

CHAPTER 22.

SOMATIZATION

Introduction

One of the great clinical challenges faced by medical practitioners is the care of people who complain of physical symptoms for which no physical cause, or insufficient physical cause, can be found. This problem has a long history. In ancient Greece the disorder was observed in women, and was believed to be caused by the womb (hystera) of the woman roaming around inside her body. The condition was called hysteria. In early times, the term hypochondria was used when a person believed that he or she had an illness for which there was no physical evidence. This term indicated that the problem was under the cartilage (chondrium) of the front of the chest and thus could not be palpated (felt with the hand)

This field is crowded by theories, many with overlapping components. When there are many theories about a particular situation/disorder, none hold the complete answer. If one held the complete answer, it would soon replace all the others. Expert opinion indicates the need for seriously rethink the somatoform disorders (Janca, 2005).

Some of the more useful terms/theories are described below. These concepts are not mutually exclusive. With our limited present knowledge, it may be necessary to conceptualize the problems of different patients using different theoretical concepts.

Somatoform disorders (DSM-IV)

Soma (Greek) refers to the body of an organism. The somatoform disorders take the form of body/physical disorders. However, no physical lesion can be found which satisfactorily explains the reported symptoms. The DSM-IV lists the following:

- Somatization disorder
- Conversion disorder
- Pain disorder
- Hypochondriasis
- Body dysmorphic disorder

Somatization is a term/concept of great importance which is central to the somatoform disorders and will be discussed before we proceed to consider these disorders separately.

Somatization

Somatization is defined as the propensity of a patient to experience and report physical/somatic symptoms that have no pathophysiological explanation, to misattribute them to disease, and to seek medical attention for them (Lipowski, 1988).

The elements of this definition deserve individual examination. There is a “propensity”, thus particular personality traits or beliefs are present and repetition of the behaviour can be expected. The symptoms are “experienced”, not just reported. Thus, somatizing patients are not feigning symptoms and somatization is distinct from factitious disorder and malingering. There is no “pathophysiological explanation” to be found in the organ or region in which such a finding could be expected. However, comorbid psychiatric symptoms may exist. The misattribution of symptoms to somatic disease may result in, or arise out of, the belief that disease is present. There is ample opportunity for misattribution as population based surveys reveal that healthy adults experience more than one somatic symptom each week (Egan and Beston, 1987). Medical attention is sought and sought frequently. In addition, a large amount of attention is sought from relatives, friends, pharmacists and alternative therapists.

This is a descriptive term, free of etiological speculation. Neuropsychological testing has shown that somatization is associated with information-processing deficits (Shapiro, 1965; Schalling et al, 1973). A recent review confirmed such patients manifest specific cognitive features (Rief & Nanke, 1999).

Alexithymia, meaning being “without words to describe emotions”, has also been reported to be an important factor in somatization (Sifneos, 1996). It is proposed that in the absence of the ability to describe emotions, individuals respond to life situations in a maladaptive ways. Alexithymic individuals focus on facts, details and external events, and tend to have a limited fantasy life.

Many individuals, who do not satisfy strict diagnostic criteria for alexithymia, nevertheless have an impoverished ability to express their emotions in words or by other adaptive means. Important factors include intelligence, education and culture/sub-culture (eg, “macho” males). Somatization is more frequent in the lower socioeconomic classes, where opportunities are limited (Gentry et al, 1974).

When such a patient has presents, it is important for the doctor and patient to communicate effectively. Responsibility rests with the doctor to attempt to understand the patient’s “physical” language.

Somatization Disorder

Somatization disorder as defined in DSM-IV remains a controversial diagnosis. Somatization (the process) as described by Lipowski occurs in somatization disorder, but the presence of the process alone is not sufficient to justify the DSM-IV diagnosis of somatization disorder. For this diagnosis to be made there must be a lifetime history of pain in at least four different parts of the body and symptoms “relating” to

the GI tract, the neurological system, and sexual function. The full DSM-IV diagnostic criteria are listed in the Appendix at the end of this chapter.

In hysteria, an earlier designation for this disorder, using neuropsychological testing, information-processing deficits were demonstrated. These were characterized by distractibility and difficulty in distinguishing target stimuli (Ludwig, 1972, Flor - Henry et al, 1981).

Conversion disorder



Conversion disorder is defined as a loss or alteration in bodily function which is not caused by a medical disorder, but is caused by psychological factors (conflict or need). See the appendix for DSM-IV diagnostic criteria. The most common examples are loss of movement or sensation of a limb; others include blindness, pseudoseizures, abnormalities of gait, mutism, and tics.

The difficulties of the definition are immediately obvious. We are limited in the degree to which we can exclude somatic disease by the accuracy of available investigative technology. For example, certain cortical lesions (e.g., heterotopia) which could not be identified with CT, only became so with the arrival of MRI. Also, the definition calls for a temporally related stressor, but in practice, these are often impossible to establish. Finally, certain diagnosis requires the disorder to be unconsciously motivated, but this too, is often impossible to establish.

The risk of failing to identify and misdiagnosing physical disorders as conversion is ever present. With present advanced investigative techniques the risk is small, in the region of 5% (Crimlisk et al, 1998). Nevertheless, the author recently diagnosed a patient with conversion disorder who was later found to have a large med iastinal tumour on X-ray. The nervous system had appeared normal (within the patient's

ability to co-operate), but there was considerable wasting, and carcinomatous neuropathy was the corrected diagnosis.

The field is not completely understood. Of neurological inpatients, only about 1% are diagnosed with conversion disorder (Marsden, 1986), but 33% have no organic explanation for their physical complaints (Ewald et al, 1994).

Psychiatric co-morbidity is frequently present, particularly depression (38 -50%) and anxiety (10-16%). Personality disorder and somatization disorder are also frequently observed.

The outcome of conversion disorder is variable. Acute onset which is actively treated usually gives a good outcome, especially if concurrent psychiatric disorder is present and responds to treatment. Chronic disorder may involve a wheel-chair existence and be difficult to assist (Mace & Trimble, 1996).

Management may include hospitalization, which relieves social and other pressures. It is important for any hospitalization to be active and brief. Such patients may easily become more dependent if placed in a passive role. Psychiatric assessment should continue, and problems should be discussed. Solutions to problems should be developed with the participation of the patient. A return to physical activity is strongly urged. It is useful to send the patient to be mobilized in the physiotherapy department. While there is no significant physical lesion, such assistance allows the patient to recover and offers a "face-saving" explanation for the recovery.

Conversion disorder received close attention from psychoanalysts (see later). The classical view is that unconscious conflicts between id drives and the superego are resolved by the unconscious production of physical symptoms. The relief of the intolerable conflict was designated the "primary gain". The subsequent support from others and the release from responsibilities of daily life was designated "secondary gain". The term secondary gain has leached into broader use, but from the purist perspective, it should only be used when we are applying psychoanalytic explanations. Learning theory provides a less complicated explanation.

Hypochondriasis

Hypochondriasis involves preoccupation with an unrealistic fear or belief of having a serious disease, despite appropriate investigation and reassurance. See the appendix for DSM-IV diagnostic criteria.

Fear or belief of having a serious disease, however, is common to all somatoform disorders. There are doubts as to whether hypochondriasis is a discrete disease entity (Rief et al, 1998). The diagnosis is frequently made in the primary care setting, and management is notoriously difficult.

The DSM-IV can be criticized for giving a new definition to an old problem. Many older textbooks (Curran and Partridge, 1969) did not list hypochondriasis as a discrete entity, instead, indexing it under the following: endogenous depression, GPI, involuntional melancholia, schizophrenia, and senescence. Kenyon (1976) has strongly

argued that hypochondriasis is always a secondary part of another syndrome, usually a depressive disorder.

In the earlier diagnostic systems which did allow hypochondriasis as a discrete entity, hypochondriacal thoughts could be held with delusional intensity. Using the DSM-IV system, however when delusions are present, it is necessary to make the diagnosis of delusional disorder.

Pain disorder

The DSM-IV lists pain associated with psychological factors or with both psychological factors and a general medical condition, as distinct from somatization disorder. See the appendix for DSM-IV diagnostic criteria.

However, chronic pain has been described as the most common form of somatization (Katon et al, 1984; Aigner & Bach, 1999). This emphasises the difference between the process of somatization and the diagnosis of somatization disorder.

The diagnosis of pain disorder is particularly difficult when there has been physical disease or injury, due to incompletely understood phenomena such as complex regional pain syndrome (Walker and Cousins, 1997), and the painful joint stiffness and muscular weakness associated with disuse.

Learning is important in pain disorder. There is evidence that prior experience of pain influences the response to stimuli (Bayer et al, 1998). Secondary gain reinforces pain-related behaviour and prior social models, especially sick and suffering parents, predispose to the development of the condition (Apley, 1975). The factors which sustain chronic pain (particularly low back pain) probably include fear of movement and pain which can lead to the disuse syndrome and a self-perpetuating cycle (Vlaeyen and Linton, 2000).

Body dysmorphic disorder

In this condition there is preoccupation with a minor or imagined defect in appearance. See the appendix for DSM-IV diagnostic criteria.

This disorder does not sit easily with the other disorders in this chapter. It is only mentioned here for the sake of completeness, as it appears under the heading of Somatoform disorders in the DSM-IV.

Conceptual Underpinning

As mentioned in the Introduction, many theories have been advanced to explain physical disorders for which no adequate physical explanation can be found. They spring from various schools of thought/disciplines with a wide interest in human behaviour.

Attribution Theory

What individuals believe about their symptoms influences who they consult and how they manage those symptoms (King, 1983). Individuals have enduring attributional styles (Garcia-Campayo et al, 1997), such that when a symptom is experienced, it is likely to be attributed to a physical, psychological or environmental/normalizing explanation (Robins and Kirmayer, 1991). Not surprisingly, general practice attendees with hypochondriacal tendencies have more physical attributions than those with anxiety disorders (MacLeod et al, 1998). Educational programs designed to modify attribution style are useful in the management of chronic pain conditions and somatization. In chronic pain conditions, the patient often attributes the pain to progressive damage and is therefore reluctant to be active. This leads to disuse atrophy and unnecessary disability. When the patient attributes the pain to an abnormal process rather than a progressively destruction, the scene is set for improved function.

Medical Anthropology

Illness may be defined, anthropologically, as “the human experience of sickness”. The process begins with personal awareness of a change in body feeling and continues with the labelling of the sufferer by the sufferer and his/her family as “ill” (Kleinman et al, 1978). Illness is greatly dependent on cultural beliefs about disease and discomfort and can be viewed as a “cultural construction” (Wexler, 1974). Illness may be construed as the patient’s view of clinical reality (patient’s view). Some claim that medical doctors treat illness poorly, while traditional and alternative therapists, who listen and give culturally relevant explanations, treat illness well (Stimson, 1994).

Disease may be defined as “abnormalities in the structure and function of body organs and systems”. This may be construed as the medical view of clinical reality (medical view). One criticism of modern medicine is that it focuses on the treatment of disease and ignores the treatment of illness (Engel, 1977).

Common sense suggests a better outcome will be achieved if both illness and disease are treated. Toward this end, the doctor should seek to fully understand the patient’s view, explain the medical view and negotiate a shared view (Von Korff et al, 1997).

Abnormal Illness Behaviour

Abnormal illness behaviour (AIB) provides an intellectual framework for a range of human behaviours (Pilowsky, 1969). It depends on two sociological concepts, 1) illness behaviour and 2) the sick role.

Illness behaviour is defined as, “the ways in which individuals experience, perceive, evaluate and respond to their own health status” (Mechanic, 1968).

The sick role is conceptualized as bringing obligations and privileges (Parsons, 1964). The obligations are that the person seeking the role, 1) accepts that the role is undesirable, 2) co-operates with others to achieve health, and 3) utilizes the services of those regarded by society as competent in healing. If these obligations are fulfilled, the individual is granted the following privileges, a) regarded as not being responsible for his/her condition, b) accepted as someone requiring care, and c) exempted from normal obligations (such as work).

On these foundations, Pilowsky (1997) defined AIB as, “an inappropriate or maladaptive mode of experiencing, evaluating or acting in relation to one’s own state of health, which persists, despite the fact that a doctor (or other recognized social agent) offered accurate and reasonably lucid information concerning the person’s health status and the appropriate course of management (if any), with provision of adequate opportunity for discussion, clarification and negotiation, based on a thorough examination of all parameters of functioning (physical, psychological and social) taking into account the individual’s age, educational and sociocultural background”.

AIB is a multifaceted thesis of theoretical importance. It highlights the connection between social influences and health and provides a unifying conceptual basis for illness related behaviour, including but extending beyond the somatoform disorders, to factitious disorder and malingering. It also extends in another direction, to the denial of illness. It casts the individual who denies illness and stays at work under the same umbrella as the individual who pretends illness and goes to the football - with the majority of illness behaviours lying somewhere between these two extremes.

In addition, AIB gives context for the responsibility of the doctor as the socially designated controller of sick role privileges; a frequently onerous and unwelcome duty.

Medicalization

Medicalization describes the tendency of contemporary society to view every day life with a medical perspective. It shares roots with the principle of social justice, in an increasingly humane society. In general it places increased responsibilities with health professionals, authorities and insurers. This process is a feature of society, not of the individual. The constructs of society influence the options and the course of action which will be chosen by the individual.

An example of one form of medicalization is the presentation at the general hospital of people with social problems. Marital disputes frequently result in one party achieving admission to hospital, wrongly diagnosed as suffering a psychiatric disorder. Another form is an accompaniment of very sensible, well intentioned public health endeavours such as those which urge people to take chest pain seriously and to be alert for the early signs of diabetes/cancer. In all probability these save lives. Just as probably, they encourage the public to regard every ache and pain as a warning sign of disease and an indication for medical examination.

Psychoanalytic model

While the psychoanalytic model contributed greatly to our understanding of the human condition, it is rarely applied in the current management of somatoform disorders.

This model proposes that subjective experiences of childhood give rise to unconscious “conflicts” between basic drives (usually sexual and aggressive in nature) and the superego (the learned code or conscience). These conflicts lead to anxiety, depression, social and sexual inhibitions, difficulties in interpersonal relationships and somatic symptoms. It is the work of psychoanalysis to bring these conflicts into awareness. This process enables the patient to change maladaptive patterns of thinking, behaving and feeling. Psychoanalysis is a unique form of treatment which requires extensive training.

Biopsychosocial Model

The biopsychosocial model aims to take account of the broad range of influences (biological, psychological and social – cultural can also be included) which may coalesce in the formation of a disorder.

Chronic whiplash injury pain following rear-end collisions may be an example. Some authorities view the whiplash syndrome as culturally constructed (Trimble, 1981). It is non-existent or almost non-existent in Singapore, Lithuania, Germany and Greece, and among laboratory volunteers and fair-ground bumper car drivers, but common in the USA and Australia (Ferrari and Russell, 1999).

In this example, the biological dimension is most probably an acute sprain which resolves/heals without any significant residual structural damage. At least in the majority of cases, no convincing, enduring pathology has been demonstrated using current medical technology. Important psychosocial determinants are present in cultures which provide “overwhelming information” regarding the potential for chronic pain following whiplash injury, medical systems which encourage inactivity and caution, and litigation processes which involve protracted battles with insurance companies. Patients are led to expect, amplify and attribute symptoms in a chronic fashion.

Four-dimensional symptom questionnaire (4DSQ)

The 4DSQ is a recent self-report questionnaire (Terluin et al, 2006) which measures “distress, depression, anxiety and somatization”. Few other instruments attempt to quantify somatization. This questionnaire is available free of charge for non-commercial use (EMGO, 2000).

Synthesis and Summary

Lipowski's view that some individuals have a propensity to experience and report somatic symptoms that have no pathophysiological explanation, to misattribute them to disease, and to seek medical attention has not been disputed in the literature and can be accepted. Somatoform disorder, hypochondriasis and pain disorder remain contentious, insofar as they may not represent discrete disease entities. However, they all have elements of somatization and currently emerge in a cultural setting in which medicalization is a prominent feature. Evidence indicates that cognitive processes are etiologically important. Somatoform disorders are associated with information processing deficits. In pain disorder learning is an etiological mechanism, as demonstrated by the importance of secondary gains and the influence of social models. Fear of pain and movement may be important in the maintenance of some chronic pain.

Evidence of the importance of cognition in somatisation and somatization disorder continues to grow. Attributional theory advances the reasonable proposition that ambiguous symptoms will be interpreted in accordance with personal beliefs and experience. Medical anthropology emphasizes the importance of the beliefs of the individual and the culture. AIB forms an alternative envelope for the DSM -IV disorders and does not obstruct the proposal that cognitive factors are of etiological importance.

Management Recommendations

1. The anthropologists inform us there are at least two views of clinical reality (the patient's and the medical view) and that the best outcome is achieved when the patient and doctor can discuss their respective belief systems and come to a shared view of clinical reality. This approach is recommended.
2. The evidence for information-processing deficits of those presenting with somatization suggests that information should be presented in an understandable form and repeated frequently.
3. Present at all times as caring, confident, firm and approachable (within agreed limits).
4. After appropriate investigation, inform the patient that no further investigations are indicated, at this time. Investigations are expensive, and when somatization is present, they are unhelpful. If one investigates a somatically healthy individual long enough minor "abnormalities" will eventually be detected, which are not clinically significant, and which are confusing to the clinician and the patient. Also, if one investigates any patient long enough, eventually something will go wrong, a puncture site will become infected, the patient will fall off the X-ray table, a nurse will trip over a lead, there will be an anaphylactic response. Such events greatly complicate care.
5. Limit the number of number of invasive treatments (for similar reasons to 4).

6. Limit the number of doctors consulted. This is the only way to limit the investigations and invasive treatments, and number of explanations provided. Continue to be involved on condition that the patient does not go outside the agreed team. An interested general practitioner is essential.
7. Limit the time spent with the patient. Do not present this as punitive. Rather, discuss the fact that the patient's needs can best be met by regularly scheduled time-defined appointments. Point out that you are prepared to help, but that this is only possible if meetings are regularized. Negotiate a sensible protocol to be followed in the case of crises.
8. The patient has the right to care. Attention may be according to a time schedule, but should not be contingent on the patient hiding concerns and distress.
9. Limit the amount of medication. Benzodiazepines, stimulants and analgesics should be strenuously limited. These patients do experience distress and the use of antidepressants and mood stabilizers have a role. Antipsychotic medication has a place in highly aroused individuals or where psychosis is observed or suspected.
10. Diagnose and adequately treat comorbid psychiatric disorders. Be alert for depression and anxiety. Personality disorder will make management more difficult.
11. Conversion disorder is a special case as here there is usually loss of function. While there is no physical explanatory lesion, treatment with physiotherapy allows the patient to recover with dignity.
12. Encourage return to normal activities. Encourage hobbies, exercise, education and cultural pursuits – these will distract the patient from his/her body, stretch and strengthen the body and assist the return to normal function. Reward attempts at activities with praise.
13. Educate and involve the family in management.
14. Understand the need to repeat the reassurance, encouragement of activities and conditions of care (the limits).

APPENDIX – DSM-IV diagnostic criteria

Somatization disorder

- A. A history of physical complaints beginning before the age of 30 years that occur over a period of several years and result in treatment being sought or significant impairment in social, occupational, or other important areas of functioning.
- B. Each of the following criteria must have been met, with individual symptoms occurring at any time during the course of the disturbance:
 - (1) *four pain symptoms*: a history of pain related to at least four different sites or functions (e.g., head, abdomen, back, joints, during sex, etc.)

- (2) *two gastrointestinal symptoms*: a history of at least two GI symptoms other than pain (e.g., nausea, bloating, vomiting, diarrhoea, etc.)
 - (3) *one sexual symptom*: a history of at least one sexual or reproductive symptom other than pain (e.g., sexual indifference, erectile or ejaculatory dysfunction, irregular menses, excessive menses, etc.)
 - (4) *one pseudo neurological symptom*: a history of at least one symptom or deficit suggesting a neurological condition not limited to pain (conversion symptoms such as impaired coordination or balance, paralysis, difficulty swallowing, urinary retention, seizure etc.)
- C. Either (1) or (2)
- (1) after investigation, criterion B cannot be fully explained by known general medical condition or substance use
 - (2) when there is a related general medical condition, the physical complaints or impairment are in excess of what would be expected from the history, examination and special investigations.
- D. The symptoms are not intentionally produced or feigned (as in Factitious Disorder or Malingering).

Conversion disorder

- A. One or more symptoms or deficits affecting voluntary motor or sensory function that suggest a neurological or other general medical condition.
- B. Psychological factors are judged to be associated with the symptom or deficit because the initiation or exacerbation of symptom or deficit is preceded by conflicts or other stressors.
- C. The symptom or deficit is not intentionally produced or feigned (as in Factitious Disorder or Malingering).
- D. The symptom or deficit cannot, after investigation, be fully explained by a general medical condition, substance use or as a culturally sanctioned behaviour or experience.
- E. The symptom or deficit causes clinically significant distress or impairment.
- F. The symptom or deficit is not limited to pain or sexual function, and does not occur exclusively during the course of Somatization Disorder.

Pain Disorder

- A. Pain in one or more anatomical sites is the predominant focus of the clinical presentation and is of sufficient severity to warrant clinical attention.
- B. The pain causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- C. Psychological factors are judged to have an important role in the onset, severity, exacerbation, or maintenance of the pain.
- D. The symptom deficit is not intentionally produced or feigned.
- E. The pain is not better accounted for by Mood, Anxiety or Psychotic Disorder.

Hypochondriasis

- A. Preoccupation with fears of having, or the idea that one has, a serious disease based on the person's misinterpretation of bodily symptoms.
- B. The preoccupation persists despite medical evaluation and reassurance.
- C. The belief is Criterion A is not delusional in intensity (as in Delusional Disorder, Somatic Type) and is not restricted to a circumscribed concern about appearance (as in Body Dysmorphic Disorder).
- D. The preoccupation causes clinically significant distress or impairment.
- E. The duration of the disturbance is at least 6 months.

Body Dysmorphic Disorder

- A. Preoccupation with an imagined defect in appearance. If a slight physical abnormality is present, the person's concern is markedly excessive.
- B. The preoccupation causes clinically significant distress or impairment.

References

- Aigner M, Back M. Clinical utility of DSM-IV pain disorder. *Comprehensive Psychiatry* 1999, 40, 353-357.
- American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 4th ed. Washington DC. American Psychiatric Association, 1994.
- Apley J. *The child with abnormal pains*. Blackwell, Oxford, 1975.
- Bayer T, Coverdale J, Chiang E, Bangs M. The role of prior pain experience and expectancy in psychologically and physically induced pain. *Pain* 1998, 74, 327 -331.
- Crimlisk H, Bhatia K, Cope H. Slater revised: 6-year follow-up of patients with medically unexplained motor symptoms. *British Medical Journal* 1998; 316:582 -586.
- Curran D, Partridge M. *Psychological Medicine*, 6th Ed, E & S Livingstone, Edinburgh.
- Egan K, Beston R. Response to symptoms in health low utilisers of the health care system. *Journal of Psychosomatic Research* 1978, 31, 11 -21.
- EMGO. Four-Dimensional Symptom Questionnaire (4DSQ). 2000 (<http://www.emgo.nl/researchtools/4dsq.asp>).
- Engel G. The need for a new medical model: a challenge for biomedicine. *Science* 1977, 196, 129-136.
- Ewald H, Rogne M, Ewald K, Fink P. Somatization in patients newly admitted to a neurological department. *Acta Psychiatrica Scandinavica* 1994; 89:174 -179.
- Ferrari R and Russell A. Epidemiology of whiplash: an international dilemma. *Annals of the Rheumatic Diseases* 1999, 58, 1-5.
- Flor-Henry P, Fromm-Auch D, Tapper M, Schopflocher D. A neuropsychological study of the stable syndrome of hysteria. *Biological Psychiatry* 1981, 16, 687 -626.
- Garcia-Campayo J, Larrubia J, Lobo A, Perez-Echeverria M, Campos R. Attribution in somatizers: stability and relationship to outcome at 1-year follow-up. *Acta Psychiatrica Scandinavica* 1997, 95, 433 -438.

- Gentry W, Shows W, Thomas M. Chronic low back pain: a psychological profile. *Psychosomatics* 1974, 15, 174-177.
- Janca A. Rethinking somatoform disorders. *Current Opinion in Psychiatry* 2005; 18:65-71.
- Katon W, Ries R, Kleinman A. The prevalence of somatization in primary care. *Comprehensive Psychiatry* 1984, 25, 208-215.
- Kenyon f. Hypochondriacal states. *British Journal of Psychiatry* 1976, 129, 1-14.
- King F. Attribution theory and the health belief model. In: Hewstone M, ed. *Attribution theory: social and functional extensions*. Basil Blackwell, Oxford, 1983, 170-186.
- Kleinman A, Eisenberg L, Good B. Clinical lessons from anthropologic and cross-cultural research. *Annals of Internal Medicine* 1978, 88, 251-258.
- Lipowski Z. Somatization: the concept and its clinical applications. *American Journal of Psychiatry* 1988, 145, 1358-1368.
- Ludwig A. Hysteria: a neurobiological theory. *Archives of General Psychiatry* 1972, 27, 771-786.
- Mace C, Trimble M. ten year outcome of conversion disorder. *British Journal of Psychiatry* 1996; 169:282-288.
- MacLeod A, Haynes C, Sensky T. Attributions about common body sensations: their associations with hypochondriasis and anxiety. *Psychological Medicine* 1998, 28, 225-228.
- Marsden D. Hysteria – a neurologist's view. *Psychological Medicine* 1986; 16:277 - 288.
- Mechanic D. *Medical Sociology*. Free Press, New York, 1968.
- Parsons T. *Social Structure and Personality*. Collier-Macmillan: London, 1964.
- Pilowsky I. *Abnormal Illness Behaviour*. John Wiley & Sons Ltd. Chichester, 1997.
- Pilowsky I. Abnormal illness behaviour. *British Journal of Medical Psychology* 1969, 42, 347-351.
- Rief W, Hiller W, Margraf J. Cognitive aspects of hypochondriasis and the somatization syndrome. *Journal of Abnormal Psychology* 1998, 107, 587-595.
- Rief W, Nanke A. Somatization disorder from a cognitive-psychobiological perspective. *Current Opinion in Psychiatry* 1999, 12, 733-738.
- Robins J, Kirmayer L. Attributions of common somatic symptoms. *Psychological Medicine* 1991, 21, 1029-1045.
- Schalling D, Cronholm B, Asberg M, Espmark S. Rating of psychiatric and somatic anxiety incidents – interrater reliability and relations to personality variables. *Acta Psychiatrica Scandinavica* 1973, 49, 353-368.
- Shapiro D. *Neurotic Styles*. New York. Basic Books. 1965.
- Sifneos P. Alexithymia: past and present. *American Journal of Psychiatry* 1996, 153 (7 Suppl), 137-142.
- Stimson G. Obeying the doctor's orders. *Social Science Medicine* 1974, 8, 97-104.
- Terluin B, van Marwijk H, Ader H, de Vet H, Penninx B, Hermens M, van Boeijen C, van Balkom J, van der Klink J, Stalman W. The Four-Dimensional Symptom Questionnaire (4DSQ): a validation study of a multidimensional self-report questionnaire to assess distress, depression, anxiety and somatization. *BMC Psychiatry* 2006: <http://www.biomedcentral.com/1471-244X/6/34>.
- Trimble M. *Post-traumatic neurosis: from railway spine to the whiplash*. Wiley, Chichester, 1981.
- Vlaeyen J, Linton S. Fear-avoidance and its consequences in chronic musculoskeletal pain: a state of the art. *Pain* 2000, 85, 317-332.

Von Korff M, Gruman J, Schaefer J, Curray S, Wagner E. Collaborative management of chronic illness. *Annals of Internal Medicine* 1997, 127, 1097-1102.

Walker S, Cousins M. Complex regional pain syndromes: including "reflex sympathetic dystrophy" and "causalgia". *Anaesthesia and Intensive Care* 1997, 25, 113-125.

Wexler N. Culture and mental illness: a social labelling perspective. *Journal of Nervous and Mental Diseases* 1974, 159, 379-395.