical management problems, it is important for clinicians to be knowledgeable about current conceptual and treatment approaches to this problem.*

Most people working within the field of medicine have come across patients with physical complaints for which an organic basis cannot be determined, or for whom no amount of reassurance is sufficient to quell their excessive anxiety over serious illnesses such as cancer. Such individuals may make frequent telephone inquiries or office visits seeking reassurance over seemingly minor (or undetectable) signs and symptoms, or to ask for additional medical tests. In the short-term, such questioning may pose interpersonal and practical management problems; however, in the long-term these symptoms lead to a strain on valuable medical resources, escalation in costs, and may paradoxically expose otherwise medically healthy patients to the bona fide risks that can accompany medical or surgical procedures. Thus, severe health anxiety (HA; clinically termed *hypochondriasis*) represents a public health and cost concern for many areas of medical practice.<sup>1-3</sup>

We describe a novel approach to understanding and treating severe HA. The focus of this conceptualization is on a paradox commonly observed among patients with this disorder; if patients do not actually have a serious illness, why does their intense fear of illness persist? That is, why don't such people respond appropriately to the reassurance they receive from their doctors or other sources?

The answers to this question lie in a more thorough understanding of the physiologic, cognitive, and behavioral processes that underlie the development and persistence of severe HA. Awareness of these processes is also critical to effective treatment.

The essential feature of hypochondriasis according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.)<sup>4,5</sup> is a preoccupation with the (inaccurate) belief that one has, or is in danger of

## REPRINTS

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*Submitted for publication: July 18, 2003. Accepted: November 3, 2003.*

developing, a serious illness. In most cases, the disease conviction is functionally disabling and persists despite appropriate evaluation and reassurance of good health. The preoccupation may be symptom based, with a focus on bodily functions (e.g., heart-beat, peristalsis), minor physical abnormalities (e.g., a sore), or vague and ambiguous physical sensations (e.g., "tired heart", "aching veins"). The person attributes these signs and symptoms to the suspected disease and is very concerned with their meaning, authenticity, and etiology. Alternatively, there may be a preoccupation with a specific organ or a single disease (e.g., fear of having cancer). Due to patients' reluctance to seek mental health evaluation, the prevalence of hypochondriasis is largely unknown. Available prevalence estimates vary widely and range from 0.8% to 8.5% depending on the setting.<sup>6,7</sup>

A number of psychodynamic explanations for hypochondriasis have been proposed, such as the theory that patients repeatedly seek doctors' reassurance to fulfill unmet needs for attention. However, such theories have no basis in scientific research and are not supported by empirical findings. The idea that hypochondriacal behavior is motivated by "secondary gain" is also encountered in the medical and psychiatric field. Again, while intuitively appealing and straightforward, this view implies a dismissal of the patient's behavior as deliberate or a "personality disorder." Moreover, it overlooks the need for a more cautious analysis of individual symptoms, which (as we discuss below) is a necessary part of successfully alleviating hypochondriasis.

## HYPOCHONDRIASIS AS SEVERE HEALTH ANXIETY

Anxiety and fear serve an adaptive function; they protect animals from harm by activating the sympathetic nervous system—often termed the "fight or flight" response—when threat is perceived. It is important to understand that the anxiety response is activated in the presence of *perceived* threat, whether or not true danger actually exists. Moreover, the frequency, intensity, and duration of anxiety one experiences is proportional to the significance and imminence of the perceived threat. Thus, issues perceived as vitally important to one's welfare evoke high levels of anxiety. As perceived threats to one's physical well being are likely to be considered particularly important, it should not be surprising that health-focused anxiety is a common phenomenon.<sup>7,8</sup> In this way, hypochondriasis can be conceptualized as an extreme manifestation of excessive and persistent anxiety focused upon a perceived threat to one's health.<sup>9,10</sup> Put another way, the pri-

mary symptom in hypochondriasis is the misappraisal of otherwise innocuous bodily sensations and symptoms as indicating a threat to one's health.<sup>11,12</sup>

Why do some people misinterpret health-relevant information as threatening when realistically there is no need for concern? Such misinterpretations likely emanate from basic (albeit erroneous) assumptions about health and illness or from memorable health-related incidents. For example, equating "hurt" with "harm" or observing a loved one's bout with heart disease may lead to misinterpreting indigestion as signs of heart failure. Faulty general health assumptions may have a variety of origins, such as information gleaned from media sources or unpleasant personal experiences with illness. If such assumptions are particularly extreme or inflexible they are apt to lead to HA. For example, individuals with HA hold overly narrow definitions of good health, perhaps believing that good health means no bodily sensations whatsoever.<sup>13</sup> To illustrate, while most people would seek a doctor's opinion if they had unexplained neck pain continuously for several days, a person prone to developing HA might impetuously assume that any neck pain is a sign of serious illness. Whereas the former presumption leads to appropriate use of medical resources, the latter drives excessive and irrational behavior including preoccupation with and continuous scrutinizing of one own symptoms, and strong urges to seek medical consultation.

Other problematic assumptions that may lead to mistaken interpretations about health (and thus to HA) include beliefs about health care habits, such as "you shouldn't waste any time in getting to the doctor when you notice anything unusual or it will be too late." Beliefs related to perceived personal weaknesses or vulnerability to particular illness may function similarly. For example, "cancer runs in my family," "my father died when he was my age," or "I have a weak heart." In vulnerable individuals, such beliefs may be activated by critical incidents such as the diagnosis of a loved one or a well-publicized health issue.

Severe HA, then, develops if benign physical signs and symptoms are misinterpreted as indicating serious illness in light of underlying erroneous health-related beliefs and assumptions. As part of a normal response to perceived threat the presence of health concerns would be expected to give rise to checking of one's health status (i.e., via physicians). However, despite the appeal of understanding possible *causes* of severe HA, the present conceptual model emphasizes the role of factors that promote the *persistence* of HC symptoms, as we describe below.

## WHY DOES HEALTH ANXIETY PERSIST DESPITE REASSURANCE?

Occasional concern over physical symptoms is normal;<sup>9</sup> and in most cases is relieved with the realization that nothing serious is the matter. However, people with severe HA experience persistent health related concerns despite what would seem to be convincing reassurance that their fears are unfounded. It is as if something interferes with the effects of reassurance for these patients. Below we describe three domains of factors (physiologic, cognitive, and behavioral) that serve to prevent patients from realizing that they need not be so worried about the particular physical signs and symptoms that they fear.

**Physiologic Factors.** As we mentioned above, anxious arousal (including increased heart rate, sweating, hyperventilation, vasoconstriction, etc.) serves to protect the organism from danger and to prepare it to take immediate action (i.e., fight back or escape). Whereas most people recognize increased heart rate as part of autonomic arousal, other cardiovascular effects are less well known. These include increased blood flow to large muscle groups (to prepare for action) and reduced flow to the skin, fingers, and toes (to guard against blood loss). Hence, during anxiety the skin may look pale or feel cold, and fingers and toes may become numb or tingly.

Autonomic arousal also causes hyperventilation to increase the flow of oxygen to the muscles. However, the increase in speed and depth of breathing often produces breathlessness, smothering or choking sensations, or even pain or tightness in the chest. If no actual activity occurs, the ratio of oxygen to carbon dioxide to the brain is slightly offset with prolonged hyperventilation. While completely harmless, this may produce temporary lightheadedness, blurred vision, confusion, unreality, or hot flashes. Other effects include increased perspiration, dry mouth, pupillary dilation (which results in blurred vision or spots), and a decrease in digestive function (often producing sensations of nausea or constipation). Finally, the associated muscle tension may result in aches, trembling and shaking, as well as a general tiredness.

How are these physiological effects related to HA? Although innocuous (and in fact adaptive) the onset of such symptoms seems unexpected to the HA sufferer and may thus be misinterpreted as indicating a serious illness.<sup>11</sup> So, at the same moment one is becoming anxious or stressed over one's health, more threatening symptoms seem to emerge. This creates additional anxiety, which intensifies the "inexplicable" autonomic symptoms—an upward spiral leading to extreme HA and urges

to seek evaluation for a suspected medical problem.

**Cognitive Factors.** Severe HA is also maintained by ways in which people think about health-related information that they receive. For example, unexplained body sensations naturally evoke a quest for evidence to confirm or disconfirm one's worst fears. Since the cost of a false negative decision (assuming good health when an illness is present) is higher than that of a false positive (assuming illness when one is healthy), the prevailing bias with which people interpret available evidence is to err on the side of caution. However, this results in selective attention toward information that *could* confirm the presence of sickness (headache = brain tumor). Moreover, information suggestive of good health (e.g., symptoms feel similar to previous headaches and respond to aspirin) tends to be disregarded. This kind of selective attention can also influence the impact of reassurance provided by doctors; evidence consistent with an illness strengthens the fear that one might be ill, whereas disconfirmatory information is discounted as inadequate or immaterial. This selective attentional bias explains the persistent drive to seek second opinions despite medical tests indicating that no illness is present.

Another cognitive factor involved in the maintenance of HA is *body vigilance*—the tendency to pay close attention to, and monitor, even slight bodily sensations based on concerns about such sensations.<sup>14</sup> Indeed the expectation that one's body will produce threatening signs and symptoms will invariably evoke heightened sensitivity to quickly detect any such phenomena. However, body vigilance may lead to the over-detection of *normal* bodily fluctuations and perturbations that are subsequently misinterpreted as "new" symptoms of serious illness.

Along with body vigilance, people with severe HA show an *intolerance of uncertainty*—indeed when it comes to personal health, anything less than *absolute* certainty is extremely anxiety evoking for such individuals.<sup>15</sup> Whereas most people accept a certain level of uncertainty in everyday life (including issues related to their health), those with HA interpret any doubts regarding their health as highly distressing. To reduce this doubt and distress, health-anxious people tend to seek reassurance by asking doctors for further evaluation, describing the symptoms to others, checking medical references, or checking one's own bodily signs or symptoms (e.g., taking one's own blood pressure, checking for lumps, etc.).

**Behavioral Factors.** Taking action to minimize the potential for harm is a natural (and adaptive) response

for a person perceiving him/herself to be threatened. Such "safety-seeking" behavior also results in an immediate reduction in fear. However, if the threat is erroneously perceived, then the safety-seeking behavior prevents the individual from noticing that the fear is groundless. Various safety-seeking behaviors play a role in HA as we describe below.

Reassurance-seeking is the most overt safety behavior in HA, and is considered a cardinal symptom of hypochondriasis. Reassurance, whether obtained from a doctor or other reference, becomes habitual because of the immediate reduction in doubt/distress it produces. Thus, the person will eventually come to rely upon such reassurance to obtain relief from HA; for example "hearing Dr. Jones tell me I do not have a brain tumor is the only way I can stop worrying." Paradoxically, reassurance also maintains faulty illness-related beliefs (and fears) in the long-term, especially if patients receive different information from different resources [e.g., doctors], or worse, inconsistent information from the same source [e.g., Internet chat rooms] on different occasions.

Some safety behaviors can lead to an increase in the very symptoms one perceives as threatening. *Body-checking*, for example, is a commonly observed symptom in HA—patients concerned with particular symptoms (e.g., raised birthmark) may carry out frequent examinations of affected areas involving manipulation of a given body part. However, such behavior may lead to an increase in physical symptoms, which is then misinterpreted as a sign of illness. For example, a patient of ours was worried that her trachea was constricted to the point that she would not be able to breathe. Despite reassurance that her breathing was quite normal, she repeatedly pressed on her neck and throat to determine whether the "condition" had grown worse. As a result, the area became sore and painful, symptoms that further convinced the patient that her feared problem was a reality.

Avoidance of fear cues is another form of safety-seeking behavior. One middle-aged man evaluated in our clinic had ceased all exercising believing that such activity would overstrain his lungs leading to lung cancer. Covert avoidance is also observed, such as in the case of a teacher who continually wore cotton in her ear for fear that "the screaming children would lead to progressive deafness." Avoidance prevents self-correction of erroneous beliefs that would otherwise naturally occur when feared negative outcomes do not transpire. In the example above, the teacher erroneously attributed never losing her hearing to her continual wearing of

cotton when around loud children. Thus, even subtle avoidance of this harmless noise prevented the teacher from discovering that normal exposure to loud children would not lead to hearing loss. In this way her mistaken belief and irrational fear of hearing loss from screaming children was maintained.

## TREATMENT

The conceptualization described above suggests that effective treatment for severe HA must (a) assist patients to identify and correct erroneous assumptions concerning illness and (b) eliminate factors that prevent the correction of such faulty assumptions. This treatment approach, termed *cognitive-behavioral therapy* (CBT), encompasses a set of procedures with empirically demonstrated efficacy in weakening undesirable thinking and behavioral responses. Below we describe the specific CBT procedures effective in reducing HA.

**Proper Medical Evaluation.** Prior to treatment of HA the prospect of any co-existing or confounding organic basis for symptoms [e.g., injury, or medication/substance abuse] must be ruled out via a thorough physical examination. Information from this exam can be reviewed with the patient and forwarded to the therapist as evidence of good health. Comorbid mood disorders should also be assessed, and if present, pharmacological management considered alongside CBT for HA.

**Developing a Personal Model of HA.** The first step in CBT involves the development of a personal model of the patient's particular HA symptoms. This model, developed in collaboration with the patient, diagrams how symptoms are influenced by general health-related assumptions, and how the various physiological, cognitive, and behavioral maintenance factors contribute to the persistence of certain illness-related beliefs. The conceptualization is then used to guide the choice of specific CBT strategies. Figure 1 depicts a conceptual HA model for a woman with fears of dying from an unexplained lack of oxygen to her brain. Years earlier she had seen a television program about the brain and emphasizing the importance of oxygen for healthy brain functioning. This woman's HA symptoms were activated by any feelings of lightheadedness, which she mistakenly interpreted to indicate low levels of oxygen in her brain. She erroneously believed that such sensations were indicative of harm and likely to mean that "important" brain cells were dying. This assumption led her to purposely hyperventilate, which she thought would provide more oxygen, but which paradoxically evoked further sensations of lightheadedness, dry mouth, and

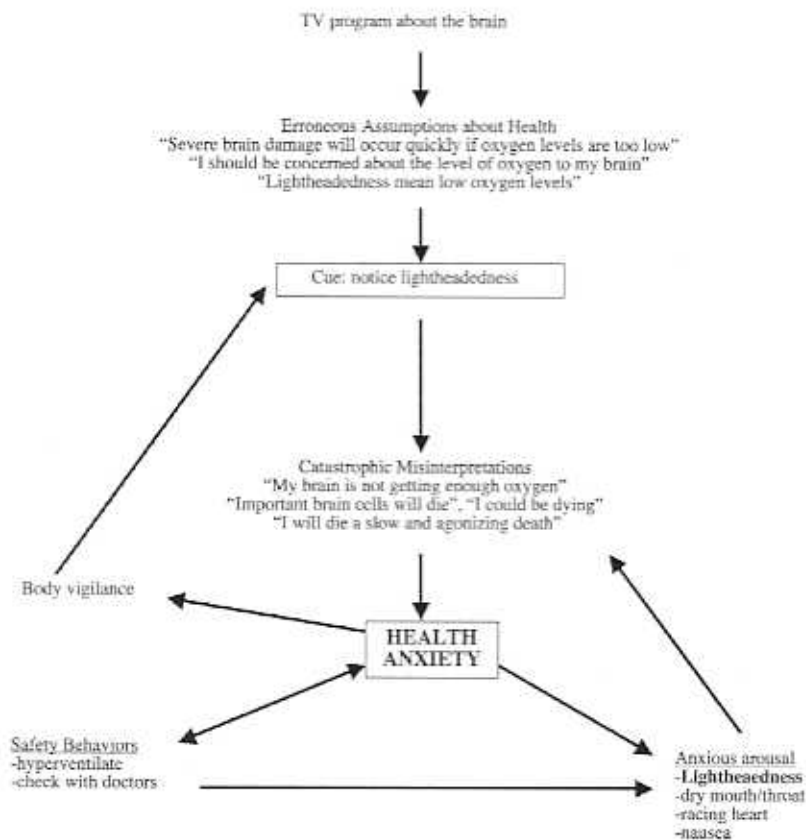


Figure 1.—Conceptual model of health anxiety in a 51 year-old female.

chest pain, all of which were interpreted as further confirmation that she was dying, leading to extreme anxiety. She frequently telephoned doctors and nurses to seek assurance about her symptoms, and believed strongly that she would have died by now if she did not hyperventilate whenever she felt lightheaded. Her fear of these sensations also brought about body vigilance, which caused her to check for and be hyper-aware of even normal fluctuations in such sensations.

**Education.** Education about bodily symptoms, especially the physiology of anxious arousal, is a vital component of CBT. Patients are taught that anxiety is a normal and adaptive response to perceived threat. They are also provided with rational, non-threatening explanations for the bodily symptoms they frequently misinterpret as catastrophic. Although identifying feared bodily cues and providing physiological explanations is important, the therapist must not provide excessive reassurance in such discussions, as the patient must learn to console him/herself when such symptoms occur.

**Correcting Erroneous Assumptions.** A procedure called cognitive restructuring is used to help patients modify unrealistic illness-related beliefs

and assumptions. Cognitive restructuring is a form of guided discovery wherein the therapist helps the patient (a) identify a basis for erroneous beliefs, (b) identify contradictory events or experiences, and (c) understand the significance of contradictory evidence. For example, the patient described in Figure 1 recalled that her lightheadedness diminished when she eventually slowed her breathing rate. The therapist helped the patient more clearly understand the meaning of this phenomenon and how it runs contradictory to her ideas about needing to hyperventilate to stay alive. For example, the therapist inquired, "if your lightheadedness is really a symptom of brain death, does it make sense that the symptoms go away when you breathe less heavily?" and "if reducing your breathing rate would not stop brain cells from dying, what role might it play in the symptoms?" and, "could the problem be that you are jumping to the wrong conclusions about what lightheadedness really means?"

**Exposure and Response Prevention.** *Exposure therapy* includes a set of techniques designed to correct mistaken beliefs about illness. These techniques all involve gradually confronting the very situations or bodily sensations that evoke illness

fears. During exposure patients put their illness-related predictions to the test and learn that they need not fear the situations and sensations once perceived as threatening. For example, the patient described above was taught to purposely make herself feel lightheaded by via hyperventilating for 90 seconds. After completing this task repeatedly (in various contexts) without fainting or dying, the patient's fear of this bodily sensation was substantially reduced.

*Response prevention* is a technique used in tandem with exposure in which patients are helped to refrain from behaviors that interfere with the correction of mistaken assumptions. For example, our patient was instructed to refrain from asking her therapist (or anyone else) to reassure her that she wouldn't die while practicing her exposure to lightheadedness.

**Effectiveness of CBT Procedures for HA.** Although research on treatment of HA is in its infancy, the available literature suggests that CBT techniques have both short- and long-term benefits.<sup>16</sup> For mild HA, psychoeducation delivered either by the primary care physician or in the form of educational courses, may suffice. In cases of severe HA, more intensive CBT interventions could be considered. For patients preferring medications, evidence suggests that fluoxetine is promising. However, it is unclear whether the gains from medications are maintained when drugs are discontinued; whereas research clearly suggests that the gains from CBT tend to be maintained at up to one-year follow-up.

In one investigation 20 sessions of CBT were more effective than a wait list control for decreasing illness fears, need for reassurance, and checking.<sup>17</sup> The average reduction in general anxiety symptoms was about 70% and depressive symptoms, 53%. In a subsequent investigation, 16 weekly sessions of CBT were more effective than general stress management therapy in reducing illness fears as well as unnecessary medical visits.<sup>18</sup> At one year follow-up, CBT was still significantly more effective than the control therapy indicating that the specific CBT procedures (i.e., cognitive restructuring, exposure), as opposed to non-specific factors (i.e., attention from a therapist), are the active ingredients for improvement in HA. Still, future research on the mechanisms of HA will shed light on how we can enhance our interventions, particularly for difficult-to-treat (e.g., severe) cases.

By far the chief hurdle to referring and treating patients with HA is the occasional unwillingness to conceptualize their problem as one involving anxiety.

Because HA patients typically present in medical settings it is often up to the primary care or specialty physician to broaden the patient's perspective on their complaints. This includes helping them to consider the possibility that in light of no evidence of ill health, their complaints may be better accounted for by fears of their (very real) physical symptoms. Indeed patients are likely to value an explanation from a knowledgeable and empathetic physician who shows an understanding of their concerns and can put forth a reasonable explanation and rationale for the need for psychotherapy. **CT**

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