Somatization, Secondary Gain, and Chronic Pain: Is There a Relationship?

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This article reviews the concept of somatization and its importance to chronic pain patients. In addition, this article addresses the hypothesis that some chronic pain patients may be using somatization for secondary gain. Evidence for this hypothesis is reviewed, and I conclude that there is very little scientific evidence to support this hypothesis now.

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The term *somatization* has become extremely common in the medical literature, yet there is little agreement about its definition [1]. The most recent definition by Lipowski [2] defines somatization as "a tendency to experience and communicate somatic distress and symptoms that are unaccounted for by pathologic findings, to attribute them to physical illness, and to seek medical help for them. It is usually assumed that this tendency becomes manifested in response to psychosocial stress brought about by life events and situations personally stressful to the individual." Somatization does not represent a specific psychiatric or medical diagnosis and does not necessarily imply that a psychiatric disorder must be present [1]. Because somatization is not a specific diagnosis, it does not have operational criteria by which the diagnosis can be reached. This has been a detriment to the study of somatization per se and has led to authors using their own definitions and criteria. For example, Bridges and Goldberg [3] have recommended the use of the following criteria: 1) patients must seek help for somatic symptoms and not for psychologic manifestations of psychiatric disorder, 2) patients must attribute their symptoms to medical illness, and 3) patients must report symptoms that justify psychiatric diagnoses. Note that these criteria do not correlate with all the elements of Lipowski's definition for somatization. Lipowski [4] has in turn developed a different set of criteria for what is termed *persistent somatization* (Table 1).

Problems with definition and criteria for somatization will be discussed later in greater detail.

Somatization is very common. About 60% to 80% of physically healthy people experience somatic symptoms in any given week [5]. Wallen *et al.* [6] reported that of 260,000 patients in 325 hospitals, 5.2% were placed in the diagnostic category of "symptoms and ill-defined conditions." However, somatization does not imply that the patient does not have a concurrent physical illness. Somatization can be, and most frequently is, comorbidly associated with physical diseases [3,7]. In addition, patients who are identified as somatizers often suffer from chronic illness and die early [8].

Major depression is frequently reported to be associated with somatization [9,10]. However, recent studies indicate that this observation may be overly simplistic. Chandler and Gerndt [11] have shown that a substantial number of elderly, depressed patients who allegedly had somatization disorder had in reality coexistent physical illness. In addition, when age and sex were controlled, patients suffering from depression were no more likely to have somatic complaints than patients who were diagnosed with other psychiatric illnesses. Therefore, it may be possible that the frequently reported association between depression and somatization reflects the preponderance of women and an increase in medical problems related to aging in the patient populations in which somatization is studied. This is the second problem with somatization research that will be discussed in greater detail.

Based on the information on somatization previously discussed, Sullivan and Katon [1] concluded that: 1) somatization

Table 1. Criteria for Persistent Somatization

Complaints of physical symptoms in the absence of relevant physical findings

Persistent fear or belief that the symptoms indicate serious physical illness despite reassurance by the physician to the contrary

Repeated search for medical help for the preceived symptoms

Partial or total disability as judged by occupational and social impairment

Duration of the above behavior for at least 6 months

is very common, 2) somatization frequently coexists with medical illness, 3) a spectrum of severity from acute to chronic exists for somatization, and 4) most somatization is transient and treatable. Sullivan and Katon [1] described three types of somatization reactions: 1) related to acute situational stress, 2) related to an acute psychiatric disorder or disorders, and 3) related to a chronic psychiatric disorder or disorders.

Sullivan and Katon's [1] scheme is presented in Table 2. The table divides somatization reactions into those reactions that are related to acute situational stress, reactions that are related to acute psychiatric disorders, and reactions that are related to chronic psychiatric disorders. In somatization related to acute psychiatric disorder, the somatization is actually part of the psychiatric disorder, *eg,* depression [9,10,12–19].

Ford [19] pointed out somatization similarities among the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition, (DSM-IV) [20] somatoform

disorders (hypochondriases, conversion disorder, somatization disorder, pain disorder, undifferentiated somatoform disorder, somatoform disorder not otherwise specified, body dysmorphic disorder), factitious disorders, and malingering and has grouped these as *somatizing disorders* (Table 2). Each of these diagnoses will be discussed later in relationship to its prevalence within the chronic pain patient (CPP) population according to the available research.

Finally, Table 2 lists some characteristics such as "preoccupation with health and symptoms," which appear to differ between the three types of somatization reactions.

Somatization and the Chronic Pain Patient

In their review, Sullivan and Katon [1] claimed that patients with chronic nonmalignant pain tend to have multiple nonpain physical complaints. However, they never reviewed the literature on pain for a basis to this

Table 2. Somatization Reactions: Characteristics and Associated Syndromes

	Secondary somatization [12]		Primary somatization [12]
Associated features	Somatization related to acute situational stressor	Somatization related to acute psychiatric disorder	Somatization related to chronic psychiatric disorder
Stressful life events	Events cause symptoms that cause patients to seek treatment	Symptoms are actually part of the acute psychiatric disorder, *eg,* insomnia	Symptoms related to their chronic psychiatric disorder
Associated psychiatric diagnoses	Adjustment disorder [1]	Major depression [9,10,13–15] Panic disorder [16]	Hypochondriasis [17–19] Pain disorder [18,19] Somatization disorder [18,19] Conversion disorder [18,19] Body dysmorphic disorder [18,19] Undifferentiated somatoform disorder [19] Somatoform disorder not otherwise specified [19] Factitious disorder [18,19] Malingering (not a psychiatric disorder) [18,19]
Chronic problem (lasts lifetime, some degree of disability) [1]		+	+++
Preoccupation with health and symptoms	+	++	+++
Fear or conviction of having a physical disease	+	++	+++
Personality trait?	No	No	Under investigation
Likely to be persistent?	No	Dependent on the success of treatment for psychiatric illness	Yes

+ +++ *less likely to more likely.*

assertion but base their opinion on some family medicine studies. Here, the literature indicates that these symptoms account for 30% to 40% of ambulatory medical visits, with only a small percentage of these having an identifiable organic etiology [21].

A review of the studies on pain in the literature that have used somatization questionnaires indicates that several chronic pain studies do support this conclusion. A high percentage of CPPs demonstrate elevated hypochondriasis scores [22] and somatization scores [23] as measured by the Illness Behavior Questionnaire and the Modified Somatic Perceptions Questionnaire, respectively. In addition, when patients with various types of chronic pain are compared with appropriate controls on somatization measures, the CPPs are frequently demonstrated to have greater somatization scores. This finding has been demonstrated for CPPs with orofacial pain [24,25], migraines [26], noncardiac chest pain [27], chronic low back pain [28], and fibromyalgia [29]. Finally, somatization scores appear to be predictors for treatment outcome in CPP with temporomandibular disorders [30] and low-back pain [31]. According to the somatization questionnaires, somatization may be a significant problem in CPPs, and patients with this problem may be at risk for poor treatment outcome.

There are also several pain studies that have investigated somatization by looking at the frequency of various "somatizing disorders" in CPPS. Data for the somatizing disorders that have been investigated are presented in Table 3.

Somatization Disorders

Somatization disorder is the most important of the somatization reactions. This diagnosis is based on a history of many physical complaints beginning before age 30 years [20]. The diagnostic criteria for this disorder are presented in Table 4. Somatization disorder is the most extensively investigated, valid, and reliable of the chronic disorders associated with somatization. It is also the most disabling [32]. However, its prevalence is low (1% of general population) [33], and it is often comorbidly associated with other psychiatric disorders [34]. Most patients with somatization disorder are comorbid for at least one other lifetime psychiatric disorder [19]. Here, the most common disorders (in decreasing frequency) are major depression, dysthymia, panic disorder, generalized anxiety disorder, substance abuse, and personality disorders [35,36]. As seen in Table 3, the frequency of somatization disorder in CPPs

Table 3. Diagnostic Frequency of Somatizing Disorders in Chronic Pain Patients

	Study							
	Fishbain *et al.* [48]	Reich *et al.* [49]	Katon *et al.* [50]	Large [51]	Fishbain *et al.* [46••]	Fishbain *et al.* [52]	King*	Polatin *et al.* [53]
Chronic pain patients, *n*	283	43	37	50	Not available	2860	59	200
Diagnostic measure	DSM-III, 2-hr semistructured interview, flowsheet	DSM-III, flow-sheets	DSM-III, DIS	DSM-III, Maudsley style	DSM-III	DSM-III	DSM-IV	DSM-III-R, SCID
Diagnostic frequency, %								
Somatoform disorders			16.2					
Somatization disorder	3.9	5	—	8	—	—	—	1.0
Conversion disorder	37.8	2	—	8	—	—	—	—
Psychogenic pain/pain disorder	0.3	32	—	—	—	—	51.0	97.0
Hypochondriasis	0.7	—	—	—	—	—	—	1.0
Factitious disorders	—	2.0	—	—	—	0.14	—	—
Malingering	—	—	—	—	0–22	—	—	—

*King SA, Paper presented at the Eighth World Congress on Pain, Vancouver, 1996.
DIS—National Institutes of Mental Health Interview Schedule; DSM-III—Diagnostic and Statistical Manual of Mental Disorders, edn 3; DSM-III-R—Diagnostic and Statistical Manual of Mental Disorders, edn 3, revised; DSM-IV—Diagnostic and Statistical Manual of Mental Disorders, edn 4; SCID—Structured Clinical Interview for DSM.

Table 4. Diagnostic Criteria for Hypochondriasis and Somatization Disorder*

Hypochondriasis	Somatization disorder
Fear of having, or belief that one has, serious disease based on misinterpretation of bodily sensations Fear persists despite reassurance Fear causes substantial distress or impairment Duration of the disturbance is > 1 month Fear is not better accounted for by another mental disorder	History of many physical complaints beginning before age 30, occurring over many years, and resulting in treatment seeking or impairment Includes each of the following: Four pain symptoms Two gastrointestinal tract symptoms One sexual symptom One pseudoneurologic symptom Includes either of the following: Unexplained symptoms Impairment exceeds that which would be warranted by physical findings

*Data from The American Psychiatric Association [20].

ranges from 3.9% to 16.2%. This percentage range is higher than in the general population.

The next somatizing disorder is conversion disorder. In DSM-IV [20], conversion disorder has two criteria: 1) a loss or alteration of physical functioning suggesting a physical disorder, and 2) the presence of psychologic factors judged to be etiologically related to the symptom. That is, a temporal relationship should exist between a psychosocial stressor related to a psychologic conflict or need and initiation or exacerbation of the symptom. Psychologic issues are judged to be associated with initiating the symptom that is unconsciously produced and therefore not intentional or feigned [20]. Nonorganic physical findings that are often found in CPPs [37–39] can be considered to be equivalents of conversion symptoms. Fishbain *et al.* [39] have shown that nondermatomal sensory abnormalities, as a conversion symptom, do not occur randomly in CPPs but rather in relationship to pain in the affected extremity. Such a result suggests that chronic pain coexists with conversion in CPPs, whatever the etiology for that pain. Finally, the psychologic criteria for this disorder do not protect the psychiatric consultant from a false-positive diagnostic error [40,41], which can lead to disastrous medicolegal consequences. Thus, this diagnosis has questionable diagnostic validity, especially for CPPs. As seen in Table 3, the range for conversion disorder in CPPs is from 2% to 37.8%. The wide discrepancies in this range likely relate to the above criteria problems.

Pain disorder is the next somatizing disorder to be considered. This diagnosis [20] contains three basic criteria: 1) the pain must involve one or more anatomic sites and is the predominant focus of the clinical presentation (criteria A); 2) the pain must cause clinically significant distress and impairment in social, occupational, or other important areas of functioning (criteria B); and 3) psychologic factors must play an important role in the onset, severity, exacerbation, or maintenance of the pain (criteria C). These are new criteria developed for the DSM-IV [20], and although an improvement over the old criteria, are likely to have low reli-

ability and validity and to be overinclusive [42]. As seen in Table 3 the range for pain disorder in CPPs is from 3% to 97%. This wide range is also a reflection of criteria problems.

The next somatizing disorder to be considered is hypochondriasis. This disorder is deemed as a preoccupation with having a serious illness [20]. Diagnostic criteria are presented in Table 4. Hypochondriasis is a chronic disorder [20]. Some authors report that it is rare [20], but others have reported a 4% to 6% prevalence in an internal medicine clinic [43]. It is often comorbidly associated with depression [17] or somatization disorder [44]. As seen in Table 3, the reported range for this diagnosis in CPPs is from 0.7% to 1%. This range is lower than that reported for medical patients.

The next somatizing disorder, body dysmorphic disorder, is a preoccupation with an imaginary or slight physical defect in appearance such as hair or facial features [20]. It is relatively uncommon and has significant psychiatric comorbidity, such as major depression [20]. There are no prevalence reports or case reports for body dysmorphic disorder in CPPs.

The next somatizing disorders to be considered are undifferentiated somatoform disorder and somatoform disorder not otherwise specified. Undifferentiated somatoform disorder is a diagnosis that is used for one or more unexplained physical symptoms [20]. Somatoform disorder not otherwise specified is a diagnosis reserved for somatic symptoms that have a prominent psychogenic component but do not fit the criteria of one of the other somatoform disorders, *eg*, psychogenic vomiting [20]. There are no reports for either of these disorders within CPPs.

Factitious disorder is the next somatizing disorder to be considered. The criteria for this disorder specify that physical or psychologic symptoms are consciously feigned in order to assume the sick role (secondary gain) for which there is unconscious motivation [20]. Factitious disorder is rare and is often comorbidly associated with personality disorders (borderline, antisocial) [45]. The reported range for this diagnosis in CPPs is from 0.14% to

2% (Table 3). This range is likely to be above that of the general medical population.

The next somatizing disorder is malingering. Malingering is not defined as a mental disorder, rather, it is an act and is therefore not an official psychiatric illness [20]. Malingering, is defined as the conscious and deliberate production, simulation, or exaggeration of a symptom for a conscious gain such as obtaining disability payments or avoiding military service [20]. There are few studies of malingering; therefore it is difficult to determine the prevalence of this condition. However, Fishbain *et al.* [46••] have recently reviewed the literature as it relates to pain. Fishbain *et al.* [46••] found that the range for reports on malingering in CPPs is between 0% and 22%. This finding is in stark contrast to a report by the Institute of Medicine on pain and disability, which could not find any studies related to malingering and pain and concluded that malingering was rare in the chronic pain setting [47]. Fishbain *et al.* [46••] however, cautioned that the presented figures are likely to be incorrect due to the poor quality of the reviewed studies.

In all, the literature on pain and the prevalence of somatizing disorders in CPPs [48–53] indicates that, because of criteria difficulties, any figures are highly unreliable. However, it appears that somatizing disorders are present within this population.

Secondary gain

Barsky [54] has defined secondary gain as "acceptable or legitimate interpersonal advantages that result when one has the symptom of a physical disease." With respect to CPPs, the various types of identified secondary gains have been summarized in a recent review by Fishbain [55]. These secondary gains are presented in Table 5. Fishbain *et al.* [56•] also reviewed the literature for studies related to the concept of secondary gain. Thirty-eight studies that addressed the concept of secondary gain were found. Of these, 18 dealt with chronic pain. Fishbain *et al.* [56•] concluded that pain and secondary gain research is weak and constrained by many methodologic flaws. However, receipt of disability benefits (a secondary gain) does change patient behavior, and spouses' solicitous responses to a CPPs' pain can serve as a secondary gain for that patient [56•].

Somatization and secondary gain may also be linked in the same fashion as pain and secondary gain. For example, Ford [18] has pointed out that there are a number of factors that may facilitate the development of somatization. These factors are: social isolation; amplification (a tendency to experience somatic and visceral sensation as intense, noxious, and disturbing); alexithymia (inability to use words to describe emotional state); physiologic concomitants of psychiatric disorders such as insomnia; cultural attitudes; religious factors; stigmatization of psychiatric illness; economic issues; fashionable diagnoses, *eg*, reactive hypoglycemia; and the gains of illness, specifically secondary gain. Other authors have pointed out the adaptive advantages of somatization. Goldberg and Bridges [57] have claimed that somatization may be a way for the patient to avoid identifying himself or herself as mentally ill and that somatic symptoms provide excuses for other failings, *ie*, secondary gain. Mechanic [58] has claimed that the communication of somatic complaints may represent an attempt by the patient to attain certain personal objectives such as attention, release from social obligations and demands (or an excuse for failure to meet them), resolution of an inner or interpersonal conflict, support from others, or financial benefit. Similarly, other authors have claimed that because of these secondary gains, disability benefits serve as a disincentive to rehabilitation [59].

At issue then is whether these viewpoints and claims are anchored in substantive scientific studies, and whether there are substantive scientific studies that have addressed the possible relationship between secondary gain and somatization and the relationship among secondary gain, somatization, and chronic pain.

Table 5. Secondary Gains to be Derived from Symptoms of Physical Disease

Gratification of preexisting unresolved striving for dependency	Sympathy and concern from family and friends
Gratification of preexisting unresolved revengeful striving (*eg*, getting paid for not working in a setting where the employee felt unappreciated or was engaged in a risky job, revenge at insurance carriers or adjusters who gave the patient a hard time)	Ability to withdraw from an unpleasant or unsatisfactory life role or activity
	Ability to communicate and relate to others in a new, socially sanctioned manner
	Financial rewards associated with disability
Attachment behavior or an attempt to elicit caretaking	Access to drugs
Oversolicitousness and overprotectiveness by significant others	Retaining the spouse in a marriage
	Maintenance of family status
	Maintenance of family love
Family antagonism (anger) because of disability could increase patient resentment and determination to get his or her due and prove entitlement	Achieving or maintaining a dominant position in the family
	Freedom from the socioemotional ("bread winner") role
Preferential or less hazardous work conditions or a means of avoiding work	Means of contraception

Somatization and Secondary Gain

I was able to find only four studies [60•,61–63] that investigated the relationship between somatization and secondary gain. In the first study, Raskin et al. [63] judged secondary gain to have been present in 81% of 26 patients with hysterical conversion compared with only 28% of patients with an organic illness. In the second study, House and Andrews [62] found that discrimination between functional and organic dysphonia was enhanced when patient stressors were characterized on a dimension of "conflict over speaking out," defined as a situation in which a person wishes to protest or complain, but such forthrightness might lead to adverse consequences. In the third study of acute abdominal pain, Craig and Brown [61] determined that environmental events among the functionally ill were three times more likely to involve the breakup of a close relationship than were environmental events among the organically ill or healthy comparison groups. In the final study, Craig et al. [60•] categorized patients with somatic complaints into functional and organic disease based on evidence for organic disease. They also categorized life events previous to the illness for secondary gain potential based on a four-point rating scale (none, some, moderate, marked). It was found that in 38 weeks before symptom onset somatizers and psychologizers were more likely to have experienced at least one event that had secondary gain potential.

The previous studies indicate that, although many writers have theorized about a link between somatization and secondary gain, there is very little evidence (four studies) for this relationship. In addition, there are problems with these studies in terms of how the presence of secondary gain was demonstrated. In Raskin et al.'s study [63], judgement was used to determine the presence of secondary gain. Similarly, in House and Andrews' study [62], judgement was used to make a decision about unconscious conflicts. In both of Craig et al.'s studies [60•,61] environmental events were characterized as having "potential for secondary gain" rather than determining whether the patient's behavior was motivated by secondary gain. Thus, there is very little evidence overall for a relationship between secondary gain and somatization.

Somatization, Secondary Gain, and Pain

To answer the question of whether there are substantive studies that indicate a clear relationship among somatization, secondary gain, and chronic pain, the literature was reviewed to isolate these studies. Only two studies [64,65] were found that could be construed to address the relationship among secondary gain, somatization, and chronic pain. In the first study [65], 250 CPPs were administered the SCL-90. All patients had elevated SCL-90 scores, but workers' compensation patients demonstrated the highest level of somatization. Because workers' compensation patients are often alleged to have secondary gains [56•],

this study appears to support a relationship among secondary gain, somatization, and chronic pain. Similarly, the second study [64] also used workers' compensation CPPs, but here the Somatic Amplification Rating Scale (SARS) was used. The SARS is designed to quantify nonorganic physical findings that indicate either conversion problems or malingering. It was found that CPPs with high SARS scores were significantly more likely to be workers' compensation CPPs. These two studies then point to a potential relationship among somatization, chronic pain, and secondary gain.

General Critique of the Somatization Literature

The study of somatization has been approached in two major ways: 1) using operational diagnostic criteria as in the DSM system to arrive at a diagnosis for one of the somatizing disorders, and 2) using some kind of questionnaire that will measure somatization. Each of these approaches will be discussed and critiqued.

In reference to the operational criteria approach, researchers cannot agree on a definition for somatization and there are conflicting definitions. Therefore, a satisfactory operational diagnosis for somatization has not been developed, and the concept remains murky. Regarding the somatizing disorders, although operational criteria for these disorders exist, most of these diagnoses appear to have validity problems. For the presence of secondary gain, as for somatization, there are no operational criteria [55]. Such a situation makes it difficult to link somatization with secondary gain in a valid, meaningful fashion.

The situation in determining the presence of malingering by questionnaire is subject to an even greater number of problems. These problems are as follows. When measuring somatization in CPPs by questionnaire, the first and major problem is to be sure that the measured somatization is not pain dependent, ie, it is independent of pain and pain levels. There is significant evidence that somatization scores using the SCL-90 are pain dependent [66–68]. This is important, because the tendency to somatize is conceptualized as a personality trait. Therefore, it should not be influenced by pain. The second major problem is that of the actual stability or test-retest reliability of such tests as the SCL-90. Fishbain [69] recently pointed out that the Minnesota Multiphasic Personality Inventory (MMPI), a psychologic test that contains a somatization scale, is not stable with pain treatment. That is, MMPI profiles change with treatment as pain improves. Because the MMPI is a personality test, scores are not supposed to change with pain treatment. A similar problem has been recently encountered with the SCL-90. Wallis et al. [70] demonstrated that SCL-90 profiles will change with successful pain treatment. The third major problem is that of depression. As previously described, many of the somatizing disorders are comorbidly associated with depression.

In addition, depression is comorbidly associated with chronic pain and appears to be pain dependent [71•]. Yet none of the reviewed somatization studies attempted to control for depression. The fourth major problem is comorbidity of some of the major pain syndromes with identified physical disorders that would bias the results of somatization questionnaires. An example of this is fibromyalgia, which is comorbidly associated with irritable bowel syndrome, Raymond's phenomena, mitral valve prolapse, and hypermobility syndrome [72]. Each of these illnesses has a characteristic set of somatic complaints that can bias responses to a somatization questionnaire. None of the reviewed somatization studies attempted to control for this problem.

In all, these four problems indicate that the issue of somatization is difficult to study. In addition, it is also possible that because of these problems, much of what we currently know about somatization in CPPs could be incorrect.

Conclusions

Somatization and some somatizing disorders are frequently encountered in the CPP population. Similarly, secondary gain is also allegedly encountered in CPPs and appears to change CPP behavior. At issue is whether somatization is used by some CPPs to satisfy a secondary gain agenda. The scientific evidence for this hypothesis is slim at best. Few studies have addressed this issue, although these studies appear to be consistent. As I pointed out, there are methodologic difficulties in determining who is and who is not somatizing and what normal somatization is in the context of chronic pain. Therefore, a decision on the validity of this hypothesis awaits further study.

Acknowledgment

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