Somatoform disorders

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Somatoform Disorders

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SOMATOFORM DISORDERS

Introduction

The Somatoform Disorders are a group of problems in which people suffer from somatic symptoms or worry about bodily illness or deformity that cannot be accounted for by an organic medical condition or another psychiatric disorder such as depression or anxiety. While 'psychosomatic diseases' are no longer recognized as distinct disorders—since psychological and behavioral factors may affect any medical condition—the somatoform disorders retain the implication of being wholly or predominantly caused by psychological processes that influence symptom perception and illness behavior. As we shall see, in some cases this presumption may be unwarranted.

The DSM-IV category of Somatoform Disorders emerged out of earlier notions of hysteria (Hyler & Spitzer, 1978) and includes seven related disorders: Somatization Disorder (formerly Briquet's syndrome or hysteria), Conversion Disorder, Pain Disorder (formerly Psychogenic or Somatoform Pain Disorder), Hypochondriasis, Body Dysmorphic Disorder, and two residual categories for patients who do not meet full criteria for any of the previously mentioned disorders, Undifferentiated Somatoform Disorder and Somatoform Disorder Not Otherwise Specified.

Despite many conceptual problems, the somatoform disorders survive as a set of diagnoses in the DSM-IV largely because of their relevance to Western health care systems where patients with medically unexplained somatic symptoms and illness worry present a common and costly clinical problem (Barsky, Orav, & Bates, 2005). The diagnosis of a somatoform disorder serves to label and assign responsibility for patients who would otherwise fall through the cracks of a diagnostic system increasingly oriented around laboratory tests and biological treatments for specific pathophysiology.

The diagnostic category of Somatoform Disorders reproduces two fundamental dualisms that are deeply embedded in Western medicine, health psychology and indeed, in the everyday

concept of the person (Kirmayer, 1988). First, that mind and body are distinct realms, so that there is something noteworthy or even exceptional about people who express problems in somatic terms that a clinician would situate in the psychological or social realm. And second, that what is bodily is somehow more real, substantial, and ultimately, more legitimate as illness than what is purely psychological. Somatoform Disorders emerge from this dualistic conception, contribute to it and, in consequence, are part and parcel of social processes that challenge the legitimacy and reality of people's suffering. The obverse of somatization might be considered to be psychologization: the tendency to attribute to psychological factors symptoms that others see as fundamentally somatic in nature. Many mental health practitioners tend to be psychologizers, confidently attributing somatic distress to psychological conflicts, personality traits, or social stressors even when physiological explanations are available (Kirmayer, 2000).

Keeping in mind this cultural construction of the category, in this chapter we will review what is known about the Somatoform Disorders. We will argue that, just as the notion of 'psychophysiological disorder' has been replaced by that of "Psychological Factors Affecting Physical Condition"—a shift from a categorical, disorder-based scheme to one of diagnosing specific situations—so too should the Somatoform Disorders be reconceptualized as symptoms or patterns of illness behavior that interact with other medical and psychiatric conditions. As illness behavior, Somatoform Disorders can be best typified and understood in terms of dimensions rather than categories, processes rather than symptoms and signs, and social contexts rather than isolated behaviors. We think this dimensional and contextual approach to somatization not only fits the research data better than the individual psychopathology oriented perspective, it also has useful implications for clinical assessment and treatment. Rethinking the category of Somatoform Disorders from a social and cultural perspective will allow us to avoid some of the negative attitudes and stigmatization that plague patients who receive these diagnoses (Kirmayer, 1999).

Description of the Disorders

The DSM-IV Somatoform Disorders share two features: (1) they involve predominately somatic symptoms or bodily preoccupation; (2) the focus on the body cannot be fully explained by any known medical disease or substance use. In addition to these features, the diagnostic criteria generally stipulate that symptoms are not due to faking or malingering or to another psychiatric disorder. Although not a specific diagnostic criterion for each diagnosis, the use of a somatoform diagnosis to describe a patient's condition reflects the clinician's assessment that psychological factors are a large contributor to the symptom's onset, severity, and duration. To warrant diagnosis, these symptoms must result in significant distress, medical help-seeking and/or impairment of functioning in work or other social roles.

Somatization Disorder (SD) is characterized by a pattern of multiple somatic symptoms recurring over a period of several years. Criterion A stipulates that symptoms must begin before age 30 and result in medical help-seeking or lead to significant social or occupational impairment. Based on clinical reports and a field trial, DSM-IV has simplified the B criteria found in DSM-III-R to require four different types of symptoms: (1) a history of pain related to at least four different anatomical sites or functions; (2) a history of at least two gastrointestinal symptoms other than pain (e.g., nausea, bloating, vomiting other than during pregnancy, diarrhea or multiple food intolerance); (3) at least one sexual or reproductive symptom other than pain; (4) at least one pseudoneurological (conversion) symptom not related to pain (American Psychiatric Association, 1994). A third criterion (C) requires that either there be no medical condition that can fully explain the symptoms or that the distress and disability are in excess of what can be medically explained. The simplified DSM-IV criteria show high concordance with the DSM-III and III-R diagnostic criteria based on longer explicit symptom lists (Yutsy et al., 1995).

Undifferentiated Somatoform Disorder is a broad category that includes patients who do not reach criteria for SD because their symptoms are fewer in number or less severe (Katon, Lin, Van Korff, Russo, Lipscomb & Bush, 1991). Undifferentiated SD simply requires one or more medically unexplained physical complaints lasting at least 6 months and resulting in 'clinically

significant' distress or impairment of functioning. This category includes specific constellations of somatic symptoms for which there is no medical explanation. These syndromes are collectively referred to as functional somatic syndromes, and are found in most areas of medicine (see Table 1). Examples include neurasthenia or chronic fatigue syndrome, fibromyalgia, and irritable bowel syndrome.

The status of the common functional somatic syndromes remains ambiguous in DSM-IV because of continuing controversy over the validity of medical diagnoses (Barsky & Borus, 1999; Wessely et al, 1999). Thus, irritable bowel syndrome (abdominal symptoms such as pain, bloating and distension, associated with alteration of bowel habits) is presumed to reflect disturbed gut motility and widely viewed as a valid medical disorder. Fibromyalgia syndrome (widespread bodily pain with tenderness at specific anatomical sites called 'tender points') has steadily gained acceptance as a discrete rheumatologic disease, while chronic fatigue syndrome (the persistence of debilitating fatigue for at least six months associated with symptoms of malaise) continues to be a contested diagnosis. In spite of many years of medical research, and the growing acceptance of some functional somatic syndromes as medical diagnoses, their underlying organic pathology has not been demonstrated. The pressure to label these syndromes as medical diseases and to identify underlying medical causes is as much driven by patient groups and the popular media as it is by the process of scientific development and the medical community (Barsky & Borus, 1999). This may reflect the greater acceptance of medical diagnoses over psychological or ambiguous diagnoses and the resulting desire to avoid stigmatizing labels (Raguram et al, 1997). For these and other functional somatic syndromes, the diagnostic process requires excluding other organic medical explanations, and inferring the relevance of psychological mechanisms. Since this process of exclusion is never complete, uncertainty about diagnosis remains. Indeed, uncertainty about diagnosis, and the self-doubt and social ambiguity that ensue, are central to patients' experience of somatoform disorders.

Conversion Disorder involves one or more symptoms that affect the voluntary motor or sensory systems and that mimic a neurological or other medical condition. The diagnostic criteria

stipulate that psychological factors (i.e., conflicts or 'other stressors') are judged to be associated with the symptom because they antecede its onset or exacerbation. Conversion Disorder may be subtyped as *with motor symptom or deficit* (e.g., paralyses, ataxia, aphonia, difficulty swallowing or "globus hystericus" (lump in throat)), *with sensory symptom or deficit* (e.g. paresthesias, diplopia, blindness, deafness, or hallucinations), *with seizures or convulsions* (pseudoepilepsy), or *with mixed presentation*.

Pain Disorder involves any clinically significant pain that causes distress and/or impaired functioning for which "psychological factors are judged to have an important role in the onset, severity, exacerbation or maintenance of the pain." Pain due to Mood, Anxiety or Psychotic Disorders and Dyspareunia (painful intercourse in women) are specifically excluded from the category. Pain Disorder is subtyped as associated exclusively with psychological factors or with both psychological factors and a medical condition. In each case it may be acute or chronic. If no psychological factors are associated with the pain, it is not given a somatoform diagnosis.

Hypochondriasis is characterized by at least 6 months of preoccupation with fears of having, or the idea that one has, a serious disease "based on the person's misinterpretation of bodily symptoms." This preoccupation, fear or idea must persist despite "appropriate medical evaluation and reassurance." Hypochondriasis is distinguished from Delusional Disorder and other Somatoform and Anxiety Disorders. If the person generally does not recognize the excessive or unreasonable nature of their illness worry but the disease conviction does not reach delusional intensity, the diagnosis may be qualified as "with poor insight."

Body Dysmorphic Disorder involves a "preoccupation with an imagined defect in appearance" or, if a mild physical anomaly is present, a preoccupation markedly in excess of what is reasonable or appropriate. Dissatisfaction with overall body shape and Anorexia Nervosa are explicitly excluded.

Somatoform Disorder Not Otherwise Specified is a residual category for people with clusters of symptoms that do not meet full criteria for any specific Somatoform Disorder. The illustrative examples given in DSM-IV are: (1) pseudocyesis ("hysterical pregnancy"); (2) nonpsychotic

hypochondriacal symptoms of less than 6 months duration (i.e., acute or transient hypochondriacal worry); (3) unexplained physical symptoms of less than 6 months duration.

The International Classification of Diseases (ICD-10: WHO, 1992) uses a very similar nosology. One distinction is that it classifies conversion as a dissociative disorder in recognition of the mechanism through which the symptoms may arise. Dissociation refers to the disruption of the usual integration of motor and sensory function with awareness and conscious control. The ICD-10 also has the additional category of *somatoform autonomic dysfunction*, which involves 'psychogenic' bodily symptoms in organs regulated by the autonomic nervous system. These autonomic syndromes are subdivided by system into heart and cardiovascular (e.g. cardiac neurosis), upper gastrointestinal tract (functional dyspepsia, aerophagia), lower gastrointestinal tract (irritable bowel syndrome), respiratory system (psychogenic hyperventilation, hiccup, cough), genitourinary system (frequent micturation, dysuria), and other organ or system. ICD-10 also includes neurasthenia (chronic mental and/or physical fatigue) as a distinct diagnosis under the rubric of 'Other neurotic disorders'; many isolated functional somatic symptoms and culture-related somatic syndromes would also be classified under this rubric. To a greater degree than DSM-IV, the ICD criteria conflate symptoms and somatic preoccupation thus making hypochondriacal anxiety more closely related to functional symptoms.

Epidemiology

Defining and measuring somatoform disorders is particularly challenging. The diagnoses are based on the absence of medical pathology, which in many cases is very difficult to demonstrate, and standards of medical assessment vary widely depending on geography and clinical setting. Reporting the prevalence of somatoform disorders is also complicated by the task of defining meaningful clinical syndromes, particularly when the symptoms (when present in mild severity) are part of the daily physical experience of healthy individuals. This broad spectrum of severity is a recurring issue in the epidemiological literature on somatoform disorders. In their less severe forms somatoform disorders tend to be very common, whereas when the more restrictive

diagnostic criteria are applied they are quite uncommon. Meanwhile the middle ground of the severity spectrum is poorly characterized but remains a common focus of clinical care (Creed & Barksy, 2004).

Somatoform disorders constitute the single most frequent class of problem in primary care medicine. Medically unexplained symptoms—especially pain, fatigue and generalized malaise—comprise from 25 to 60% of family medicine practice visits (Kirkwood et al., 1982; Barsky & Borus, 1995; Katon & Walker, 1998). A study of patients presenting with common physical symptoms to a general medical clinic found that only 16% could be identified as having a clear medical origin, whereas the large majority of cases remained "medically unexplained" (Kroenke & Mangelsdorff, 1989). There are also a large number of medically unexplained syndromes, or constellations of physical symptoms that tend to co-occur (See Table 1). Every medical specialty has its own collection of 'idiopathic' (unexplained) or functional somatic syndromes that overlap to varying degrees in clinical presentation and associated characteristics. The relationship among these syndromes remains controversial with evidence for a general tendency to experience high levels of somatic distress as well as a variety of specific functional syndromes (Wessely, Nimnuan & Sharpe, 1999). In some cases, patients with multiple symptoms may be given different diagnoses by medical specialists focused on only one aspect of their distress. These syndromes occupy a large portion of clinicians' time and effort and account for substantial health care costs. Still, patients who present to the clinic with somatoform disorders represent a fraction of those in the general population with functional somatic symptoms.

Symptoms relating to fatigue, the gastrointestinal, or musculoskeletal systems are common experiences, and overlap with what is considered "normal" physiological functions that are a part of daily experience. For example, approximately 54% of individuals surveyed from a community population responded that they were troubled by at least one abdominal symptom in the previous 3 months (Agreus, Svardssudd, Nyren & Tibbin, 1994). Similarly, 18% of individuals in a community setting reported persistent fatigue of six months or longer and this was associated with psychological distress (Pawlikowska, Chalrder, Hirschh, Wallace, Wright & Wessely,

1994). Many people cope with these problems without medical help. Patients who do come to the clinic often are prompted by co-existing problems like depression, anxiety or life stresses that may intensify symptoms and impair coping. Studies then find much higher rates of psychiatric comorbidity among patients with somatoform disorders in clinical settings compared to community samples. This comorbidity may partially reflect the cumulative effect of multiple problems on help-seeking rather than an intrinsic connection between the mood and anxiety disorders and common functional symptoms. This tendency for clinical studies to over-estimate the strength of the association in the general population (a form of what is called 'Berkson's bias' in epidemiology) points to the need for community studies to establish the causes of somatoform disorders. Unfortunately, community epidemiological studies are hampered by the necessity for medical evaluation to rule out organic explanations before the diagnosis of somatoform disorders can be made with confidence.

Several epidemiological studies have assessed the prevalence of somatization disorder, which is perhaps the most severe and persistent of somatoform disorders. The Epidemiologic Catchment Area (ECA) studies in the U.S. assessed the prevalence of somatization disorder (SD) in the general population (Robins & Regier, 1991), using the Diagnostic Interview Schedule, a structured interview which lists 38 somatic symptoms, and establishes the severity and lack of medical explanation for each symptom. The prevalence of SD varied from 0 to 0.44% across the five ECA sites, with a mean prevalence of 0.13% (Swartz, Landerman, George, Blazer & Escobar, 1991). Another large community population study assessed the prevalence of SD using the Composite International Diagnostic Inventory, a structured diagnostic interview for establishing both DSM-IV and ICD-10 diagnoses (WHO, 1992). In this study, SD was diagnosed in only one of 4075 participants (Grabe et al., 2003). Other studies of community populations of SD have also identified only small numbers of individuals meeting diagnostic criteria, with rates varying from 0.03 to 0.84% (Creed & Barsky, 2004).

SD is more common among women than men, with a ratio of approximately 10:1 in the ECA study and 5:1 in the study by Rief and colleagues (2001). Prevalence rates also varied across

ethnic groups in the ECA study, ranging from 0.08% of Hispanics, to 0.1% of non-Hispanic whites and 0.45% of Blacks. All subjects with SD also met criteria for at least one other psychiatric disorder, including phobias (in 69% of SD subjects), major depression (55%), panic disorder (38%), alcohol abuse (23%), schizophrenia (21%), and dysthymia (19%). People with SD in the ECA study were equally divided among those with onset of SD before or after a co-existing psychiatric disorder, implying that SD cannot be understood as simply due to an underlying affective or anxiety disorder. However, the development of major depression tended to follow SD, while the development of panic disorder was more closely associated with the onset of SD suggesting that it may be implicated in the evolution of SD, possibly by increasing health anxiety.

Somatization Disorder has also been investigated in primary care settings. The World Health Organization (WHO) Study of Mental Illness in Primary Care (Gureje et al, 1997) surveyed 5,438 patients drawn from primary care clinics in 14 countries, using the Composite International Diagnostic Inventory (CIDI) (WHO, 1992). The study found that somatization disorder was relatively uncommon, ranging from 0.1% to 3.0% in 13 of 15 sites. The prevalence rates were much higher in two South American sites, which may be due to cultural differences in symptom reporting, but no other geographical differences were reported. The mean age of patients diagnosed with somatization disorder was 43.3 years. Female gender, older age, and lower education were associated with the diagnosis, but no patterns of cultural differences (other than in the two South American sites) were observed. Somatizing patients reported more disease burden, negative health perception, higher rates of comorbid depression and generalized anxiety disorder, as well as greater occupational and social disability.

Most patients presenting to physicians with unexplained physical symptoms do not meet the full criteria for somatization disorder, and fall into the category of Undifferentiated Somatoform Disorder. Common medically unexplained symptoms involve pain in various parts of the body (head, back, chest, abdominal, joint), fatigue, dizziness, palpitations, shortness-of-breath, insomnia, numbness, bloating, nausea (Kroenke & Price, 1993; Simon et al, 1996; Rief et al,

2001). Although few studies have explicitly addressed the epidemiology of undifferentiated somatoform disorder, one study found that almost 20% of respondents from a general population survey reported the persistence of a distressing physical symptom for at least 6 months (Grabe et al, 2003). Only 1.3% in this study reported a severe impairment in their life as a result of a persistent physical symptom.

Numerous surveys have examined alternative criteria for "sub-threshold" somatization in which individuals have significant unexplained physical distress but do not meet the complete criteria for SD. Escobar and colleagues (1989) proposed an abridged somatization syndrome (SS) which involves a lifetime occurrence of 4 medically unexplained symptoms for men and 6 for women. Somatization Syndrome approximates the combined prevalence of undifferentiated somatoform disorder and somatoform disorder NOS. In two large community samples from Los Angeles and Puerto Rico, the lifetime rate of SS identified by these criteria in the was 11.6%, with 4% of the sample having "active" SS based on symptoms within the past year. Other surveys in the general population have reported rates of SS from 4.4% to 19% (Creed & Barsky, 2004). In the primary care setting, the same criteria for abridged somatization disorder yield prevalences from 7.3% to 35% (Creed & Barsky, 2004).

. As an alternative to the proposal of an abridged somatization syndrome based on the lifetime occurrence of symptoms listed in the Diagnostic Interview Schedule, Kroenke et al. (1997) proposed *multisomatoform disorder* (MSD), which requires 3 or more currently bothersome unexplained physical complaints from a symptom checklist and a history of chronic somatization. In a primary care study of almost 3000 patients, 19% met criteria for MSD, compared to 23% for abridged SD and 5.4% for full SD (Dickinson, et al., 2003).

The classical presentations of conversion disorder, including paralysis and sensory loss (e.g. : 'hysterical' blindness or deafness) are relatively uncommon in Western North American primary care settings; as a result, most studies have relied on clinical samples of patients referred to psychiatry or neurology (Akagi & House, 2001). The prevalence of conversion disorder among psychiatric patients is reported to be in the range of 0.87 to 7% (Guze, Woodruff & Clayton,

1971; Stefansson, Messina & Meyerowitz, 1976), and 1 to 9 % among neurology patients (Smith et al, 2000; Toone, 1990). Studies of community populations have reported the point prevalence to be 33 and 55 per 100 000 (Singh & Lee, 1997; Watts et al, 1964) and yearly prevalence of 0.3 and 0.7% (Faravelli et al, 1997; Nandi et al, 1980). Although the dramatic nature of many conversion symptoms ensures they come to medical attention, referral samples may, nonetheless, underestimate both community and primary care prevalence. In general, conversion symptoms are thought to be more common in rural regions, and in those of lower socioeconomic class and with less formal Western-style education, although elevated rates have also been found in some urban populations (Swartz, Landerman, Blazer & George, 1989). Cultural differences are clearly important and may explain elevated rates and specific symptoms reported in various parts of the world (Kirmayer & Santhanam, 2001). Several authors have described a decline in the prevalence of conversion disorder in Britain and the United States over the last half century (Leff, 1988). However, since most studies are based on referral populations, it remains unclear to what extent this apparent decrease simply represents changes in symptoms and patterns of help-seeking (Akagi & House, 2001).

The prevalence of hypochondriasis in the community population is not well established, with rated varying from .02% to 7.7% (Creed & Barsky, 2004). These differences may be due to the recruitment of patients through primary care registries (Faravelli et al, 1997), less stringent diagnostic criteria (Rief et al, 2001), and other methodological issues. Illness phobia, reported in 5% of subjects in a community survey (Noyes et al, 2000), is distinguished from hypochondriacal fear in that the individual has a fear or discomfort when exposed to thoughts of illness without necessarily having the fear of being ill themselves.

The prevalence of hypochondriasis in primary care patients was assessed by a large multinational study carried out by the World Health Organization (Gureje et al, 1997). They found the full disorder to be relatively uncommon, affecting 0.8% of the sample, and report a less restrictively defined syndrome in 2.2%. Other studies have identified clinically relevant levels of hypochondriacal symptoms in 4-8% of primary care patients (Barsky, Wyshak,

Klerman & Latham, 1990; Kirmayer & Robbins, 1991b). Patients with hypochondriasis have high rates of other Axis I disorders, in particular, mood and anxiety disorders (Gureje et al, 1997; Barsky, Wyshak & Klerman, 1992). Studies of both clinical and community samples demonstrate that hypochondriasis is associated with psychological distress, help-seeking, and impaired functioning (Gureje et al, 1997; Barsky et al, 1990; Looper & Kirmayer, 2001).

The epidemiology of pain disorder has not been well studied. One community survey reported the prevalence of pain disorder as 0.6% in the general population. Other reports indicate that 15% to 33% of the community population between the ages of 25-74 reporting some form of sustained musculoskeletal pain (Magni, Caldieron, Rigatti-Luchini & Merskey, 1990; Magni, Marchetti, Moreschi, Merskey & Rigatti Luchini, 1993), and up to 10-15% of adults in the U.S. have some degree of work disability from back pain alone (Von Korff, Dworkin, LeResche & Kruger, 1990). The discrepancy between these findings and the relatively low rate reported for somatoform pain disorder may be due to the diagnostic criteria that requires psychological factors to be clearly associated with the onset, course or outcome of the pain symptom for the diagnosis to be made.

The prevalence of BDD has been reported to be 0.7% in the community by two independent studies (Otto et al, 2001; Faravelli et al, 1997). This may be an underestimate because patients are reluctant to acknowledge their symptoms and seek psychological or psychiatric treatment (Cororve & Gleaves, 2001). Although the rate of BDD in clinical samples has not been thoroughly assessed, one would expect it to be considerably higher in medical specialties such as dermatology and plastic surgery where patients with BDD tend to seek help to correct what they perceive to be physical abnormalities. The broader issue of body image concerns and preoccupations may apply to a large proportion of the population as seen in two studies of college students which found similar rates of about 28% (Fitts, Gibson, Redding & Deister, 1989; Bohne, et al, 2002). The focus of concern in BDD is usually an aspect of the face or head, but may involve any area of the body, multiple body parts, or the overall shape and size of the body (Phillips et al, 1993). Mood, anxiety and personality disorders are common comorbid

diagnoses in patients with BDD (Veale et al, 1996). BDD has been associated with Obsessive Compulsive Disorder (Simeon, Hollander, Stein, Cohen & Aronowitz, 1995; Phillips et al, 1993), but the two are distinguished by the restricted focus of concern regarding bodily appearance in BDD. The degree of insight into the excessive concern of patients with BDD is variable, and includes an extreme at which the additional diagnosis of delusional disorder may be applied (Phillips & McElroy, 1993). Patients with BDD tend to not present spontaneously to mental health professionals, but are occasionally referred by primary care physicians, surgeons, and specialists who identify excessive distress and treatment for relatively minor physical problems.

Somatoform Disorder NOS is an ill-defined residual category intended to identify clinically relevant cases which do not meet the criteria of the other somatoform diagnoses. No global prevalence can be given for this diagnosis, because the vague diagnostic criteria collect a vast array of disparate symptoms and syndromes. One example is a transient form of hypochondriasis that tends to resolve spontaneously or with a doctor's reassurance, which is found in approximately 4% of primary care patients (Barsky, Cleary, Sarnie & Klerman, 1993; Robbins & Kirmayer, 1996). Other types of problems categorized as Somatoform disorder NOS may be rare, such as pseudocyesis (a persistent false conviction of being pregnant), or very common, as in various functional somatic symptoms.

Clinical Picture

The clinical picture of the somatoform disorders varies with the social and cultural background of patients, their specific somatic symptoms and the clinical context in which patients are seen. Most patients with somatoform disorders seek medical care and are referred to mental health practitioners when medical diagnosis and treatment prove ineffective. As a result of this failure of conventional treatment, patients may seek many alternative forms of care (Kirmayer, 1999). By the time the mental health practitioner sees these patients they may be frustrated and angry about the care they have received. Patients are often made to feel "its all in

your head." Clinicians, in turn, feel frustrated that ordinary reassurances or symptomatic treatments have been ineffective. The mutual disappointment and blaming of patient and physician sometimes erupts into hostility. In this context, it is easy for the consultant to misattribute anxious, hostile, or paranoid thoughts and behavior in the patient to personality traits when such behavior is, at least in part, a response to circumstances.

Somatization Disorder.

While the age of onset of Somatization Disorder is required to be before age 30 by definition, in the ECA study 55% of cases reported an onset before age 15 (Swartz, 1991, p. 231). This points to a development of SD in early adolescence or childhood. The most common symptoms in SD include: chest pain, palpitations, abdominal bloating, depressed feelings, dizziness, weakness, quitting work because of poor health, shortness of breath without exertion, headache and fatigue (Smith, Monson & Ray, 1986b). This list, however, does not capture the richness of patients' language of suffering.

> **Case 1**. A 31 year old man was referred to a behavioral medicine clinic by an
> internist for treatment of abdominal pain. He arrived with a carefully written list
> of his current symptoms ranked by the degree of distress they caused him (from
> most to least): "constant ringing in the ears; dizziness-lightheadedness; headaches
> with numbness in the face, squeezing at the temples with bands of pressure and
> fuzzy head; pain in the lower right abdomen; jerking sensations in the throat,
> chest and stomach; rapid, steady throbbing throughout the entire body; pains in
> the middle back, left shoulder and arm; numbness in the left forearm and hand
> (right forearm and hand less often); spots before eyes—occasionally; hard-to-
> breathe feeling; rapid irregular heartbeat and pounding slow heartbeat both
> usually accompanied by nausea and lasting several hours." He denied any
> personal or emotional problems and said that all was well with his work and
> homelife save that his wife and daughter were upset that his many illnesses

prevented them from ever having a family vacation. Treatment focused on
developing coping strategies for the four most distressing symptoms with the goal
of being able to take a family vacation. He was able to accomplish this after 6
sessions of cognitive behavioral therapy with hypnosis for relaxation and
symptom management. Three months later, he went to another hospital's
emergency room where his recurrent abdominal pain was diagnosed as irritable
bowel syndrome. He felt relieved to have a "definite" diagnosis and embarked on
a program to control his symptoms through dietary changes (Kirmayer, 1986).

In addition to their somatic complaints, patients with SD commonly suffer from the gamut of
psychological symptoms and often meet criteria for mood and anxiety disorders (Wetzel, Guze,
Cloninger & Martin, 1994). It is misleading, therefore, to view SD patients as having
predominately somatic problems. Over 70% of patients with SD also meet criteria for personality
disorder (Stern, Murphy & Bass, 1993). Although SD was classically related to histrionic
personality (Slavney, 1990), the most commonly associated personality disorders are avoidant,
paranoid, self-defeating and obsessive-compulsive (Smith, Golding, Kashner & Rost, 1991).

Undifferentiated Somatoform Disorder

The number and diversity of functional somatic symptoms may identify subgroups of patients
with undifferentiated somatoform disorder: (1) a "diversiform" group reports many different
symptoms in different systems, particularly pain complaints that approximates Somatization
Disorder; and (2) an "asthenic" group that reports fewer and less diverse symptoms, mainly
fatigue, weakness, and minor illnesses such as upper respiratory tract infections and resembles
neurasthenia or chronic fatigue syndrome (Bohman, Cloninger, von Knorring & Sigvardsson,
1984; Cloninger, Sigvardsson, von Knorring & Bohman, 1984; Sigvardsson, Bohman, von
Knorring & Cloninger, 1986). There is evidence both for discrete somatic syndromes, which are
common and hence often co-occur and a general tendency to report many somatic symptoms
across diverse physiological systems due to the generalized effects of somatic amplification

(Barsky & Borus, 1999; Deary, 1999; Wesseley et al. 1999). In general, patients with isolated functional symptoms or functional somatic syndromes resemble patients with other medical disorders in having elevated rates of depression, anxiety and other psychological problems which may be both contributors to and consequences of their somatic illness (Kirmayer & Robbins, 1991a).

Conversion Disorder.

Conversion disorder occurs across the lifespan and tends to affect women more frequently than men (Akagi & House, 2001). By definition, patients with conversion disorder have symptoms resembling a neurological disorder. The most common symptoms include: gait disturbances, pseudoseizures, episodes of fainting (syncope) or loss of consciousness; muscle tremors, spasms, weakness or paralysis; sensory changes, including paresthesias or anesthesia, speech disturbances (aphonia) and visual disturbances (blindness, diplopia) (Tomasson, Dent & Coryell, 1991; Toone, 1990; Watson & Buranen, 1979a). Among the symptoms classically described as hysterical conversion, the main exception to these pseudoneurological symptoms is pseudocyesis ('hysterical pregnancy') which, in DSM-IV, is classified as somatoform disorder NOS (Martin, 1996). Pseudocyesis may be associated with endocrine disturbances which sets it apart from other conversion symptoms (Small, 1986; Starkman, Marshall, La Ferla & Kelch, 1985).

> **Case 2**. A 52 year old woman presented to the general hospital emergency room with the sudden onset paralysis of her left arm and the inability to straighten her torso, walking and sitting bent over at the waist (a symptom termed *camptocormia*). She described the symptoms as having started abruptly while she was working at her typewriter in the office where she was employed as a secretary. She fear she had had a stroke. Initially, she could give no precipitating stressful event. On later questioning by her regular family physician, she revealed that she had discovered that morning that her employer had promoted a coworker

with less seniority, with whom he was having an affair, to a more senior position. She recalled that she initially felt shocked, angry and betrayed, but these feelings were forgotten when her alarming paralysis suddenly developed. She accepted an explanation from this trusted family physician that her symptoms were a "stress reaction" and she connected the intensity of her reaction to her having witnessed the sexual abuse of a sibling when she was a child. Her symptoms gradually resolved over the next two weeks with two sessions of counseling in her doctor's office to validate her feelings, identify other stressors, and plan an appropriate response to her predicament at work.

Although patients with conversion symptoms were classically described as blandly indifferent to their symptoms, showing *la belle indifférence*, clinical experience suggests they are more often concerned and distressed. This distress, however, may be mitigated by the intimation that there are other even more distressing recent events from which the conversion symptoms serve as a distraction. The form of conversion symptoms may have symbolic meaning in some situations but usually is more readily attributed to available models of illness (Slavney, 1994). For example, patients with epilepsy may develop pseudoseizures (Savard, 1990). About 70% of unilateral conversion symptoms affect the left side of the body (Axelrod, Noonan & Atanacio, 1980).

Hypochondriasis

Patients with hypochondriasis show varying degrees of concern, worry, fear and preoccupation with the notion that they have an illness. They remain concerned or convinced that something is wrong despite medical reassurance. At times this conviction may reach near delusional intensity. More typically, patients have anxieties that they view as irrational but find they cannot rid themselves of bodily preoccupation, rumination and catastrophizing thoughts.

Case 3. A 24-year-old man presented to the mental health clinic with depression and the persistent fear that he had cancer or another mortal illness.

Since the age of 12, when he learned of the sudden death of a cousin, he had
suffered from constant worries about his health. His parents had responded to his
fears by taking him on frequent visits to a pediatrician where his hyperventilation
was misdiagnosed at first as asthma. He viewed himself as vulnerable to illness
and was preoccupied with symptoms of weakness, malaise, and a chronically
stuffy nose for which he had become dependent on decongestant spray. He
described sporadic panic attacks, usually triggered by events that should have
made him angry. During these attacks he feared that he would lose his mind or die
of a heart attack. Afterward, he was left feeling still more worried that he had a
physical illness. Over many sessions of cognitive-behavioral therapy, it became
apparent that he misidentified the bodily concomitants of strong emotions like
anger, fear or even intense happiness as possible symptoms of illness. Learning to
reattribute these somatic symptoms to specific emotions and to the effects of
physiological arousal resolved his hypochondriacal worries but did not entirely
eliminate his panic attacks.

Hypochondriacal fears commonly accompany depression and anxiety disorders but may arise
and persist even when mood and other anxiety symptoms are not present (Noyes et al., 1994).
Hypochondriacal preoccupation often has an obsessional quality and may occur with other
symptoms of obsessive compulsive disorder (Starcevic, 1990). Indeed, obsessive rumination may
distinguish hypochondriasis from other milder and more prevalent forms of illness worry (Fink
et al., 2004). A sense of bodily vulnerability may be associated with more pervasive feelings of
fragility of the self or with fears of loss of control.

Body Dysmorphic Disorder

Patients with Body Dysmorphic Disorder are preoccupied with the notion that some aspect of
their body is misshapen and ugly. This bodily defect is imagined or grossly exaggerated. The
most common complaints involve the face (e.g., wrinkles, complexion, facial hair, asymmetric or

disproportionate features) hair, nose and skin, but any body part can be the focus of preoccupation (Phillips, 1991). Patients engage in frequent checking in the mirror to monitor their "defect" and may attempt to camouflage it, usually without success. They are convinced that others are reacting negatively to them and commonly have ideas or delusions of reference. They fear embarassment and avoid social situations, sometimes to the point of being housebound. As a result, the condition may result in severe social disability.

Case 4. A 34 year old married mother of four was referred to the mental health clinic by a concerned friend. She complained of a five year history of increasing social isolation caused by an intense fear of offending others with her physical appearance. She believed that her nose had been gradually growing and her eyes shrinking in size, leading to such profound ugliness that no one could stand to look at her. She had isolated herself from neighbours and family. She shopped only in stores on the other side of town where she would not encounter people who knew her. She parked her car outside her children's school but would not go inside to pick them up. She never left her home unless she had a specific errand to run.

She dated the onset of her "physical change" to the birth of her youngest child at which time the family moved to a new city so that she could care for her elderly parents. Over the three months prior to consulting the clinic, she had become increasingly distressed and hopeless about her appearance. When others reassured her that her appearance was, in fact, attractive, she thanked them for their kindness but was left completely unconvinced. She asked for therapy to be conducted by telephone so that the therapist would not be offended by her appearance and so that she would not have to travel in public to get to appointments.

In a series of 30 cases of BDD referred to psychiatry, all but two cases had mood disorders, mainly major depression (Phillips, McElroy, Keck, Pope & Hudson, 1993). Anxiety disorders

were the next most common current and lifetime diagnoses including 50% with social phobia and 37% with obsessive compulsive disorder. Fully 77% had a history of psychotic symptoms either associated with a mood disorder (43%) or as a primary psychotic disorder (33%). Given the predominance of obsessive thinking and compulsive behaviors, BDD may be related to Obsessive Compulsive Disorder and respond to similar pharmacological and behavioral treatments (Hollander, Neville, Frenkel, Josephson & Liebowitz, 1992)**.** As with OCD, BDD patients' symptoms range along a spectrum of severity from obsession to delusion (Phillips, Kim & Hudson, 1995).

Somatic Presentations of Other Psychiatric Disorders

The DSM-IV somatoform disorders leave out a group of patients sometimes described as 'somatizing' who have underlying psychiatric disorders (mainly depression, anxiety or personality disorders but sometimes also psychotic disorders) but who make exclusively somatic clinical presentations. The majority of these patients are willing to acknowledge a psychosocial contribution to their distress provided it is not presented as an explanation that excludes somatic factors (Kirmayer, Robbins, Dworkind & Yaffe, 1993). As a group, 'presenting' somatizers tend to be less depressed than patients who 'psychologize', show less social dissatisfaction, have a more negative attitude toward mental illness and are more likely to have been a medical inpatient (Bridges, Goldberg, Evams & Sharpe, 1991). They make more normalizing and fewer psychologizing attributions for common somatic symptoms, are less introspective and less likely to seek help if they are anxious or depressed (Kirmayer & Robbins, 1996).

Course and Prognosis

There is wide variation in course, disability and outcome across the somatoform disorders. Patients who meet the relatively stringent diagnostic criteria of somatization disorder or hypochondriasis have a more severe and chronic course of illness. However, the majority of patients with a somatoform disorder, and in particular those with fewer somatic symptoms of

shorter duration, usually classified as undifferentiated or NOS have a much better prognosis, improving either spontaneously or with relatively brief interventions. In general, psychiatric comorbidity is one of the most important factors contributing to chronicity for the range of somatoform disorders (Rief, Hiller, Geissner & Fichter, 1995). Nevertheless, recent research demonstrates that cognitive behavioral interventions can significantly reduce symptomatology, distress, disability and excessive or inappropriate health care utilization (Looper & Kirmayer, 2002; Sharpe et al., 1996; Speckens et al., 1995). Psychopharmacological management of somatoform disorders have not been rigorously studied, although antidepressants have been reported to be effective in treating functional somatic syndromes (O'Malley et al, 1999).

SD is defined as a chronic condition and patients generally accrue the requisite number of symptoms over a period of several years. The ECA study found that of patients with a lifetime diagnosis of SD, fully 90% had symptoms in the past year, yielding a remission rate of less than 8% (Swartz et al., 1991, p.227). This high rate of diagnostic stability was also found in a study in which patients were reassessed after 4.5 years of the original diagnosis (Kent et al, 1995). Patients with SD are liable to continue to experience multiple somatic symptoms in shifting functional systems. They are at risk for iatrogenic illness due to complications of invasive diagnostic procedures, and unnecessary medication or surgery. In contrast, patients with sub-threshold somatization disorder have a much better outcome. In one study, 76% improved including 30% recovered after a mean of 15.2 months (Speckens et al, 1996).

For patients with Somatization Disorder, a simple intervention consisting of a consultation letter to the patient's primary care physician has been shown to significantly reduce expenditures for health care and improve health outcomes (Rost, Kashner & Smith, 1994; Smith et al, 1986). The letter includes information on the diagnosis of somatization disorder and suggestions for the frequency of scheduled visits, reduction of investigations of new symptoms, and avoidance of hospitalization and surgery unless clearly indicated. Similar benefits have been demonstrated for psychiatric consultations with primary care patients with Undifferentiated Somatoform Disorder or Subsyndromal Somatization (Smith, Rost & Kashner, 1995).

Bass and Benjamin (1993) have outlined a general approach to the clinical management of the chronic somatizing patient geared to general practitioners. They include the following strategies: (1) in the initial interview identify psychosocial issues but avoid direct confrontation; (2) provide unambiguous information about medical findings; (3) plan time for gradual discussion of psychosocial issues; (4) work out a problem list and negotiate an agenda with the patient; (5) set limits for diagnostic investigations. Additional efforts at psychological support and reattribution training may further improve outcome (Kashner et al, 1995; Lidbeck et al, 1997; Speckens et al, 1995; McLeod et al, 1997; Sumathipala et al, 2000).

Conversion Disorder tends to be an acute, self-limited condition, with approximately 50- 90 % improved or recovered in studies that reassessed patients after 2-6 years (Kent et al, 1995; Crimlisk et al, 1998; Binzer & Kullgren, 1998). Conversion symptoms usually have an abrupt onset in relation to some acute stressor, cause substantial impairment and resolve spontaneously or respond to a wide variety of suggestive therapeutics. Patients who progress to chronicity have less recent onset of symptoms, greater psychiatric comorbidity, intractable social circumstances and a broader propensity to experience and report multiple somatic symptoms through which they eventual reach criteria for SD (Couprie, Wijdicks, Rooijmans & van Gijn, 1995; Kent, Tomasson & Coryell, 1995). Longitudinal studies of patients with conversion disorders have found that 10-50% are eventually diagnosed with an organic disease which may have accounted for their conversion symptoms (Cloninger, 1987; Slater, 1965; Watson & Buranen, 1979b), however, the results of recent studies are in the lower end of this range of outcomes (Kent et al, 1995; Crimlisk et al, 1998; Binzer & Kullgren, 1998). The development of somatization disorder was found in about 20% of patients with Conversion disorder followed for two years in a general hospital (Kent et al., 1995; Tomasson et al., 1991). The link between Conversion Disorder and Somatization Disorder is overstated in DSM-IV, however, since in the general population, sporadic conversion symptoms are much more common than somatization disorder. There few recent studies of the treatment of conversion disorder have emphasized a cognitive-behavior

therapy, the use of physical rehabilitation methods, and the use of hypnosis (Halligan, Bass & Marshall, 2001).

Although hypochondriasis is defined as a chronic condition, about 50% of patients with high levels of hypochondriacal worry in primary care have their anxiety at least temporarily resolved with standard reassurance and so have 'transient' hypochondriasis (Barsky, Wyshak & Klerman, 1990b). Medical illness or other life events may give rise to transient hypochondriasis (Barsky et al., 1993). Previous or co-existing psychiatric disorder, including Axis I disorders and personality disorders predispose a person to the development of persistent hypochondriasis (Barsky et al., 1992; Robbins & Kirmayer, 1996). Psychoeducational and cognitive-behavioral approaches to reduce hypochondriacal anxiety can improve the prognosis in this group with persistent worry (Barsky, 1996; Warwick & Salkovskis, 1990). Similar results have been reported for patients with Body Dysmorphic Disorder (Rosen, Reiter & Orosan, 1995b).

As noted above, up to 33% of the adult population in the US suffer from some form of chronic pain. An 8 year follow-up study suggests that about 1/3 of people with chronic musculoskeletal pain will recover while 2/3 continue to be symptomatic (Magni et al., 1993). Patients with multiple, anatomically unrelated pains differ from those with discrete, localized chronic pain in having greater psychiatric comorbidity. Data from the ECA study suggest the total number of pain complaints is more predictive of associated psychopathology and utilization of health care services than the specific location, duration, severity or medical explanation of the pain complaints (Dworkin, Von Korff & LeResche, 1990; Von Korff, Wagner, Dworkin & Saunders, 1991). People with single pain complaints did not differ from those with no history of pain in rates of psychiatric disorders and health service utilization. Psychological factors contribute to the risk of acute pain becoming a chronic condition. In a study of patients with acute herpes zoster (shingles), patients who went on to develop chronic pain had higher state and trait anxiety, more depressive symptoms, lower life satisfaction and greater disease conviction at the time of their initial assessment (Dworkin et al., 1992).

Etiological Considerations

Studies of somatoform disorders have considered the role of personality, psychodynamic, cognitive and social factors in shaping symptom experience. In this section we will consider putative etiological factors in terms of temperamental differences, personality and psychiatric comorbidity; sensory-perceptual mechanisms; cognitive-evaluative processes; emotion suppression or inhibition; and social-interactional factors. Finally, we will discuss the role of specific development experiences including trauma and present an integrative model of somatization.

Personality and Psychiatric Comorbidity.

The tendency to experience high levels of both somatic symptoms and emotional distress may reflect underlying temperamental traits, particularly the trait that has been termed Neuroticism or Negative Affectivity in factorial studies of the dimensions of personality (Pennebaker & Watson, 1991). Individuals high on negative affectivity are more prone to experience affective and anxiety disorders which give rise to somatic symptoms. Health anxiety and hypochondriacal worry are strongly associated with Neuroticism (Cox et al, 2000). Lower levels of dysphoria may also give rise to significant somatic symptoms through physiological mechanisms like hyperventilation or sleep disturbance (Sharpe & Bass, 1992). Individuals with high levels of Negative Affectivity may also experience more frequent, intense and distressing bodily sensations due to the dysregulation of autonomic or pain control systems even in the absence of dysphoric mood.

The majority of patients with SD meet criteria for personality disorders (Stern et al., 1993). Indeed, it has been suggested that SD itself is best conceptualized as a personality disorder based on an interaction between temperamental traits of Negative Affectivity and family experiences modeling and reinforcing the sick role (Kirmayer, Robbins & Paris, 1994). First-degree relatives of patients with SD have elevated rates of SD, antisocial personality disorder, major depression and alcoholism (Cloninger, Martin, Guze & Clayton, 1986). Cross-fostering adoption studies of

somatization disorder provides evidence for both heritable pathophysiological mechanisms and family environment in somatization (Bohman et al., 1984; Sigvardsson et al., 1986).

In a classic paper, Engel (1959) introduced the notion of the 'pain prone personality' characterized by perfectionistic striving, minimization or denial of emotional distress. Blumer and Heilbronn (Blumer & Heilbronn, 1982) later expanded this notion to include 'ergomania' or 'workaholism' and a familial tendency toward depression. Personality factors may play a role in aggravating pain whatever its origins but do not reliably distinguish patients with clear cut medical explanations for the pain from those whose problems are more complicated and obscure. Turk and Melzack (1992) concluded that "the search for a 'pain prone personality'… or psychogenic pain has proved futile."

Fully 2/3 of people with major depressive disorder in primar care have chronic pain and in about 25% of those with depression the pain is disabling (Arnow, et al., 2006). Studies of clinical populations with pain show high levels of comorbid Axis I disorders. Depression is the most common diagnosis and is found in 25% to 50% of hospital patients with acute pain referred to psychiatric evaluation, and from 10% to 100% of patients with chronic pain (Blumer & Heilbronn, 1982; Romano & Turner, 1985). However, earlier claims that chronic pain was essentially a variant of major depressive disorder (Blumer, 1984; Blumer & Heilbronn, 1982) have not been borne out by more recent studies showing that many chronic pain patients have little or no evidence of depressed mood and that major depression somewhat more likely to be a consequence of chronic pain than an antecedent (Brown, 1990; Magni, Moreschi, Rigatti Luchini & Merskey, 1994; Thieme, Turk & Flor, 2004). Specific types of pains may be associated with other specific psychiatric disorders; for example, up to one-third of patients with noncardiac chest pain have concurrent panic disorder (Beitman, Mukerji, Flaker & Basha, 1988).

Somatic Perception, Attention and Amplification

One obvious potential cause of increased symptom reporting is sensory or perceptual sensitivity to bodily sensations. Sensitivity to specific body sensations may increase among

individuals who suffer from chronic health problems affecting that part of the body; for example, patients with asthma may become more aware of experimentally induced changes in their breathing (Rietveld & Houtveen, 2004). There is some evidence for greater sensitivity to specific bodily sensations in patients with irritable bowel syndrome (Kwan, Diamant, Mikula & Davis, 2005), functional dyspepsia (Jones, Roth & Cromwell, 2005) and some chronic pain syndromes (Wahlund, List & Ohrbach, 2005). Individuals with somatoform disorders may be more sensitive to a range of sensations (Houtveen, Rietveld, & de Greus, 2003).

Mechanic and others have studied the effect of "introspectiveness" on the increased reporting of both psychological and somatic symptoms (Hansell & Mechanic, 1986; Mechanic, 1979). Individual differences in the tendency to focus attention on the self and on bodily sensations are associated with elevated symptom reporting in the laboratory and in epidemiological studies (Kolk, et al., 2003; Pennebaker, 1982; Robbins & Kirmayer, 1986; Robbins & Kirmayer, 1991b). While self-focused patients tend to report both somatic and psychological symptoms, patients who preferentially attend to the body may be more likely to report somatic rather than cognitive or emotional symptoms.

Barsky and Klerman (1983) introduced the notion of *somatic amplification*: an hypothesized tendency for individuals to experience bodily sensations as intense, noxious and disturbing. Related concepts include augmenting-reducing and perceptual sensitivity. Amplification may involve sensory, perceptual and cognitive-evaluative processes. The background level of everyday bodily discomfort (a sort of bodily "white noise") as well as the higher levels of distress that ordinarily accompany illness or injury may be selectively focussed on and amplified by some individuals giving rise to more varied and intense symptom reports and hypochondriacal worry.

To test this hypothesis, Barsky and colleagues (1990a) developed the Somatosensory Amplification Scale (SSAS), an eleven-item self-report questionnaire with adequate internal consistency and test-retest reliability. Higher levels on the SSAS were found in hypochondriacal patients as well as in patients making frequent use of medical care (Barsky, 1992; Barsky, Cleary

& Klerman, 1992). Unfortunately, despite its name, the SSAS does not really tap underlying perceptual processes of amplification. It includes many symptom experience items that represent the outcome of hypochondriacal cognitions rather than a mediating process (Aronson, Barrett, & Quigly, 2001) .There is a need for measures of amplification that tap specific cognitive and perceptual processes and for longitudinal studies to determine the direction of causality between amplification and symptom experience.

While selective attention and preoccupation with the body may lead to amplified somatic sensations, conversion symptoms seem to involve a different deployment of attention, in which the affected body part, function or sensory system is selectively ignored. This form of selective inattention or alternate control is usually subsumed under the construct of dissociation (Kihlstrom, 1992). Evidence that conversion disorders are related to dissociative mechanisms comes from observations of their frequent occurrence in patients with Dissociative Identity Disorder (Putnam, Guroff, Silberman, Barban & Post, 1986), high levels of hypnotic susceptibility in patients with conversion symptoms (Bliss, 1984), the ability to create laboratory models of conversion symptoms with hypnosis (Sackeim, Nordlie & Gur, 1979), and a dramatic therapeutic response to hypnosis (Williams, Spiegel & Mostofsky, 1978).

Dissociative mechanisms may also contribute to other somatic symptoms to the extent that individuals high on hypnotizability or openness to absorbing experiences may be more likely to become intensely focussed on and absorbed by bodily sensations. Wickramasekera (1995) has suggested that there are two groups of somatizing patients: one with high levels of hypnotizability and the tendency to be absorbed by their symptoms and the other with unusually low levels and the inability to block out noxious sensations. Brown (2004) suggests that in response to traumatic events some individuals may develop "rogue representations" that are dissociated from consciousness and that give rise to persistent somatic symptoms.

Cognitive Evaluation, Attribution and Coping

Attention is guided by cognitive schemas that indicate potential sources of threat (Cioffi, 1991; Lazarus & Folkman, 1984). Somatizers may be primed by pre-existing schemas or beliefs about their own vulnerability to disease to interpret the generalized malaise and symptoms that accompany affective or anxiety disorders as indicating serious physical illness. The literature on hypochondriasis and abnormal illness behavior has demonstrated the role of worry, fear, disease conviction and self-rated bodily sensitivity or intolerance to noxious stimuli as important correlates of somatic symptom reporting (Barsky, Goodson, Lane & Cleary, 1988; Barsky & Klerman, 1983; Pilowsky, 1967). Hypochondriacal worry often accompanies depression and anxiety disorders and, when sufficiently intense, may overshadow other symptoms (Barsky et al., 1992).

A lack of effective coping with common bodily symptoms or illnesses may result in greater anxiety about the body, increased body-focus, persistent symptoms and hypochondriacal worry. Hypochondriacal college women (as indicated by high scores on the MMPI hypochondriasis scale) tend to spend more time on health related pursuits than those who are less symptomatic (Karoly & Lecci, 1993). This preoccupation with efforts to assess and maintain one's health interacts with more specific thoughts linking bodily sensations to illness. Hypochondriacal patients are prone to catastrophizing thoughts in which they equate specific bodily sensations or events with the idea that they are sick (Salkovskis, 1989). For example, a patient may think, "This tightness in my chest is not normal. It's probably from my heart. Maybe I'm going to have a heart attack." These thoughts create more anxiety, and focus attention on the chest area. Both the anxiety and the attentional focus may increase muscle tension in the chest wall leading to more symptoms which, in turn, increase the conviction that one is ill. The more dire the symptom interpretation, the greater the anxiety, tension and distress.

Somatic amplification affects both somatic and emotional distress and so cannot account for the denial of coexisting emotional problems found in some somatizing patients. The selective emphasis on somatic symptoms and explanations for distress may have more to do with attributional style, defense style or structural factors influencing help-seeking and stigmatization.

An unwillingness or inability to attribute the bodily concomitants of emotional arousal or affective disorder to psychosocial causes may lead patients to present clinically with somatic symptoms while minimizing underlying emotional distress (Robbins & Kirmayer, 1986).

Robbins and Kirmayer (1991a) developed the Symptom Interpretation Questionnaire (SIQ), a self-report measure that asks respondents to rate the extent to which they would attribute common somatic symptoms to each of three types of hypothetical causes: *somatic* (physical disorder or disease); *psychological* (emotional distress or problem); and *normalizing* (environmental or other ordinary external event) (e.g., "If I felt fatigued, I would probably think that it is because: (1) I'm emotionally exhausted or discouraged; (2) I'm anemic or my blood is weak; and (3) I've been over-exerting myself or not exercising enough"). Among family medicine patients, the SIQ has been found to predict somatizing or psychologizing clinical presentations of depression and anxiety (Kirmayer & Robbins, 1996; Robbins & Kirmayer, 1991a). Patients with psychiatric disorders are more likely to attribute common somatic symptoms to psychological causes on the SIQ (Wise & Mann, 1995). A subset of items of the SIQ predicted the tendency for primary care patients with fatigue associated with an acute viral illness to subsequently develop chronic fatigue (Cope, David, Pelosi & Mann, 1994). Patients who are high frequency users of medical care are less able to generate normalizing explanations for common somatic symptoms (Rigby, MacLeod & Sensky, 1993).

Bridges and colleagues (1991) found that patients who make somatized presentations of depression or anxiety in primary care have more hostile attitudes toward mental illness than those who make psychosocial presentations. Somatizers may live in familial or cultural contexts where mental illness is stigmatized. These negative attitudes toward mental illness extend to a greater hesitancy among somatizers to talk to a doctor about any emotional problem and a greater reluctance to seek specialty mental health care (Kirmayer & Robbins, 1996).

Attributions of distress to physical illness may also act to limit the dysphoria and loss of self-esteem that would otherwise result when distress is attributed to personal character or emotional weakness. Bridges and colleagues (1991) suggest that insisting on a physical illness explanation

for symptoms and holding the doctor responsible for missing the correct organic diagnosis removes personal blame from the somatizer. The blame-avoidance function of somatization may explain why patients who make somatic presentations of depression or anxiety in primary care tend to report lower levels of dysphoria than do psychosocial presenters (Bridges et al., 1991; Powell, Dolan & Wessely, 1990; Verhaak & Tijhuis, 1994).

The interaction between anxiety, attention and attributions is demonstrated very clearly in the phenomenon of "medical students' disease" (Mechanic, 1972). A substantial proportion of medical students experience transient hypochondriasis. The pressures of study, sleep loss and apprehension about examinations lead to anxiety. Inundated by information about pathophysiology, students scan their bodies and misinterpret benign sensations as signs and symptoms of disease. The hypochondriacal worry that results usually resolves when the stress of examinations passes and when students acquire additional information to clarify that their unusual sensations do not fit the pattern of any disease. To the extent that this is a useful model of transient hypochondriasis, what must be added to explain clinical hypochondriasis are the factors that lead to chronicity.

Emotion Suppression, Inhibition and Denial

There is limited empirical support for an earlier generation of psychodynamic hypotheses about the relationship of intrapsychic conflict, personality and defense mechanisms to somatization. Much of this literature assumed an either/or relationship between somatization and psychological-mindedness in which distress was either adequately cognized and expressed in symbolic terms through the language of psychology or suppressed, repressed, and converted into physiological distress. This 'either/or' theory has not been borne out in large scale epidemiological studies where somatic and emotional distress are found to be highly positively correlated rather than inversely correlated as psychodynamic theory might suggest (Simon & Von Korff, 1991). However, these epidemiological studies have not attempted to separate out a subgroup for whom emotional and somatic distress might be inversely correlated, nor can they

deal with the possibility that self-reports are not accurate reflections of underlying distress or physiological disturbance. It is possible that epidemiological studies based on self-report questionnaires or lay interviewers incorrectly classify as healthy some people who deny both emotional distress and somatic symptoms (Shedler, Mayman & Manis, 1993). Study of the consequences of this type of 'illusory' mental health requires careful clinical assessments and measures of dysfunction that are independent of self-report.

A group of related concepts—including *repression-sensitization*, *alexithymia*, *levels of emotional awareness*, and *level of thinking*—involve the tendency to suppress emotional expression or the inability to cognitively elaborate emotional conflict. The relevance of these concepts for somatization derives from the theory that suppression or 'hypocognition' of strong emotions will lead to more prolonged emotional arousal which in turn may result in higher levels of somatic symptoms and distress (Pennebaker, 1995).

Some support for the notion of somatization versus verbalization as 'either/or' phenomena comes from studies of repressive coping style (Schwartz, 1990). There is evidence that while individuals who are 'repressors' initially report less emotional distress in response to an acute stressor, they show more prolonged levels of physiological arousal, and increased depressive and somatic symptomatology over the long run (Bonanno & Singer, 1990). Similarly, suppressing or not telling one's story of stress or trauma may lead to persistent somatic symptoms. Conversely, telling one's story can relieve symptoms (Pennebaker, 1990).

It often has been claimed that somatizing patients lack 'psychological mindedness' —that is, the ability to label, symbolize and describe their emotions, fantasies, conflicts or other aspects of their inner life. Efforts have been made to operationalize this deficit in the concept of *alexithymia*—a term coined by Sifneos (1973) from Greek roots to mean "no words for feeling." Alexithymic individuals are said to lack the ability to discriminate feelings and bodily sensations, tend not to express their psychological states, think in a concrete and action-oriented rather than a reflective way about the world and lack a rich fantasy life. The Toronto Alexithymia Scale (TAS) is currently the most psychometrically sound self-report measures of alexithymia (Taylor,

Bagby, Ryan & Parker, 1990). The most recent version of the TAS has three distinct dimensions which correlate differently with symptom and personality measures (Hendryx, Haviland, Gibbons & Clark, 1992; Hendryx, Haviland & Shaw, 1991; Kirmayer & Robbins, 1993). Scores on the TAS are also significantly affected by level of education (Kauhanen, Kaplan, Julkunen, Wilson & Salonen, 1993; Kirmayer & Robbins, 1993)

Some studies have found that individuals with somatoform disorders have elevated scores on the TAS (De Gucht, Fischler & Heiser, 2004; Waller & Scheidt, 2004), while others have found no association between alexithymia and the prevalence or course of medically unexplained symptoms (Kooiman, et al., 2000; Kooiman, et al., 2004). A community study found no relationship between alexithymia and somatic symptom reporting when anxiety and neuroticism were controlled (Lundh & Simonsson-Sarnecki, 2001). In fact, alexithymia is more closely related to measures of depressive symptoms than to somatization (Cohen, Auld & Brooker, 1994; Honkalampi, et al. 2000). Depression or dysphoria may be associated with a range of confusing sensations that cannot be clearly separated into emotions and bodily symptoms and this is the dimension of the TAS that is most strongly associated with medically unexplained symptoms. At present the TAS has little utility in clinical settings (Kooimqn, Spinhoven & Trijsburg, 2002) and, in particular, should not be used to exclude patients from psychotherapy because they are deemed 'not psychologically minded' since this is likely to be a state secondary to preoccupation with somatic symptoms that can change as these symptoms are directly addressed through techniques of behavioral medicine (Looper & Kirmayer, 2002; Wise, Mann, Mitchell, Hryniak & Hill, 1990).

Family, Social and Developmental Factors

Developmental experiences of reinforcement and modeling of illness behavior shape adult patterns of symptom reporting and health care utilization. For example, childhood reinforcement of illness behavior in response to menstruation correlates with adult premenstrual symptoms and associated disability; similarly, reinforcement of illness behaviour in response to colds predicts

adult levels of symptomatology and disability with colds (Whitehead et al., 1994). Exaggerated parental concerns with illness, pathologizing of normal sensations (or misattribution of bodily concomitants of emotional distress) and medical help-seeking may predispose children to develop bodily preoccupation and anxiety as adults (Benjamin & Eminson, 1992; Watt et al., 1998). Compared to mothers with a history of stomach ulcers, mothers with irritable bowel symptoms were more likely to take their infants for treatment than, providing evidence of early social reinforcement of illness behavior (Crane & Martin, 2004). This early infant experience might increase the child's vulnerability to a range of functional disorders, including irritable bowel syndrome by modeling and reinforcing symptom reporting, help-seeking or sickness behavior. For example, childhood reinforcement of illness behavior in response to menstruation correlates with adult premenstrual symptoms and associated disability; similarly, reinforcement of illness behaviour in response to colds predicts adult levels of symptomatology and disability with colds (Whitehead et al., 1994). These effects are specific to illness and independent of the effects of life stress and Neuroticism. A lack of parental protection in childhood may also increase the likelihood of high rates of health care utilization for somatoform symptoms in adulthood (Craig, Drake, Mills & Boardman, 1994)A study in an experimental setting found some tendency for mothers with somatoform disorders to pay less attention than non-somatizing mothers to their children's play but to show greater interest when their children played with a toy doctor's kit (Craig, et al., 2004). This suggests a pathway in the intergenerational transmission of bodily preoccupation and symptom reporting.

There has been increasing interest in the role of trauma in medically unexplained symptoms (Walker, Gelfand, Gelfand, Koss & Katon, 1995; Walker, Katon, Neraas, Jemelka & Massoth, 1992). Traumatic experiences in adulthood, such as domestic violence or state violence experienced by refugees, may also lead to persistent somatic problems (McCauley et al., 1995; Westermeyer, Bouafuely, Neider & Callies, 1989).

There has been some suggestion that somatization disorder and conversion symptoms, in particular, may be associated with childhood sexual abuse (Alper, Devinsky, Perrine, Vazquez &

Luciano, 1993; Coryell & Norten, 1981; Morrison, 1989). However, the association is nonspecific since histories of trauma and abuse are found among patients with a wide range of psychological disorders. Most studies find that somatoform disorders are associated not with sexual abuse, but with childhood emotional abuse and parental rejection or neglect (Brown, Schrag & Trimble, 2005; Lackner, Gudleski & Blanchard, 2004). The impact of childhood psychological abuse is mediated by poor family functioning (Salmon, Al-Marzooqi, Baker & Reilly, 2003). A lack of parental protection in childhood may increase the likelihood of high rates of health care utilization for somatoform symptoms in adulthood (Craig, Drake, Mills & Boardman, 1994). There is evidence that adults with somatoform disorders tend to display insecure attachement styles (Waller, Schedit & Hartmann, 2004). Childhood trauma may lead to insecure attachment as an adult, which in turn may contribute to the tendency to report multiple somatic symptoms and high levels of medical service utilization (Waldinger, et al., 2006). Insecure attachment may also play a role in hypochondriasis. Hypochondriacal patients attending a medical clinical have evidence of interpersonal problems and an insecure attachment style, characterized by fear of rejection (Noyes, et al., 2003). This may lead them to seek medical care but their anxious efforts to obtain reassurance eventually may provoke the very rejection they fear.

Psychophysiological Processes

By definition, psychological and social processes are a central component in the development of physical distress in somatoform disorders. However, this does not imply that the physical symptoms are feigned or otherwise imaginary. Medically unexplained symptoms are often referred to as "functional," in that they are a result of an alteration or disturbance of a physiological function rather than an abnormal structure. This provides a possible biological link in the development of somatoform symptoms, through the many interactions between

psychological processes and physiological systems. Although these interactions are not yet well understood, some of the interfaces between psychological and physical systems have been identified.

Sickness behavior is a term that refers to a constellation of non-specific physical symptoms and behaviors manifested during the acute phase of illness. This may include decreased activity, appetite, interest, and malaise, which are symptoms common to both medical and emotional distress. Sickness behavior has a physiological basis, mediated by centrally acting proinflammatory cytokines such as interleukin and tumor necrosis factor (Kelley, Bluthe, Dantzer, Zhou, Shen, Johnson, et al., 2003). Among patients with viral infections, pro-inflammatory cytokines released from peripheral blood mononuclear cell cultures have been associated with reported manifestations of acute sickness behavior (Vollmer-Conna, Fazou, Cameron, Li, Brennan, Luck, et al., 2004). Although infection is the classical example of acute phase illness reaction, the release of cytokines can be triggered by an exogenous danger signal such as a physical or emotional threat in the environment (Fleshner, Campisi, Amiri & Diamond, 2004). The responsiveness of the brain cytokine system may be modified by sensitization during early stages of development, repeated activation, and prior exposure to environmental stressors (Dantzer, 2005).

The hypothalamic-pituitary-adrenal (HPA) axis has long been a focus of investigation of psychophysiological effects. Emotional distress has been linked with HPA alterations causing elevated cortisol levels and the failure of dexamethasone suppression of cortisol (McEwen, 2000). Although the sudden release of cortisol is part of the "fight or flight" response characterized by physiological and behavioral activation, chronic stimulation or dysregulation of the HPA axis may have damaging physical effects. HPA dysregulation may be an underlying process in the

development of functional syndromes characterized by fatigue and pain. Decreased ACTH levels were associated with the duration of and severity of fatigue in a study of chronic fatigue syndrome (CFS) (Gaab, Engert, Heitz, Schad, Schurmeyer, & Ehlert, 2004). HPA dysfunction may be an acquired phenomenon resulting from biological triggers such as infection or secondary factors such as prolonged inactivity, physical deconditioning and sleep abnormalities. The body's stress response system has immunological effects through two basic mechanisms. Glucocorticoids such as cortisol have an immunosuppressant effect, while other neuro-immune modulation may occur through direct sympathetic innervation of lymphoid organs (Felten, Madden, Bellinger, et al, 1998). The HPA stress response system and immune system have complex interactions that may contribute to persistent feelings of sickness and a wide range of somatic symptoms (Dinan et al., 2006).

The most common physical symptoms identified as a source of physical distress are pain symptoms including joint pain, back pain, headache, chest pain, and abdominal pain (Kroenke & Price, 1993). Theories of pain perception in functional gastrointestinal disorders have been well developed and provide an example relevant to other somatic pain syndromes. The function of the gastrointestinal tract is controlled by a complex neuronal network including the intrinsic enteric nervous system which spans the entire length of the gastrointestinal system, and the extrinsic nervous system which includes both central and peripheral (spinal and autonomic) components (Ringel & Drossman, 1999). This bi-directional system allows both physical and emotional factors to initiate and moderate sensations of gastrointestinal pain. Early theories of pain conceptualized a unidirectional flow of pain signals from peripheral nerves to the central nervous system that would be a passive recipient of sensory input (Benini & DeLeo, 1999). Current theories attribute an active role for the central nervous system in the experience of pain through

sensory, affective and cognitive processing as well as several descending pathways involved in peripheral pain modulation (Fields, 2000; Petrovic, Kalso, Petersson & Ingvar, 2002).

A growing literature indicates that multiple interacting systems are involved in the development of somatic symptoms including initiating, modulating and perceiving these sensory experiences. Theoretical models of somatoform symptoms must include the interaction of psychological processes with physiological systems including the nervous system, the HPA axis, and the immune system in explaining symptom formation.

An Integrative Model

The physiological, psychological and social factors discussed above may interact in a series of nested vicious cycles to give rise to persistent somatoform disorders. Figure 1 depicts just some of these loops that may explain the emergence, persistence and outcome of somatoform disorders.

Bodily sensations arise from everyday physiological disturbances or common illness, such as viral infections, or from emotional arousal or major mood or anxiety disorders. These sensations may be more or less insistent, capturing attention despite efforts to ignore them, but even mild sensations can become magnified once attention is focused on the affected region of the body. Selective attention to the body or to specific sensations is guided by cognitive-interpretive processes which make use of symptom and illness schemas. These include attributional processes by which sensations may be interpreted as symptoms or signs of an illness. Once an illness schema is accessed it may guide subsequent attention to identify further symptoms confirmatory of the illness out of the background noise of bodily sensations (Arkes & Harkness, 1980). More or less neutral sensations may also be re-evaluated as uncomfortable and threatening. To the extent that the ensuing thoughts and images represent the putative illness as serious, cognitive-evaluation will lead to illness worry, catastrophizing and demoralization. The

identification of a potentially worrisome symptom leads to the search for a remedy and, if it persists, to adoption of the sick role with restrictions in activity. The response of care providers may validate the sick role or question the reality of the person's symptoms and suffering.

Specific traits and external factors may act at many levels in this evolution of illness cognition and behavior. Constitutional or acquired differences in autonomic and emotional reactivity may make some individuals more prone to experience uncomfortable bodily sensations due to physiological dysregulation or dysphoric mood. Differences in attentional set, attributional style and coping will influence the tendency to minimize, ignore or explain symptoms away on the one hand, or become absorbed in sensations and convince oneself that they are symptoms of a serious illness.

All of these processes are normal aspects of the response to any illness. They may reach disabling levels for some individuals either because of the intensity of specific factors or because of runaway feedback loops. Only some of these potential loops have been drawn in the diagram. One loop involves feedback from illness worry and catastrophizing to emotional arousal which in turn generates more symptoms. This loop is the focus of the cognitive assessment and treatment of hypochondriasis (Warwick & Salkovskis, 1990). A second loop runs from sick role behavior back to physiological disturbance; this occurs, for example, when restriction or avoidance of activity leads to physical deconditioning with consequent feelings of fatigue, weakness and muscular discomfort. This loop has been postulated to play a key role in the genesis of chronic fatigue syndrome and cognitive-behavioral interventions aimed at modifying this cycle have proven therapeutically efficacious (Wessely & Sharpe, 1995) .

Finally, two loops are drawn to suggest the importance of social processes in exacerbating and maintaining somatization. There is much evidence that the response of family members, employers, health care professionals and the larger society to a person's illness behavior may either aggravate or resolve somatoform disorders (McDaniel, Hepworth & Doherty, 1992). Many of these studies involve patients with chronic pain. Couple and family response is known to

influence the intensity and disability associated with chronic pain (Block, Kremer & Gaylor, 1980).

Several studies have measured multiple levels of this model to examine the interaction of factors and demonstrate the independent contributions and interactions of processes including attentional focus, symptom attribution, and coping (Robbins & Kirmayer, 1991; Kolk et al., 2002; 2003; 2004). The model is quite general in that similar processes are at work in individuals' adaptation to symptoms of any illness. As such, the model lends itself to attempts to reformulate the somatoform disorders in terms of dimensions of illness behavior and to relocate these problems under the diagnostic rubric of "psychosocial factors affecting physical condition" (Mayou, et al., 2005). Each of the identified processes would constitute a dimension of illness behavior that could be unpacked to develop a more refined nosology that would include assessments of attentional focus, attributional bias, symptom meanings, and coping strategies.

The model goes beyond psychological processes within the individual to consider the impact of social context. The course of somatoform disorders is strongly influenced by the response of care-providers and the health care system. Excessive and invasive diagnostic investigations may increase patients' worry and conviction that they are ill, heighten body consciousness and lead to the reporting of more somatic symptoms. Conversely, realistic reassurance and opportunities to receive support and clinical care without the need to present fresh somatic symptoms as a 'ticket' to see the doctor can reduce the intensity of somatic distresss, health care utilization and costs, and the risk of iatrogenic illness (Smith, Monson & Ray, 1986a). The single best predictor of return to work after back injury is pre-injury level of job-satisfaction (Kleinman, Brodwin, Good & Good, 1992).

Wider societal attitudes and cultural notions about specific illnesses and vulnerabilities may also contribute to the emergence of specific syndromes. This was observed in the sudden rise in repetitive strain injury syndrome in Australia in response to insurance and disability coverage (Hall & Morrow, 1988). Similar stories could be told about environmental senstivity syndrome, hypoglycemia, chronic candidiasis, and other historically popular diagnoses which may be

promoted by mass media (Shorter, 1994). Chronic fatigue syndrome may be an example of an enduring problem which is undergoing a renaissance due, in part, to media corverage (Abbey & Garfinkel, 1991). In the case of chronic fatigue, the influence from social responses also runs back to attributions. Patients who find their illness doubted or discounted by health care providers may become more insistent on a disease explanation for their distress in an effort to gain legitimacy and counteract the stigma associated with psychological and psychiatric problems (Wessely, 1994). Clinicians' power to ratify illness is a double-edged sword. There is evidence, for example, that primary care patients with an acute viral illness who are intensively investigated are more likely to go on to develop chronic fatigue (Cope et al., 1994). It is particular important to re-assess these social loops when problems do not respond to interventions focused exclusively at an individual level.

Diagnostic Considerations

The category of somatoform disorders arises from the assumption that medically unexplained somatic distress and worry can be attributed to psychopathology. In fact, this determination is often difficult to make (Kirmayer, 1994). The diagnostic criteria for somatoform disorders raise a number of thorny diagnostic problems including: (1) when is a symptom medically unexplained? (2) when is worry or distress excessive? (3) when can a symptom said to be 'psychogenic', that is, predominately caused by psychological factors?

The notion that a symptom is medically unexplained is based on efforts to rule out identifiable organic causes. The extent of the medical investigation depends on available technology and clinical practices. The offering of a plausible explanation for symptoms, even in the absence of definite laboratory confirmation, depends on current medical knowledge. New theories and technology allow further investigations and provide new explanations for previously obscure symptoms. To some extent, the decision that a symptom or syndrome is idiopathic or unexplained reflects diagnostic conventions within the medical community which are, in turn, influenced by larger social forces. For many patients and practitioners, calling a syndrome

"unexplained" is tantamount to saying that symptoms are imaginary. However, there are many types of physiological perturbation that can give rise to significant somatic distress (Sharpe & Bass, 1992). For example, unnoticed hyperventilation can give rise to feelings of faintness, shortness of breath, paresthesias and other unusual sensations. Our ability to measure abnormalities in the functioning of many physiological systems is still quite rudimentary. It is likely that many functional symptoms and syndromes are due to disturbances of physiological process rather than gross structural abnormalities and hence, will lie beyond the power of clinical and laboratory measures to resolve for some time to come.

In the case of hypochondriasis, there is an assumption that worry and emotional distress are greater than appropriate for the severity or likelihood of organic disease. However, there are no established norms for how much distress is appropriate to a given condition so that clinical judgments that distress is exaggerated may be influenced by factors other than the relative level of patients' worry. The diagnostic criteria for hypochondriasis also include the notion that the patient's illness worry does not respond to appropriate medical reassurance. But how much reassurance is enough? Do most patients given the label hypochondriacal actually receive adequate reassurance? When assessed in primary care, each laboratory investigation the clinician conducts causes apprehension and uncertainty so the clinician's ultimate declaration that 'nothing is wrong' may be met with some doubt. When hypochondriacal patients are evaluated and treated by mental health practitioners, they may find that a sudden shift to focus on their anxiety and related psychological or social problems conflicts with the experiential primacy of their somatic distress. In either case, the assumption that they have been 'adequately' reassured may not be justified as features of the clinical encounter may aggravate hypochondriacal concerns. The observation that many hypochondriacal patients respond well to systematic reassurance and reattribution training points to the limitations of their earlier encounters with physicians (Kellner, 1992; Warwick, 1992).

It is a short segue from the notion that symptoms are medically unexplained or amplified by patients' anxieties, to the assumption that symptoms are caused by psychological factors. Given

the epistemological constraints of the clinical setting, however, this assumption often is difficult to support with concrete data. The difficulty of ascertaining psychological causation was openly acknowledged in the DSM-III-R criteria for Somatoform Pain Disorder where there was a retreat from the causal imputations of 'psychogenic pain' to the judgment that pain simply persists too long or is too intense. DSM-IV Pain Disorder reinstates a judgment of whether pain is entirely or partially due to medical or psychological factors as a diagnostic qualifier but this faces the same epistemological difficulties. Melzack and Wall (1982) have noted the low correlation between size of tissue injury and severity of pain. Indeed, such observations are basic to their theory of pain which emphasizes the ability of central cognitive evaluative processes to regulate somatic pain no matter what its origin. This problem is compounded by the fact that observers are not able to reliable discriminate individual differences in style of expression or coping with pain from actual pain experience (Poole & Craig, 1992). In practice, any distinction between 'psychogenic' and organic pain reflects patients' style of self-presentation, credibility and the larger functioning of the hospital ward or health care team as a system in which the patient is made to carry the brunt of diagnostic uncertainty and treatment failure.

In DSM-II, Conversion Disorder was classified as "hysterical neurosis, conversion type" and characterized by "involuntary psychogenic loss or disorder of function" involving the special senses or voluntary motor system. This definition was broadened in DSM-III to include any symptom that involved "a loss of, or alteration in," attributed to "an expression of a psychological conflict or need." It has proved to be difficult to operationalize and of limited use in discriminating conversion symptoms from symptoms which ultimately prove to have organic causation (Cloninger, 1987; Watson & Buranen, 1979b).

Neither 'medically explained,' 'exaggerated distress' nor psychogenic causation then are easy criteria to apply and these diagnostic judgments remain liable to clinician bias and other extraneous factors (Kirmayer, 1988). It may be more useful, therefore, to approach somatoform disorders in terms of psychosocial factors than shape the reporting of all distress—although

whether these will prove sufficient to explain the extreme variants that form the protoypical definitions of the DSM or not remains to be seen.

DSM-IV stipulates that to receive a diagnosis of somatoform disorder, symptoms must not be due to another psychiatric disorder. In many cases, however, symptoms of somatoform disorder are clearly secondary to another antecedent or underlying psychiatric disorder. Somatic symptoms commonly accompany mood and anxiety disorders. Pain, fatigue, and a wide range of other 'vegetative' symptoms are among the most frequent symptoms of major depression. Palpitations, feelings of faintness or dizziness, and other symptoms of autonomic hyperarousal are cardinal signs of panic disorder and other anxiety disorders. Hypochondriacal worry and disease conviction also are common in depression and anxiety disorders. It has been claimed that many somatizing patients have "masked" depressions in which the emotional and cognitive symptoms are muted, hidden or denied. More commonly, the emotional distress is quite evident but patients insist that it is secondary to their original somatic illness. A somatoform diagnosis serves to acknowledge the prominence of physical symptoms and patients' own somatic causal attributions.

All symptoms should be treated as having both physiological and psychosocial dimensions and should be investigated and treated at multiple levels. This integrative approach avoids the danger that, in labelling symptoms as 'psychogenic' clinicians will no longer search for or discount evidence of underlying organic disease that requires medical attention.

> **Case 5.** A 22 year Laotian man, who had immigrated to Canada four years
> earlier, was brought to the hospital emergency room by his brothers and mother.
> Several hours earlier while comfortably watching TV and experiencing no
> distress, he had the sudden onset of pain in his lower back, radiating forward
> through his buttocks. This was followed by a paralysis affecting all four limbs.
> His trunk was unaffected and he had no difficulty breathing. In the emergency
> room, he appeared to be in little distress, answering the doctor's questions in good
> humour and apparently only mildly worried about his dramatic symptoms. His

physical examination was inconsistent. He had some power in his extremities though deep tendon reflexes could not be elicited. He stated that these symptoms had occurred several times in the last year and always subsided after a few hours. He had stopped work several months earlier and was living with his parents because of fear of recurrent symptoms. A psychiatric consultation was requested to "rule out conversion disorder."

The psychiatric consultant was unable to elicit any history of emotional trauma or stress that might account for the acute onset of symptoms. He considered the impact of migration and the possibility of a poor social adjustment but felt this was too remote to account for increasing symptoms over the last year. He attempted hypnosis to assess the availability of dissociative mechanisms for symptom production but while the patient relaxed and appeared to enjoy the experience, his paralysis persisted.

On hearing the history of the symptoms, an astute neurologist made the diagnosis of familial periodic hypokalemic paralysis (Stedwell, Allen & Binder, 1992). The diagnosis was confirmed by the finding of a low serum potassium level, which returned to normal as the patient's paralysis spontaneously resolved over the next few hours.

The determination that symptoms are medically unexplained can involve extensive investigation to rule out occult or obscure diseases. Many chronic illnesses, like asthma or hypothyroidism, have systemic effects resulting in fatigue and other somatic symptoms. The manifestations and course of these diseases have a high degree of individual variability and often it remains uncertain whether patients' somatic symptoms are due to a pathophysiological process. Table 2 lists some of the many uncommon disease that give rise to symptoms that are readily mistaken for conversionsymptoms.. In some cases, laboratory tests or diagnostic maneuvers can elicit physical signs that distinguish between conversion and organic disease.

Psychological factors contributing to somatic distress should be assessed whatever the evidence for or against organic disease. From the illness behavior perspective, the same cognitive and social factors that affect functional illness also influence the symptoms and course of organic illness. The principal difference is the social response to illness based on whether it is viewed as medically validated or remains ambiguous. This underscores the fact that the making of a diagnosis is itself an intervention. Diagnostic terms carry personal and social meanings that have immediate implications for patient's wellness, self-esteem, interpretation of subsequent sensations and potential stigmatization. Diagnostic labels may also function as metaphors that influence subsequent illness experience, coping and self-image (Kirmayer, 1994).

Psychological and Biological Assessment

Assessment of patients with somatoform disorders occurs in the context of outpatient or hospital management, disability or compensation evaluation, and research. Depending on context, the goals of assessment include: (1) rule out co-existing medical disorders; (2) make a psychiatric diagnosis that can guide clinical treatment planning and intervention; (3) determine the level and types of symptoms, illness impact and disability; (4) predict outcome or prognosis; and (5) assess mediating processes relevant to research or clinical intervention. The diagnosis of a somatoform disorder does not indicate the specific symptoms, their meaning and impact for the patient or their interaction with other psychological, medical and social problems. Assessment must go well beyond the mere establishment of a diagnosis to include a clinically rich and useful picture of the person's pathology, resources and lifeworld.

Establishing a collaborative relationship with somatizing patients can pose special challenges (Bass & Benjamin, 1993; McDaniel, Campbell & Seaburn, 1989). Patients who fear their own emotional vulnerability or who have experienced rejection and stigmatization by doctors, employers and others may vigorously resist any implication that their problems are psychological in nature (Looper & Kirmayer, 2004). This may reflect both psychological defensiveness and an effort to avoid further stigmatization and negation of the seriousness of their symptoms. The

clinician can offer him or herself as a consultant who is expert in assessing the psychosocial factors that can aggravate any physical illness and in teaching strategies to improve coping with illness. The clinician cannot arbitrate the ontological distinction between 'real' organic disease and 'imaginary' psychological disorder but must focus instead on factors that maintain symptoms and that are relevant to treatment. It is important to start from the assumption that all pain and other somatic symptoms are "real" regardless of the relative contribution of physiological and psychological, or peripheral and central, processes. Even pain from identifiable physical lesions is always the outcome of psychological processes (Merskey, 1991). What is at stake in the psychological assessment and 'diagnosis' of somatic symptoms, is the identification, for each individual in a specific life context, of factors that exacerbate and/or maintain symptoms and that may be modified to reduce suffering and disability.

Situating the evaluation process in a medical setting may help avoid some of the implicit message that the patients' problems are essentially psychological. In general, somatizing patients are not adverse to considering a psychosocial dimension to their problem but rightly reject the implication that their problems are entirely psychological or 'all in their head'. Frequently, as patients see that the clinician is interested in the details of their somatic symptoms, they will volunteer information about emotional distress, social problems and psychological issues. Sometimes this opening does not occur until the clinician has succeeded in helping the patient to reduce symptoms. Wickramsekera (1989) argues for a more frontal approach in which the links between emotional distress and conflict and somatic symptoms are directly demonstrated to patients with biofeedback monitoring during a stress-inducing interview in the clinician's office.

Assessment usually begins with the collection of detailed information on the presenting symptoms, their intensity, quality, temporal characteristics and impact on the patient's life. Using the symptoms as a focus, it is possible to collect detailed information about other aspects of psychological and social functioning, which are introduced in terms of their possible impact on somatic distress, or as areas of functioning where somatic illness may be having disruptive effects. It is often useful to obtain a symptom diary in which the patient records each occurrence

of major symptoms, their characteristics, the situations or context in which they occur, the associated cognitive, emotional and behavioral responses as well as the responses of others. This diary involves a form of self-monitoring which may have immediate therapeutic effects and sets the stage for subsequent cognitive and family interventions.

Although for most clinical purposes simple visual analog scales suffice (McDowell, 2006, pp. 477-483), there are a number of self-report or interview-based measures for assessing the intensity and quality of specific somatic symptoms including pain (Melzack, 1975), nausea (Melzack, Rosberger, Hollingsworth & Thirlwell, 1985), and fatigue (Smets, Garssen, Bonke & De Haes, 1995). These provide sensitive indicators of level of distress as well as various qualitative dimensions and can be used to monitor treatment progress.

Interactional Processes in the Clinical Setting

Most clinical management of somatoform disorders takes place in primary medical care settings. Surveys of primary care physicians indicate that somatoform disorders comprise a significant part of their clinical practice but that they are not well trained to manage these patients (Reid, Whooley, Crayford, Hotopf, 2001; Wileman, May & Chew-Graham, 2002). Recent qualitative studies have examined interactional processes of the patient-physician encounter. These suggest that the mind-body dualism intrinsic to the theory and practice of Western medicine is present in the dialogue of clinical consultations, and that expectations of incompatible attitudes on the behalf of both patient and physician are unnecessarily perpetuated. Physicians tend to view somatizing patients as having inappropriate symptoms that are a manifestations of emotional or social distress, anticipate that they will not be open to psychosocial explanations, and presume that they will insist on medical investigation. In contrast, a study of audiotaped interactions found that virtually all patients with somatoform symptoms provided opportunities to explore the psychological aspects of their symptoms but that primary care physicians did not respond to these cues (Salmon, Dowrick, Ring & Humphris, 2004; 2005). Only a minority of somatizing patients in another study requested somatic

interventions such as medication prescriptions and physical investigations (Ring, Dowrick, Humphris & Salmon, 2004). An important goal of assessment and ongoing management is to construct a meaningful narrative regarding the otherwise "unexplained" symptoms. Many medically unexplained symptoms are, in fact, culturally explained but patients may be reluctant to discuss their social predicaments with clincians they perceive as uninterested or ill-equipped to be of help (Kirmayer. Groleau. Looper & Dao, 2004). Establishing the validity of their physical suffering is an essential starting point for patients with somatoform problems. The challenge for physicians is to acknowledge and validate the experience of patients with unexplained symptoms, and to develop a satisfactory explanatory model of physical distress.

Psychiatric Diagnosis

A number of screening interviews and self-report measures for SD have been devised based on the assumption that common 'nonspecific' somatic symptoms are more likely to be an indication of underlying psychiatric disorder than of organic medical illness, particularly when symptoms involve many different functional physiological systems (Kroenke & Spitzer, 2002). DSM-IV, introduced a simplified set of criteria for SD that were validated in a field trial (Yutsy et al., 1995). Clinical screening based on these criteria first ascertains whether patients have a lifetime history of at least four separate pain complaints, if not the diagnosis of SD can be excluded. Otherwise, the clinician proceeds to inquire about gastrointestinal, sexual or reproductive symptoms and conversion symptoms. If at least one of each is identified, the patient meets DSM-IV criteria for SD.

A variety of structured diagnostic interviews have been devised to assess psychiatric diagnoses in community and clinical populations by standardized criteria. The Diagnostic Interview Schedule (DIS) has been the most widely used instrument of this type (Robins, Helzer

& Orvaschel, 1985). Despite this wide use, the DIS has been criticized by many authors (Bass & Murphy, 1990). Robins and colleagues (1982) found low concordance between psychiatrist and lay interviewers for the diagnosis of somatization disorder using the DIS, and a sensitivity of only 41%. The DIS asks about lifetime occurrence of symptoms and patient's memory may be poor for details of remote illnesses. As well, some patients suffering with somatoform disorders may conceal information in the fear that the physicians will not take their current symptoms seriously. Nonphysician interviewers may have difficulty recognizing SD because they are less able to reject implausible medical explanations offered by patients.

The Composite International Diagnostic Interview (CIDI) is a standardized diagnostic instrument based on the DIS that assesses mental disorders according to both DSM-III-R and ICD-10 criteria (Robins et al., 1989). The CIDI assesses more somatoform disorders than the DIS including somatization disorder, conversion disorder, somatoform pain disorder and hypochondriasis. It is available in 16 languages and incorporates some efforts to make distinctions relevant to cross-cultural diagnosis. The CIDI has been used a cross-national study of somatoform disorders (Janca, Isaac, Bennett & Tacchini, 1995).

Barsky and colleagues (1992) developed the Structured Diagnostic Interview for Hypochondriasis (SDIH), a clinician administered diagnostic interview for hypochondriasis modeled on the Structured Clinical Interview for DSM-III-R (Spitzer, Williams, Gibbon & First, 1990). In a sample of general medical clinic patients, the SDIH had an interrater agreement on the diagnosis of 96% and there was high concordance between the interview and the Whiteley Index of hypochondriasis (Pilowsky, 1967) and physician's ratings of patients as hypochondriacal. Similar findings were reported by Noyes and colleagues (1993). A 7-item

version of the Whiteley Index has also shown promise as a screening tool for both Hypochondriasis andother somatoform disorders in primary care (Fink et al., 1999).

Pope and Hudson (1991) developed a structured interview modeled on the SCID to diagnose several common functional somatic syndromes which the authors hypothesized were variant forms of 'affective spectrum disorder'. Although these authors have not published psychometric characteristics of their interview, they have used it to examine the overlap between functional syndromes and their relationship to major depression (Hudson, Goldenberg, Pope, Keck & Schlesinger, 1992). Robbins and colleagues (Kirmayer, Robbins, Taillefer & Helzer, 1995) developed the Diagnostic Interview for Functional Syndromes (DIFS), modeled on the DIS for use by trained lay interviewers to estimate the prevalence of the three most common functional syndromes by currently accepted criteria: fibromyalgia (FMS), irritable bowel (IBS) and chronic fatigue (CFS) syndromes. However, there was substantial discrepancy between clinician and interview-based diagnoses. This may reflect inconsistencies in clinicians' diagnostic practices and the waxing and waning of symptoms in functional syndromes, as well as inherent limitations of the instrument.

Several instruments have been developed for the assessment of patients with BDD. Jorgensen et al. (2001), Phillips and colleagues (1995) developed the Body Dysmorphic Disroder questionnaire for use in psychiatric settings. Dufresne et al., (2001) developed a brief self-report questionnaire for use in settings like dermatology clinics. The Dysmorphic Concern Questionnaire (DCQ; Jorgensen et al., 2001) identifies body-related symptoms in patients who present with depression, OCD, social phobia or BDD, based on the Body Dysmorphic Disorder Questionnaire (Phillips et al., 1995) to screen for body dysmorphic disorder in dermatology settings. The Overvalued Ideas Scale (OVIS) is an 11-item clinician administered scale that

measures the severity of overvalued ideation (Neziroglu et al., 1999), which may be predictive of treatment outcome in OCD and BDD patients.

The Irritable Bowel Syndrome Misconception Scale (IBS-MS; Dancey et al., 1999) is a 17-item questionnaire that measures misconceptions held by people with IBS. It can be used to evaluate the changes in illness-related knowledge gained during intervention programs.

Associated Factors: Personality, Amplification & Coping

Determination of the intensity, duration and quality of specific symptoms allows diagnosis of somatoform disorders and other possibly comorbid conditions by standardized criteria. However, DSM-IV diagnosis is only one aspect of the clinical evaluation. In addition to diagnosis, the clinical assessment of patients with somatization disorders requires attention to illness cognitions and coping skills, somatic amplification, attributional biases, related personality traits, as well as the family system, work, and larger social contexts of suffering. These domains can be explored with clinical interviews that start from the nature of somatic symptoms and inquire about the patients' cognitive response as well as their impact on others.

Psychological testing using standard instruments must be adapted to the experience of patients with predominately somatic symptomatology. Test results may be subject to "physiogenic invalidity"—misinterpreting symptoms that arise from the disturbed physiology of disease as evidence of psychopathology.

Neuropsychological testing has limited utility but should be considered where there is a history or signs suggestive of dementia or other organic mental disorder. On formal cognitive testing, chronic fatigue syndrome patients have mild cognitive impairments that usually are correlated with depressive symptomatology and cannot account for the magnitude of their subjective complaints (Cope, Pernet, Kendall & David, 1995; DeLuca, Johnson, Beldowicz &

Natelson, 1995; Krupp, Sliwinski, Masur, Friedberg & Coyle, 1994; McDonald, Cope & David, 1993).

The Minnesota Multiphasic Personality Inventory (MMPI) in both its original and second generation versions (MMPI-2) generates several scales relevant to the assessment of somatizing patients (Hathaway & McKinley, 1989). The Hypochondriasis scale consists of 32 items all of which deal with somatic preoccupation or general physical functioning. The standard interpretation of the MMPI suggests that patients with high scores on Hypochondriasis have excessive bodily concern, may have conversion disorder or somatic delusions, are likely to be diagnosed as having somatoform, somatoform pain, depressive, or anxiety disorders, are not good candidates for psychotherapy, and tend to be critical of therapists and may terminate therapy prematurely when therapists suggest psychological reasons for symptoms. The MMPI does not provide an adequate assessment of hypochondriacal beliefs for which more specialized instruments are needed.

The 60-item MMPI Hysteria scale identifies individuals who tend to react to stress by demonstrating physical symptoms such as headaches, stomach discomfort, chest pains, weakness and somatic symptoms that do not fit the pattern of any known organic disorder. The typical high scorer is said to be someone who avoids responsibility through the development of physical symptoms, is self-centered, narcissistic and egocentric, psychologically immature, and resistant to psychological interpretations. The Hysteria scale has been divided into two subscales: items that primarily address denial of psychological problems (D_H) and items relating to admission of physical problems (A_D; (McGrath & O'Malley, 1986)).

In addition to individual scale scores, the MMPI yields profiles based on multiple scales. A high score on both Hypochondriasis and Hysteria scales may indicate the presence of a somatoform disorder, particularly if the score on the Depression scale is low (the so-called 'conversion V' pattern). With few exceptions, however, more recent studies with the MMPI have shown that it is not able to reliably distinguish patients with symptoms due to organic disease and those with medically unexplained symptoms (Blakely et al., 1991; Kim, Hsu, Williams,

Weaver & Zinsmeister, 1996; Pincus, Callahan, Bradley, Vaughn & Wolfe, 1986). MMPI profile patterns also have not been shown to consistently predict treatment outcome among chronic pain patients (Chapman & Pemberton, 1994). Patients' specific beliefs regarding pain are better predictors of satisfaction and response to treatment (Deyo & Diehl, 1988).This points to the need for more specific inventories that assess cognitions involved in coping with somatic distress (DeGood & Shutty, 1992).

The Whiteley Index (WI) is a self-report measure of hypochondriacal beliefs (Pilowsky, 1967). It contains 14 items tapping three factors: (1) *Bodily Preoccupation* (e.g.: "Are you bothered by many pains and aches?"); (2) *Disease Phobia* (e.g.: "If a disease is brought to your attention (through radio, television, newspapers or someone you know) do you worry about getting it yourself?"); and (3) *Conviction of the Presence of Disease with Non-Response to Reassurance* (e.g.: "If you feel ill and someone tells you that you are looking better, do you become annoyed?"). It has good test-retest reliability and internal consistency. The WI has been widely used in studies of hypochondriasis and provides a useful screening measure (Pilowsky, 1990). Although it might be thought to measure 'illness worry' rather than hypochondriasis, in fact, it has a low correlation with estimates of the severity of disease and seems to reflect patient characteristics more than disease burden (Robbins & Kirmayer, 1996).

Subsequently, Pilowsky and colleagues (1984; Pilowsky, Murrell & Gordon, 1979; Pilowsky & Spence, 1983) developed the Illness Behavior Questionnaire (IBQ) to study the association to assess forms of 'abnormal illness behavior' (Pilowsky, 1978). The IBQ is a 62 item self-report instrument measuring patients' attitudes, ideas, affects and attributions in relation to illness. It generates scores on seven factors of illness behavior, including: general hypochondriasis, disease conviction and denial. While there is a lack of information regarding the IBQ's internal and test-retest reliability (Bradley, Prokop, Gentry, Van der Heide & Prieto, 1981), an interview form of the questionnaire has been shown to have adequate interrater reliability, with a mean percentage of agreement of 88% (Pilowsky & Spence, 1983).

Several studies have shown that patients with diverse chronic pain syndromes or pain symptoms without organic cause have elevated scores on relevant IBQ scales (Bradley, McDonald Haule & Jaworski, 1992). However, a study of outpatients, visiting a gastroenterology clinic, whose primary complaint was upper abdominal pain found that among the patients with no organic cause for their pain, only patients with a psychiatric diagnosis had indications of abnormal illness behavior on the IBQ (Colgan, Creed & Klass, 1988). Other studies have found little difference between patients with chronic fatigue syndrome and multiple sclerosis (Trigwell, Hatcher, Johnson, Stanley & House, 1995). Despite its questionable use to discriminate somatoform disorders from other medical conditions, the IBQ remains a useful clincial and research tool to systematically assess a range of important illness cognitions.

The IBQ measures beliefs and attitudes rather actual behaviors. One of the few attempts to develop an instrument that taps illness behavior is the Illness Behavior Inventory (IBI), developed by Turkat and Pettegrew (1983). The IBI is a 20-item self-report questionnaire assessing two dimensions of illness-related behaviors: *Work-related Illness Behavior* (9 items pertaining to work and activity when feeling ill; e.g. "I work fewer hours when I'm ill.") and *Social Illness Behavior* (11 items concerning illness behaviors in social situations; e.g. "Most people who know me are aware that I take medication."). It has good internal consistency and concurrent validity with the McGill Pain Questionnaire (Melzack, 1975), but has been little used in subsequent research.

The Illness Attitude Scale (IAS) is a 21-item self-report questionnaire measuring seven components of hypochondriasis including: generic worry about illness, concern about pain, health beliefs and bodily preoccupation (Kellner, Abbott, Winslow & Pathak, 1987). The IAS reflects the authors' hypothesis that the most distinctive characteristic of hypochondriasis is not the fact that patients worry about health but that their fears are not eliminated by a satisfactory medical examination and they are resistant to medical reassurance (Fava & Grandi, 1991). The IAS differentiates between patients with DSM-III hypochondriasis and various other clinical groups (Hitchcock & Mathews, 1992).

The Multidimensional Inventory of Hypochondriacal Traits is a recent self-report instrument designed to capture cognitive, behavioral, perceptual and affective dimensions of the clinical syndrome (Longley, Watson, & Noyes, 2005). Interestingly, all of the dimensions have strong interpersonal components based on the individual's perception and experience of others.

Instruments also have been devised for the assessment of body image. For example, the Body Dysmorphic Disorder Examination assesses self-consciousness, preoccupation with appearance, overvalued ideas about theimportance of appearance to self-worth, and body image avoidance and checking behaviors (Rosen, Reiter & Orosan, 1995a). The Yale-Brown Obsessive Compulsive Scale has also been modified for the diagnostic assessment of the severity of symptoms of body dysmorphic disorder (Phillips, Hollander, Rasmussen, et al., 1997).

The assessment of symptom and illness meanings and attributions follows standard cognitive therapy strategies developed for work with anxiety and depressive disorders (Salkovskis, 1989; Sharpe, Peveler & Mayou, 1992; Warwick, 1995). Assessment involves eliciting automatic thoughts and images, exploring cognitive and behavioral coping strategies and testing alternative thoughts and behaviors. This type of assessment is typically woven into ongoing treatment.

The Social Context of Illness

Assessment of the social context of illness should be a routine part of the assessment of all individual psychopathology. In addition to recent life events, chronic stressors and social supports, couple and family interviews may reveal crucial interactions that are aggravating or maintaining symptoms—or uncover important resources to aid the clinician in devising treatment strategies (Griffith & Griffith, 1994; McDaniel et al., 1989; Rolland, 1987). The perceptions and responses of family members to patients with chronic pain and somatic syndromes may be crucial for understanding their persistence and identifying strategies for intervention (Sharp & Nicholas, 2000; Cordingley, Wearden, Appleby, & Fisher, 2001). DSM-IV provides an outline for a cultural formulation in Appendix I that should be part of the assessment of all patients with Somatoform Disorders. This draws attention to the impact of cultural dimensions of the

individual's identity, illness explanations, social supports and stressors, as well as the relationship with the clinician. When there is significant cultural distance between patient and clinician, other family and community members, culture brokers and anthropologists can be consulted to explore the local meanings of the symptoms and appropriate treatment approaches (Kirmayer et al., 2003).

Gender and Cultural Issues

As discussed earlier in this chapter, somatization disorder is about nine times more common among women than men in the general population of North America and women are more likely to report the range of somatic symptoms (Kroenke & Spitzer, 1998). Similarly, the most common forms of undifferentiated somatoform disorder (e.g., the functional somatic syndromes of fibromyalgia, irritable bowel and chronic fatigue) are diagnosed from two to nine times more frequently among women than men (Toner, 1995). In contrast, hypochondriasis is equally represented across the genders and somatized presentations of depression and anxiety may actually be proportionately more common among men (Kirmayer & Robbins, 1991b).

Potential explanations for these gender differences in prevalence include (Toner, 1995; Wool & Barsky, 1994): (1) a higher prevalence of related psychiatric disorders among women (i.e., mood and anxiety disorders) which secondarily give rise to somatoform disorders; (2) differences in illness behavior and help-seeking; (3) differential exposure to sexual and physical abuse; (4) social stresses and psychological conflicts associated with gender roles; (5) hormonal or other physiological differences; (6) gender bias in the diagnostic process.

(1) The prevalence of major depression (Nolen-Hoeksma, 1995) and several anxiety disorders (Yonkers & Gurguis, 1995) is higher among women than men. As noted above, patients with somatoform disorders often have underlying mood or anxiety disorders which may account, in

part, for their symptoms. A higher prevalence of these disorders among women could give rise to part of the gender difference in prevalence of somatoform disorders. However, many patients with somatoform disorders do not have identifiable mood or anxiety disorders. Further, the gender difference in somatoform disorders is much greater than that for mood or anxiety, suggesting that other factors must be involved.

(2) Women may have a greater tendency to focus on their bodies and hence, notice and report more symptoms (Pennebaker & Watson, 1991). In addition, women may be more likely to seek help because they are more willing than men to admit distress and acknowledge the need for assistance (Verbrugge, 1985). In some circumstances, women may be more able to seek help because they are less constrained than men by full-time employment. More commonly, however, women face considerable barriers to help-seeking due to heavy work and family responsibilities. Indeed, Ginsburg and Brown (1982) found that many women with post-partum depression presented their babies to the pediatrician for minor somatic complaints in a sort of "somatization-by-proxy" both because they could not justify taking time for themselves to seek help and because others around them normalized their seriously depressed mood as ordinary 'baby-blues'.

(3) A number of recent studies have demonstrated high prevalences of sexual or physical abuse among women with somatoform disorders including irritable bowel and other functional gastrointestinal disorders as well as chronic pelvic pain (Walker et al., 1988; Walker, Gelfand, Gelfand & Katon, 1995). Women are generally more likely than men to experience sexual and physical abuse, and although somatization is only one possible outcome (Walker et al., 1992), this could account for some of the differential prevalence. Childhood and domestic violence are common contributors to a wide range of somatic and psychological forms of distress.

(4) Gender roles may subject women to increased social stressors causing elevated levels of both emotional and somatic distress (Verbrugge, 1985). Women may face narrow standards and rigid expectations for physical attractiveness and reproductive fitness that make them preoccupied with their bodies and prone to somatoform disorders (Cash & Pruzinsky, 1990).

(5) Physiological differences between men and women may result in differential rates and patterns of functional somatic symptoms. Female sex hormones have effects on smooth muscle throughout the gut and other organ systems and may contribute directly to a higher prevalence of irritable bowel syndrome among women (Talley, 1991). The menstrual cycle itself may be associated with a wide range of somatic symptoms and with the intensification of pre-existing functional somatic symptoms to a level that prompts help-seeking and clinical attention, although perception of menstrual symptoms is itself influenced by other psychological factors (Whitehead et al., 1986).

(6) Finally, there may be gender bias in the diagnostic process itself, whereby clinicians are more likely to attribute symptoms to psychosocial causes for women than for men (Kirmayer, 1988). Such a gender bias has been found for the diagnosis of histrionic personality (Chodoff, 1982; Fernbach, Winstead & Derlega, 1989; Warner, 1978; Winstead, 1984), although the diagnostic criteria themselves are not obviously gender biased, at least when applied by a standardized diagnostic interview (Nestadt et al., 1990). To the extent that women are more forthcoming about psychosocial problems and emotions in the clinician-patient interaction, clinicians may be more likely to view women as emotionally distressed and/or histrionic. Women may be more likely, then to have their medically unexplained or functional symptoms explicitly labelled as a somatoform disorder (Slavney, Teitelbaum & Chase, 1985).

Although somatoform disorders are common worldwide, they show great variation in form and prevalence across geographical regions and ethnocultural groups (Kirmayer, 1984; Hsu, & Folstein, 1997). Indeed, the gender ratio itself differs markedly across cultures giving some evidence of the importance of sociocultural factors in shaping illness experience. A review of cultural aspects of the somatoform disorders for DSM-IV suggested three major issues for existing nosology: (1) the overlap between somatoform, affective and anxiety disorders; (2) cultural variations in symptomatology; (3) the use of somatic symptoms as idioms of distress.

Most basically, cross-cultural work challenges the separation of affective, anxiety, dissociative and somatic categories in the DSM. The requirement that patients with somatoform disorders not have another disorder that explains their symptoms seems overly restrictive since somatic symptoms may be such a prominent part of depressive and anxiety disorders. Further, syndromes resembling depression or anxiety but without prominent mood symptoms are common. Neurasthenia may represent an example of this overlap that is not well captured by existing nosology (Ware & Weiss, 1994).

A wealth of clinical observations and anthropological fieldwork demonstrates that there are many culture-specific symptoms. For example, feelings of heat in the head or body are common in equatorial regions as are peppery feelings and the sensations of 'worms crawling in the head'. In South Asia, men may complain of losing semen in the urine. There have been several attempts to develop expanded symptom inventories with items tapping culture-specific somatic symptoms but these have not been widely used (Ebigbo, 1982; Mumford et al., 1991). Some of the symptoms that appear culture-specific may, in fact, occur in other places but lack salience in terms of local illness categories and so are rarely noticed or reported.

The preferential use of a bodily idiom to express suffering has been linked to cognitive factors in symptom expression, as well as to social, familial and cultural responses to distress (Angel & Thoits, 1987; Kirmayer, 1984; Kleinman, 1986). In Appendix I, DSM-IV-TR lists a variety of cultural idioms of distress with prominent somatic symptoms, including: *ataques de nervios*, *bilis* or *colera*, *brain fag*, *dhat*, *falling out* or *blacking out*, *hwa-byung*, *koro*, *nervios*, *shenjing shuairuo*, and *shenkui*. Many of these terms refer to illness causes or explanations rather than to discrete syndromes. They direct attention to the links between social circumstances and somatic distress. They are tied to ethnophysiological notions about how the body works and to local ways of talking about everyday problems. Worldwide, sociosomatics is a more common mode of illness explanation than psychosomatics—that is, people see the connections between difficult social situations and consequent illness, and put more emphasis on this link than on an individual's psychological characteristics (Groleau & Kirmayer, 2004). Within a somatic cultural idiom of distress, bodily symptoms may serve to communicate one's plight to others (Kirmayer & Young, 1998; Kirmayer, Dao & Smith,).

Anthropological research suggests several potential ways in which symptoms may have meaning (Table 4). Symptoms may be direct indices of underlying disease or physiological disturbance, occuring as one manifestation of abnormalities in structure or process. To the extent that this meaning is available to the patient, it may play a role in exacerbating illness worry and somatic distress.

Symptoms may also be indices of underlying psychopathology, as when for example conversion symptoms are taken to indicate dissociative pathology. The classical psychoanalytic interpretation of somatic symptoms understood them as symbolic expressions of underlying (unconscious) conflicts which they either represented through analogy or displaced. More recent

clinical experience suggests that symptoms more often are related to available illness models in the individual's local world (Slavney, 1990). Prototypes in individuals' own experience, that of their family or friends, or those transmitted through mass media provide templates for symptom experience.

Somatic symptoms may also have meaning as metaphors for other domains of experience. These may be idiosyncratic to the individual or drawn from common cultural idioms. These communicative meanings of symptoms may be conscious and explicit or hidden and implicit to patients and their entourage. The meaning of symptoms as communication can change over time and even in the span of a single interview as trust is established and the patient is led to reflect on the his or her experience (Groleau & Kirmayer, 2004).

Finally, symptoms may function as moves in a local system of power, serving to position the individual and providing more or less explicit social commentary, criticism or protest. For example, in many families, a woman who suffers persistent physical complaints may be able to command more resources for help and gain more control over her time and activities than one who tries to criticize her spouse directly.

These meanings are not intrinsic to the somatic symptoms but arise from how they are used by patients, their families, and others. In fact, the epistemological limitations of the clinical situation are such that the meaning of symptoms remains largely indeterminate (Kirmayer, 1994). The interpretation of a symptom as having symbolic meaning or as a rhetorical strategy on the part of a patient should always be made because it will be helpful to the patient rather than simply because it gives the clinician a satisfying feeling of closure or the license to blame the patient for the limitations of current therapeutics.

Summary and Conclusion

The DSM-IV category of somatoform disorder implies that persistent complaints of somatic distress in the absence of a medical explanation represents a distinctive form of psychopathology. Somatic symptoms, however, can arise from a wide range of physiological perturbations, as well as being a normal concomitant of emotional distress. Milder forms of somatoform disorders then do not represent a distinctive type of psychopathology. More severe forms (e.g. Somatization Disorder) may reflect the generalized effects of intense emotional distress, as well as other psychological and social factors that contribute to chronicity and disability.

While the DSM-IV somatoform disorder diagnoses have some utility for research purposes they may be misleading in clinical contexts: they reify patterns of illness behavior that cut across other psychiatric disorders as discrete conditions; they situate interactional problems inside the person and so promote biological and psychological reductionism; they ignore the social context of suffering and so point away from exactly those social contingencies that explain the onset of symptoms and that hold clues to their alleviation.

An approach in terms of dimensions of illness cognition and behavior may be more fruitful in terms of assessing the psychological factors that may contribute to somatic distress and help-seeking. In this view, there are three basic forms of somatization: (1) functional somatic symptoms which arise from a wide range of different physiological and psychological mechanisms including autonomic dysregulation, hyperventilation, cognitive-attentional amplification and dissociation (this category includes undifferentiated somatoform disorder and conversion disorder); (2) hypochondriacal illness worry which has similar roots to other anxiety disorders including panic and generalized anxiety disorder with pathologizing attributions and catastrophizing cognitions that specifically invoke the threat of disease or deformity (dysmorphophobia also fits this model); (3) somatic presentations of depression, anxiety and other psychiatric disorders or psychosocial distress which reflect patients efforts to avoid the stigma of psychiatric illness and present the doctor with an appropriate somatic complaint.

A broader social focus on family, work, disability and health care systems may provide explanations for persistent distress and functional impairment that appear inexplicable at purely physiological or even psychological levels. From this perspective, symptoms have potential meanings that may be taken up by patients, their families and others in ways that either reinforce illness or serve to further invalidate the afflicted person. To the extent that patients must struggle to prove the reality of their suffering to skeptical physicians and incredulous family and friends, they may be forced into a rigid position that exacerbates their illness. For this reason, we have emphasized the importance of understanding the physical and social roots of somatic distress as an entree into the lifeworld of the patient.

Table 1.

Symptoms and Syndromes of Uncertain Etiology in Medical Specialties

Ear, Nose and Throat
    burning tongue or mouth   (Van Houdenhove & Joostens, 1995)
    intractable sneezing   (Fochtmann, 1995)
    stridor   (Lacy & McManis, 1994)
    tinnitus   (Sullivan et al., 1988)
Cardiology
    chest pain with normal angiogram   (Eifert, 1991)
Endocrinology
    pseudocyesis   (Starkman et al., 1985)
Gastroenterology
    dysphagia (difficulty swallowing)   (Kim et al., 1996)
    irritable bowel   (Thompson & Pigeon-Reesor, 1990)
    nonulcer dyspepsia   (Wilhelmsen, Haug, Ursin & Berstad, 1995)
Gynecology
    chronic pelvic pain   (Walker et al., 1988)
    dysmenorrhea   (Whitehead et al., 1986)
    dyspareunia   (Meana & Binik, 1994)
    hyperemesis gravidarum   (Katon, Ries, Bokan & Kleinman, 1980)
    premenstrual tension   (Kuczmierczyk, Labrum & Johnson, 1995)
    vaginismus
    vulvidynia   (McKay & Farrington, 1995)
Infectious Disease and Immunology
    chronic fatigue   (Abbey & Garfinkel, 1991)
    environmental sensitivity   (Göthe, Molin & Nilsson, 1995)
    multiple or 'total' allergy   (Simon, Katon & Sparks, 1990)
Neurology
    conversion   (Toone, 1990)
      pseudoseizures   (Savard, 1990)
      paralysis   (Fishbain & Goldberg, 1991)
      paresthesias
      sensory loss   (Rada, Meyer & Kellner, 1978)
    dizziness   (O'Connor, Hallam, Beyts & Hinclife, 1988)
    headache   (Blanchard, 1992)
    post-concussion syndrome   (Lishman, 1988)
    syncope   (Kapoor, Fortunato, Hanusa & Schulberg, 1995)
Pulmonology
    dyspnea (shortness of breath)   (Bass, 1992)
Rheumatology
    fibromyalgia   (Bennett, 1981)
    myofascial pain syndromes   (Merskey, 1993)
    repetitive strain injury   (Sinclair, 1988)
Urology
    interstitial cystitis   (Ratliff, Klutke & McDougall, 1994)

Table 2.

Diseases That May Be Mistaken For Conversion Symptoms

basilar artery migraine

brain tumors

Creutzfeldt-Jakob disease

diabetic neuropathy

drug-induced dystonic reactions

endocrine disorders (e.g. Addison's disease)

hypokalemic periodic paralysis

multiple sclerosis

myasthenia gravis

temporal lobe epilepsy

torsion dystonia

toxic neuropathy

porphyria

sensory seizures

spinal cord tumors

Parkinson's disease

Wilson disease

See: (Jefferson & Marshall, 1981)

Table 3.

An Outline for the Assessment of Somatizing Patients

Medical Comorbidity
Psychiatric Comorbidity
Symptom Characteristics
    Type
        location
        intensity
        sensory qualities
    Temporal pattern
        frequency
        duration
        contours of onset and resolution
Amplifying Factors
    Attention
        Body-focus
        Self-focus (introspectiveness)
        Hypnotizability
    Cognition
        Symptom attributions
        Perception of vulnerability and risk
        Catastrophizing thoughts
Coping Strategies
Symptom Context
    Recent life events
    Chronic stressors
    Marital and family adjustment
    Economic situation
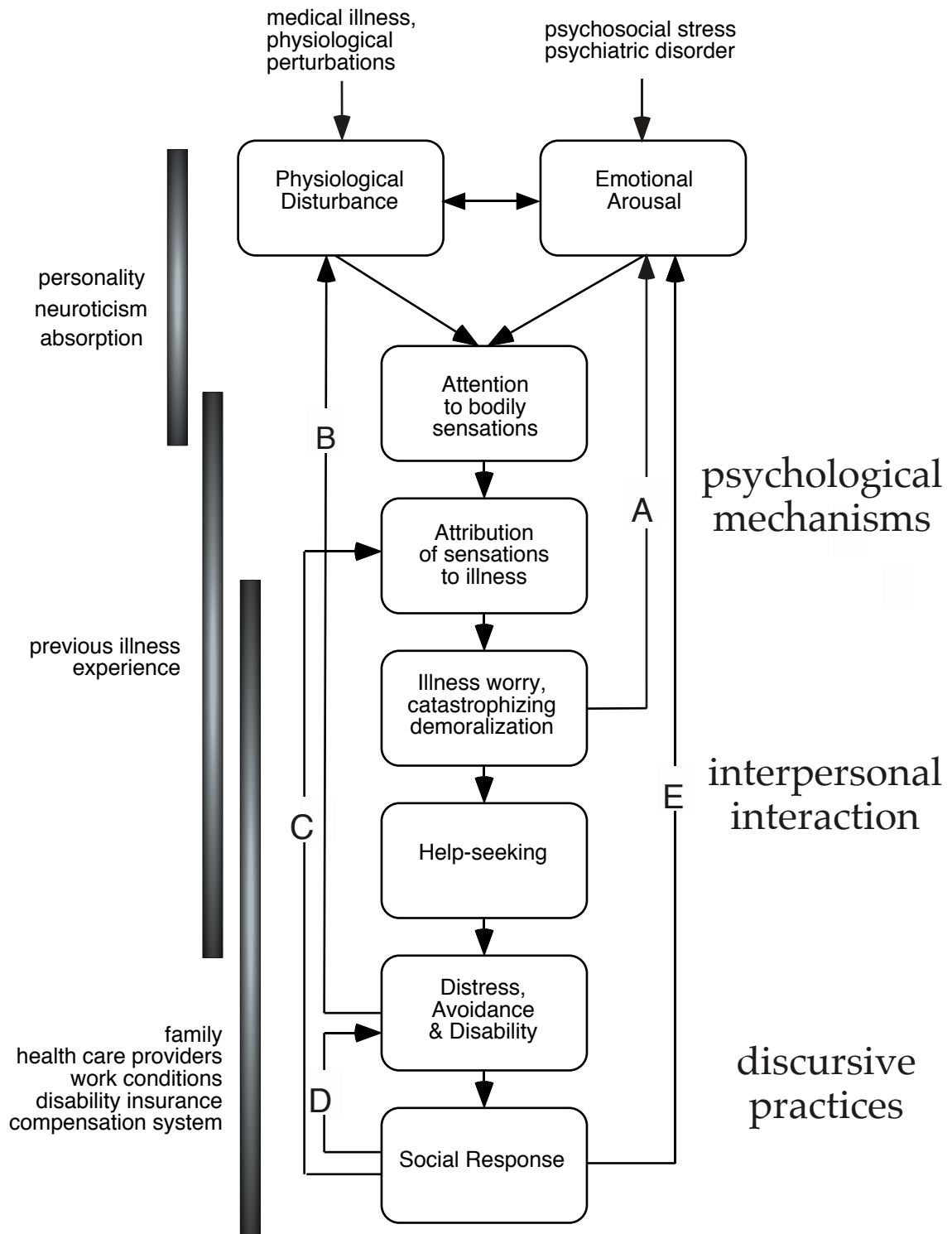   Work satisfaction
    Social supports

Table 4.

Levels of Potential Meaning of Somatic Symptoms

1. Index of disease or physiological disorder

2. Index of psychopathology

3. Symbolic representation of psychological conflict

4. Representation of illness model

5. Metaphor for experience

6. Cultural idiom of distress

7. Act of positioning in a local world

8. Form of social commentary or protest

Figure 1. Caption

Figure 1. An Integrative Model of Somatization

Physiological, psychological, interpersonal and sociocultural processes all contribute to vicious cycles of symptom amplification that can result in disabling medically unexplained somatic symptoms. Only a few of these potential cycles are depicted: (A) illness worry and catastrophizing thoughts result in increased emotional arousal and anxiety which in turn give rise to somatic symptoms associated with autonomic arousal and hyperventilation; (B) avoidance of activity and sick role behavior lead to physical deconditioning, sleep disturbance and other forms of physiological dysregulation; (C & D) cultural interpretations of symptoms and sick role behavior reinforce pathologizing attributions for new sensations as well as distress and disablement; (E) sick role behavior may lead to interpersonal conflict which, in turn, increases emotional arousal, leading to more somatic symptoms. Each of these processes may be targeted by specific clinical interventions aimed at interrupting the vicious cycles.

medical illness,
physiological
perturbations

psychosocial stress
psychiatric disorder

Physiological
Disturbance

Emotional
Arousal

personality
neuroticism
absorption

Attention
to bodily
sensations

B

psychological
mechanisms

A

Attribution
of sensations
to illness

previous illness
experience

Illness worry,
catastrophizing
demoralization

interpersonal
interaction

Help-seeking

C

E

family
health care providers
work conditions
disability insurance
compensation system

Distress,
Avoidance
& Disability

discursive
practices

D

Social Response

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