

EDITORIAL

Somatic distress syndromes in later life: the need for paradigm change

Somatic distress syndromes, which include somatoform disorders and syndromes of chronic fatigue such as neurasthenia but not somatic presentations of anxiety and depression, are one of the common expressions of distress in primary care (Ormel *et al.* 1994) and general hospital settings (Hemert *et al.* 1993). They are of considerable importance cross-culturally (Ono *et al.* 1999), and often lie at the interface of psychiatry and medicine (Hickie, 1999). They are associated with significant disability (Ormel *et al.* 1994; Andrews, 2000) and health-care utilization (Escobar *et al.* 1991).

Old-age psychiatry arose in response to the epidemiological imperative of dementia (Kay *et al.* 1964). While late-onset schizophrenia and depression have been the subject of research interest since, the neurotic disorders, in particular somatoform disorders, have tended to be relatively neglected (Jorm, 1998). The contention that preoccupation with body function is characteristic of older age has been accepted on the basis of received wisdom (Pitt, 1982) and limited research on hypochondriacal symptoms in late life depression (Brown *et al.* 1984). Conceptual confusion about the somatic distress syndromes in general (Hickie *et al.* 1998; Wessely *et al.* 1998; Jablensky, 1999) may have also inhibited further exploration of this area.

However, the study of somatoform disorders in older people would seem important for a number of reasons. People aged 65 years and over account for up to 25% of primary care consultations (Commonwealth Department of Health and Family Services, 1996). The presence of medical illness is a risk factor for somatic distress, a fact which has tended to be overlooked (Lipowski, 1988). It would also complement the preliminary literature, which has suggested a decline in vulnerability to affective and anxiety disorders with age (Flint, 1994; Henderson, 1994; Krasucki *et al.* 1998; Jorm, 2000), and thereby clarify how neurotic disorders may vary in presentation with age.

Therefore, the issues pertinent to this paper include whether the traditional conceptualization of somatic distress syndromes are appropriate to older people and those with medical illness, whether prevalence rates vary with age and medical illness, and if so, possible explanations for any differences.

Medline and PsycLit databases were studied for the years 1989 to 1999. We reviewed community and primary care studies that reported rates of at least one DSM or ICD somatoform disorder or relevant somatic distress syndrome in adults across the age span and included subjects aged at least 60 years. Studies of somatic distress syndromes in medical settings were also used. Other key terms, such as somatization, were searched. A secondary manual search of references from retrieved papers was then made.

CURRENT CONCEPTUALIZATION

The current conceptualization of somatic distress syndromes requires the exclusion of significant medical pathology (WHO, 1992; APA, 1994). This has impeded their study in the context of chronic medical illness in general, and particularly in older people. However, this reductionistic paradigm is alien to non-Western cultures (Fabrega, 1991; Jablensky, 1999), and the frequency of 'medically unexplained symptoms' varies according to local clinical practice (Kisely *et al.* 1997).

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There are a number of examples of the inadequacy of dichotomous illness models and the subsequent need for multidimensional models of illness causation. Chronic pain states and depression may be better understood as reciprocal processes (VonKorff & Simon, 1996) rather than an arbitrary notion of psychogenic pain. Even in diseases that have been latterly associated with a single pathogen, such as *Helicobacter pylori* in the pathogenesis of peptic ulcer, psychological mediators are still required to explain symptom experience (Levenstein, 1998). Similarly, research in chronic fatigue syndrome (CFS) and irritable bowel syndrome has shown the need for more sophisticated aetiological models that integrate genetic vulnerability, central and peripheral pathology, and exclude the confounding effects of associated psychological changes and illness chronicity (Drossman, 1998; Hotopf & Wessely, 1999).

The Western emphasis on biomedical investigation and physical therapies, which may be more pronounced in older people, is a risk factor for persistent somatic distress (Barsky *et al.* 1991a). In those with pre-morbid high health anxiety, reassurance after a normal gastroscopy did not reduce distress in the short- or long-term, so that medical consultation may have reinforced reassurance seeking behaviour (Lucock *et al.* 1997). A long delay between the onset of chest pain and negative cardiac investigation may have precipitated persistent distress, as patients were likely to have received a provisional diagnosis of cardiac disease and drug prescription in the intervening period (Mayou *et al.* 1994).

SOMATIC DISTRESS SYNDROMES ACROSS THE AGE SPAN

Studies, which met our inclusion criteria, reported rates for only three relevant disorders across the age span. These were somatization disorder, syndromes of chronic fatigue (termed neurasthenia by ICD-10 and undifferentiated somatoform disorder by DSM-IV) and hypochondriasis. Unfortunately, different diagnostic criteria have been reported for the same entity, although these represent differences in symptom duration (for instance neurasthenia *versus* persistent fatigue) and number (somatization disorder *versus* abridged somatization), rather than differences in the underlying construct. The variable prevalence rates are a reflection of this, although our main interest lies in differences by age.

One-month prevalence rates for DSM-III somatization disorder varied from 0 to 0.1% but were similar across age groups, including those 65 years and over, in the US Epidemiologic Catchment Area (ECA) study and its Canadian counterpart (Bland *et al.* 1988; Regier *et al.* 1988). The finding that lifetime rates declined with age in the ECA study is counter-intuitive (Robins *et al.* 1984). As illness onset was limited to before the age of 30, the lifetime rate of somatization disorder should have risen from the first (18 to 24 years) to the second (25 to 44 years) age band, and stabilized thereafter as all subjects would have passed through the age of risk.

The ECA study's overall low prevalence rate was a direct consequence of DSM-III's conceptualization of somatization disorder as a severe, lifetime illness. The somatic symptoms used by the Diagnostic Interview Schedule (DIS) (Robins *et al.* 1981) have been criticized on the grounds that unusual pseudo-neurological, genitourinary and gynaecological symptoms were emphasized over more common gastrointestinal and musculoskeletal ones (Hickie *et al.* 2000a). The DIS also included items, such as blindness, blurred vision and deafness, which may have been biased in the elderly (Henderson, 1999), although there was a non-linear relationship between age and the number of somatic symptoms (Simon & VonKorff, 1991).

The ICD-10 notion of somatization disorder as a chronic, but not lifetime, poly-symptomatic illness is similar to, but less restrictive than, the DSM criteria. This definition yielded a rate of 2.7% in the World Health Organization (WHO) multi-national study of primary care (Goldberg & Lecrubier, 1995). The relationship between case prevalence and age varied significantly across centres; the commonest pattern was an increase from the 15 to 24-year age band to the 25 to 44-year age band, when the rate peaked, with decline to the 45 to 65-year group (Üstün & Sartorius, 1995). Less severe versions of somatization disorder, including multi-somatoform disorder and abridged somatization, have been used to emphasize its dimensional nature (Kroenke *et al.* 1997;

Escobar *et al.* 1998). These syndromes were more common in primary care settings – for instance, the prevalence of abridged somatization was 22% – and prevalence seemed to be consistent across age or more common in younger subjects (Escobar *et al.* 1998; Kroenke & Spitzer, 1998).

The 1-month prevalence rate of neurasthenia peaked in the 45 to 54-years age band and was lowest in the over 65-year age group in the Australian National Mental Health and Wellbeing Survey (Australian Bureau of Statistics, 1998). In the WHO study, a tendency for the rate of neurasthenia to decline in successive age bands was seen (Üstün & Sartorius, 1995). In an Australian primary care sample, there was no overall relationship between mean fatigue score and age (Hickie *et al.* 1996). Further analysis of this data showed that the proportion of persistent fatigue cases in those aged 60 years and over was 22%, which was similar to that in younger age bands.

The prevalence of hypochondriasis in the WHO study was 0.8%, although use of an abridged version increased the rate to 2.2% (Gureje *et al.* 1997). Patients with abridged hypochondriasis were significantly older, although this pattern was found in only three of the 15 sites.

SOMATIC DISTRESS SYNDROMES IN MEDICAL SETTINGS

Rates of somatoform disorders reported in medical settings have been higher than in community and primary care settings. For instance, rates for somatization disorder of 8–9% (deGruy *et al.* 1987; Hemert *et al.* 1993) and for hypochondriasis of 5–15% have been found in general medical clinics (Barsky *et al.* 1991a; Hemert *et al.* 1993; Noyes *et al.* 1993). The only relevant study to compare prevalence rates by age found hypochondriasis in 2.7% of those under 65 years and 1.6% in people aged 65 years and over (Barsky *et al.* 1991b).

However, studies have varied in their conclusions about the relationship between medical illness and somatic distress. That some have noted no difference in the level of *current* medical morbidity between patients with hypochondriasis and those without (Barsky *et al.* 1991a; Noyes *et al.* 1993; Robbins & Kirmayer, 1996) may reflect the essentially circular nature of a disorder which is only diagnosed if health anxiety is rated as disproportionate to the underlying medical condition. Also, a reduction in the intensity of health anxiety has been noted with the acquisition of a major medical diagnosis, which may legitimize and validate the patient's distress (Robbins & Kirmayer, 1996). However, persistent hypochondriasis was associated with more serious lifetime medical problems, which may leave cognitive schemas of physical vulnerability (Robbins & Kirmayer, 1996).

POSSIBLE REASONS FOR DECLINE IN RATES OF SOMATIC DISTRESS SYNDROMES WITH AGE

Any conclusion about the rate of somatic distress syndromes in older age can only be very tentative. It can be seen that there is a paucity of studies that have examined such disorders across the adult life cycle and specifically in older people. Of these, most studies were limited to older people up to the age of 65 years so that findings are not necessarily applicable to very old people in the eighth and ninth decades of life when physical disease becomes more common. All of the studies reviewed included few, if any, institutionalized patients or included only ambulatory primary care patients who would also be expected to suffer lesser degrees of medical disease. All were cross-sectional and therefore prone to cohort bias; true differences resulting from age can only be measured by longitudinal studies. Also the range of somatic distress syndromes studied was limited.

What is clear is that the key somatoform disorders as currently defined are rare in all age groups. Broader concepts, such as abridged somatization, are much commoner in primary care samples and may persist into later life at the same rate. For instance, persistent fatigue syndrome may occur in around one-fifth of people 60 years and over.

That somatic distress syndromes do not necessarily increase with age seems counterintuitive, so why might this be so? The first possibility is that the apparent decline with age is genuine. Neuroticism has been found to be a general vulnerability factor for negative somatic experience (Costa & McCrae, 1985; Andrews, 1996), and a linear relationship between mean neuroticism score

and somatic complaints has been demonstrated in men across the adult life span (Costa & McCrae, 1980). Therefore, the trend towards lower mean neuroticism score with age (Huppert & Whittington, 1993; Henderson *et al.* 1998; Jorm *et al.* 1999) may be associated with a reduction in somatic distress.

Older people have tended to report reduced emotional expressivity (Gross *et al.* 1997). Age-related changes in neurotransmitter levels implicated in anxiety, such as noradrenaline, may lessen the autonomic response to threat in late life (Lohr & Jeste, 1988; Sheikh *et al.* 1991). This may explain the less prominent physiological arousal with age following the induction of emotional distress (Levinson *et al.* 1991).

There may be a tendency for older people to formulate non-pathological cognitive attributions for somatic symptoms. 'Health concern' does not seem to increase with age (Costa *et al.* 1987). The elderly are no more likely than younger people to seek professional help for 'serious' disorders, and are as likely to 'under-utilize' treatment that should have been sought (Haug, 1981). Also older people are more likely to attribute non-specific symptoms such as weakness and tiredness to age (Leventhal & Prohaska, 1986; Lawrie, 1993; Edwardson *et al.* 1995; Haug *et al.* 1998). This may be a cohort effect from the lower expectations of health in a generation exposed to greater illness and death. Therefore, older people may be less likely to present somatic symptoms in medical care.

Finally, it is unlikely that the lower rate of somatoform disorders in later life is explained by increased mortality at younger ages. The mortality rates associated with conversion disorder, somatization disorder and neuroticism are not excessive in early adult life (Coryell, 1981; Harris & Barraclough, 1998; Jorm, 2000).

The second broad possibility is that the lower rate of somatic distress syndromes in older people is due to artefactual reasons. The greater frequency of such disorders in medical settings suggests that the current paradigm of diagnosis by exclusion of medical illness is an important factor. Furthermore, diagnostic criteria for the somatoform disorders may discriminate against the elderly in particular. DSM-IV somatization disorder is a lifetime disorder of early onset, whereas inconsistencies in the recall of lifetime somatic symptoms may underestimate case rates in older people (Robins *et al.* 1984). In the WHO study, 60% of lifetime somatic symptoms detected at baseline was not detected 12 months later (Simon & Gureje, 1999).

Another general explanation is that misattribution of somatic symptoms to physical disease may result in lower rates of all mental disorders in older people. While no studies have examined this possibility in somatoform disorders, relevant data does exist for the affective and anxiety disorders. For instance, it has been proposed that the rate of late-life depression was underestimated in the ECA study because older people were more likely to attribute somatic symptoms to physical disease or medication rather than to psychological illness (Knauper & Wittchen, 1994). However, the average number of somatic symptoms rated at least partly psychogenic did not vary significantly across the life cycle in this study (Blazer, 1989). Neither did recoding somatic symptoms of depression, from a physical explanation to a psychological one, lead to a disproportionate rise in the rate of depression in those aged over 50 years (Heithoff, 1995). Similarly, rates of panic disorder tend to be low in older people and lower with age, irrespective of whether somatic symptoms were explained by medical illness or not (Regier *et al.* 1988; Lindesay *et al.* 1989; Manela *et al.* 1996). A variety of somatic anxiety items have been shown to be either less common or as common with advancing age (Henderson *et al.* 1998).

THE WAY FORWARD

Given that a not insignificant proportion of neurotic disorders in later life may be somatoform in nature, with relevance for primary care as well as specialist services, old age psychiatry needs to develop leadership with other appropriate professional groups in the study of somatic distress disorders. Clarification of the significant general conceptual and diagnostic problems awaits us. These include the need to make positive diagnoses of somatic distress syndromes rather than ones of exclusion, the use of case criteria more relevant to primary care in particular (Hickie, 1999), and

the standardization of diagnostic categories such as syndromes of chronic fatigue and somatization. Indeed, current conceptualizations are likely to become outdated with increasingly sophisticated neurocognitive and neurophysiological research into the phenomenology of body consciousness (Jablensky, 1999).

The formal investigation of the nature, prevalence, and disability correlates of somatic distress syndromes in older adults is also needed to test our hypothesis that such syndromes may make a significant contribution to mental distress and health care costs in old age. Objective rating scales of somatic distress should be age appropriate (Henderson, 1999). Study design should be longitudinal, include people 75 years and over, and examine the impact of changing medical status. Finally, the exclusion of older people in psychological and pharmacological treatment trials of somatic distress syndromes (Warwick *et al.* 1996; Clark *et al.* 1998; Hickie *et al.* 2000b) needs to be rectified so that appropriate management suggestions can be made.

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REFERENCES

- Andrews, G. (1996). Comorbidity and the general neurotic syndrome. *British Journal of Psychiatry* **168** (suppl. 30), 76–84.
- Andrews, G. (2000). Meeting the unmet need with disease management. In *Unmet Need in Psychiatry. Problems, Resources, Responses* (ed. G. Andrews and S. Henderson), pp. 11–36. Cambridge University Press: Cambridge.
- American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders, 4th edn.* APA: Washington, DC.
- Australian Bureau of Statistics (1998). *Mental Health and Wellbeing. Profile of Adults, Australia, 1997.* Australian Bureau of Statistics: Canberra.
- Barsky, A. J., Wyshak, G., Latham, K. S. & Klerman, G. L. (1991a). The relationship between hypochondriasis and medical illness. *Archives of Internal Medicine* **151**, 84–88.
- Barsky, A. J., Frank, C., Cleary, P., Wyshak, G. & Klerman, G. (1991b). The relation between hypochondriasis and age. *American Journal of Psychiatry* **148**, 923–928.
- Bland, R., Newman, S. & Orn, H. (1988). Prevalence of psychiatric disorders in the elderly in Edmonton. *Acta Psychiatrica Scandinavica* **77** (suppl. 338), 57–63.
- Blazer, D. (1989). The epidemiology of depression in late life. *Journal of Geriatric Psychiatry* **22**, 35–52.
- Brown, R., Sweeney, J., Loutsch, E., Kocsis, J. & Frances, A. (1984). Involutional melancholia revisited. *American Journal of Psychiatry* **141**, 24–28.
- Clark, D., Salkovskis, P., Hackmann, A., Wells, A., Fennell, M., Ludgate, J., Ahmad, S., Richards, H. C. & Gelder, M. (1998). Two psychological treatments for hypochondriasis. A randomised controlled trial. *British Journal of Psychiatry* **173**, 218–225.
- Commonwealth Department of Health and Family Services, General Practice Branch (1996). *General Practice in Australia: 1996.* Commonwealth of Australia: Canberra.
- Coryell, W. (1981). Diagnosis-specific mortality: primary unipolar depression and Briquet's syndrome. *Archives of General Psychiatry* **38**, 939–942.
- Costa, P. & McCrae, R. (1980). Somatic complaints in males as a function of age and neuroticism: a longitudinal analysis. *Journal of Behavioral Medicine* **3**, 245–257.
- Costa, P. & McCrae, R. (1985). Hypochondriasis, neuroticism and ageing. When are somatic symptoms unfounded? *American Psychologist* **40**, 19–28.
- Costa, P., Zonderman, A., McCrae, R., Cornoni-Huntley, J., Locke, B. & Barbano, H. (1987). Longitudinal analyses of psychological well-being in a national sample: stability of mean levels. *Journal of Gerontology* **42**, 50–55.
- de Gruy, F., Crider, J., Hashimi, D., Dickinson, P., Mullins, H. & Troncale, J. (1987). Somatization disorder in a university hospital. *Journal of Family Practice* **25**, 579–584.
- Drossman, D. (1998). Gastrointestinal illness and the biopsychosocial model. *Psychosomatic Medicine* **60**, 258–267.
- Edwardson, S., Dean, K. & Brauer, D. (1995). Symptom consultation in lay networks. *Journal of Aging and Health* **7**, 402–416.
- Escobar, J., Swartz, M., Rubio-Stipec, M. & Manu, P. (1991). Medically unexplained symptoms: distribution, risk factors and comorbidity. In *Current Concepts of Somatization. Research and Clinical Perspectives* (ed. L. Kirmayer and J. Robbins), pp. 63–78. American Psychiatric Press Inc: Washington, DC.
- Escobar, J., Gara, M., Silver, R. C., Waitzkin, H., Holman, A. & Compton, W. (1998). Somatisation disorder in primary care. *British Journal of Psychiatry* **173**, 262–266.
- Fabrega, H. (1991). Somatization in historical and cultural perspective. In *Current Concepts of Somatization. Research and Clinical Perspectives* (ed. L. Kirmayer and J. Robbins), pp. 181–200. American Psychiatric Press, Inc: Washington, DC.
- Flint, A. (1994). Epidemiology and comorbidity of anxiety disorders in the elderly. *American Journal of Psychiatry* **151**, 640–649.
- Goldberg, D. & Lecrubier, Y. (1995). Form and frequency of mental disorders across centres. In *Mental Illness in General Health Care. An International Study* (ed. T. Üstün and N. Sartorius), pp. 323–334. John Wiley and Sons: Chichester.
- Gross, J. J., Carstensen, L. L., Pasupathi, M., Tsai, J., Skorpén, C. G. & Hsu, A. Y. C. (1997). Emotion and aging: experience, expression and control. *Psychology and Aging* **12**, 590–599.
- Gureje, O., Üstün, T. & Simon, G. (1997). The syndrome of hypochondriasis: a cross-national survey in primary care. *Psychological Medicine* **27**, 1001–1010.
- Harris, E. & Barraclough, B. (1998). Excess mortality of mental disorders. *British Journal of Psychiatry* **173**, 11–53.
- Haug, M. (1981). Age and medical care utilization patterns. *Journal of Gerontology* **36**, 103–107.
- Haug, M., Musil, C., Warner, C. & Morris, D. (1998). Interpreting bodily changes as illness: a longitudinal study of older adults. *Social Science Medicine* **46**, 1553–1567.
- Heithoff, K. (1995). Does the ECA underestimate the prevalence of late-life depression? *Journal of American Geriatrics Society* **43**, 2–6.
- Hemert, A. V., Hengeveld, M., Bolk, J., Rooijmans, H. & Vanderbroucke, J. (1993). Psychiatric disorder in relation to medical illness among patients of a general medical out-patient clinic. *Psychological Medicine* **23**, 167–173.
- Henderson, A. (1994). Does ageing protect against depression? *Social Psychiatry and Psychiatric Epidemiology* **29**, 108–109.
- Henderson, A. (1999). Somatization in the elderly. In *Somatoform Disorders. A Worldwide Perspective* (ed. Y. Ono, A. Janca, M. Asai and N. Sartorius), pp. 57–64. Springer-Verlag: Tokyo.
- Henderson, A., Jorm, A., Korten, A., Jacomb, P., Christensen, H. & Rodgers, B. (1998). Symptoms of depression and anxiety during adult life: evidence for a decline in prevalence with age. *Psychological Medicine* **28**, 1321–1328.

- Hickie, I. (1999). Primary care psychiatry is not specialist psychiatry in general practice. *Medical Journal of Australia* **170**, 171–173.
- Hickie, I., Hooker, A., Hadzi-Pavlovic, D., Bennett, B., Wilson, A. & Lloyd, A. (1996). Fatigue in selected primary care settings: sociodemographic and illness correlates. *Medical Journal of Australia* **164**, 585–588.
- Hickie, I., Scott, E. & Davenport, T. (1998). Somatic distress: developing more integrated concepts. *Current Opinion in Psychiatry* **11**, 153–158.
- Hickie, I., Kirk, K. & Martin, N. (1999). Unique genetic and environmental determinants of prolonged fatigue: a twin study. *Psychological Medicine* **29**, 259–268.
- Hickie, I., Pols, R., Koschera A. & Davenport, T. (2000a). Why are somatoform disorders so poorly recognised and treated? In *Unmet Need in Psychiatry. Problems, Resources, Responses* (ed. G. Andrews and S. Henderson), pp. 309–323. Cambridge University Press: Cambridge.
- Hickie, I., Wilson, A. J., Wright, J. M., Bennett, B. K., Wakefield, D. & Lloyd, A. (2000b). A randomised, double-blind, placebo-controlled trial of moclobemide in patients with chronic fatigue syndrome. *Journal of Clinical Psychiatry* (in the press).
- Hotopf, M. & Wessely, S. (1999). Chronic fatigue syndrome – mapping the interior. *Psychological Medicine* **29**, 255–258.
- Huppert, F. & Whittington, J. (1993). Longitudinal changes in mental state and personality measures. In *The Health and Lifestyle Survey: Seven Years On* (ed. B. Cox, F. Huppert and M. Whitchelow), pp. 133–154. Aldershot: Dartmouth.
- Jablensky, A. (1999). The concept of somatoform disorders: a comment on the mind-body problem in psychiatry. In *Somatoform Disorders. A Worldwide Perspective* (ed. Y. Ono, A. Janca, M. Asai and N. Sartorius), pp. 3–10. Springer Verlag: Tokyo.
- Jorm, A. (1998). Epidemiology of mental disorders in old age. *Current Opinion in Psychiatry* **11**, 405–409.
- Jorm, A. (2000). Does old age reduce the risk of anxiety and depression? A review of epidemiological studies across the adult life span. *Psychological Medicine* **30**, 11–22.
- Jorm, A., Christensen, H., Henderson, A., Jacomb, P., Korten, A. & Rogers, B. (1999). Using the BIS/BAS scales to measure behavioural inhibition and behavioural activation: factor structure, validity and norms in a large community sample. *Personality and Individual Differences* **26**, 49–58.
- Kay, D. W. K., Beamish, P. & Roth, M. (1964). Old age mental disorders in Newcastle upon Tyne. Part I: a study of prevalence. *British Journal of Psychiatry* **110**, 146–178.
- Kisely, S., Goldberg, D. & Simon, G. (1997). A comparison between somatic symptoms with and without clear organic cause: results of an international study. *Psychological Medicine* **27**, 1011–1019.
- Knauper, B. & Wittchen, H. (1994). Diagnosing major depression in the elderly. *Journal Psychiatric Research* **28**, 147–164.
- Krasucki, C., Howard, R. & Mann, A. (1998). The relationship between anxiety disorders and age. *International Journal of Geriatric Psychiatry* **13**, 79–99.
- Kroenke, K. & Spitzer, R. (1998). Gender differences in the reporting of physical and somatoform symptoms. *Psychosomatic Medicine* **60**, 150–155.
- Kroenke, K., Spitzer, R. L., deGruy, F. V., Hahn, S. R., Linzer, M., Williams, J. B. W., Brody, D. & Davies, M. (1997). Multi-somatoform disorder. An alternative to undifferentiated somatoform disorder for the somatizing patient in primary care. *Archives of General Psychiatry* **54**, 352–358.
- Lawrie, S. (1993). Chronic Fatigue in the Community and Its Psychiatric Associations. Ph.D. thesis, University of Edinburgh.
- Levenstein, S. (1998). Stress and peptic ulcer: life beyond helicobacter. *British Medical Journal* **316**, 538–541.
- Leventhal, E. & Prohaska, T. (1986). Age, symptom interpretation, and health behaviour. *Journal of American Geriatric Society* **34**, 185–191.
- Levinson, R., Carstensen, L., Friesen, W. & Ekman, P. (1991). Emotion, physiology and emotional expression in old age. *Psychology and Aging* **6**, 28–35.
- Lindesay, J., Briggs, K. & Murphy, E. (1989). The Guy's/AgeConcern survey. Prevalence rates of cognitive impairment, depression, anxiety in an urban elderly community. *British Journal of Psychiatry* **155**, 317–329.
- Lipowski, Z. (1988). Somatization: the concept and its clinical applications. *American Journal of Psychiatry* **145**, 1358–1368.
- Lohr, J. & Jeste, D. (1988). Locus ceruleus morphometry in aging and schizophrenia. *Acta Psychiatrica Scandinavia* **77**, 689–697.
- Lucock, M., Morley, S., White, C. & Peake, M. (1997). Responses of consecutive patients to reassurance after gastroscopy: results of self-administered questionnaire survey. *British Medical Journal* **315**, 572–575.
- Manela, M., Katona, C. & Livingston, G. (1996). How common are the anxiety disorders in old age? *International Journal of Geriatric Psychiatry* **11**, 65–70.
- Mayou, R., Bryant, B., Forfar, C. & Clark, D. (1994). Non-cardiac chest pain and benign palpitations in the cardiac clinic. *British Heart Journal* **72**, 548–553.
- Noyes, R., Kathol, R., Fisher, M., Phillips, B., Suelzer, M. & Holt, C. (1993). The validity of DSM-III-R hypochondriasis. *Archives of General Psychiatry* **50**, 961–970.
- Ono, Y., Janca, A., Asai, M. & Sartorius, N. (1999). *Somatoform disorders. A Worldwide Perspective*. Springer Verlag: Tokyo.
- Ormel, J., VonKorff, M., Üstün, T., Pini, S., Korten, A. & Oldehinkel, T. (1994). Common mental disorder and disability across cultures. Results from WHO Collaborative Study on Psychological Problems in General Health Care. *Journal of the American Medical Association* **272**, 1741–1748.
- Pitt, B. (1982). *Psychogeriatrics. An Introduction to the Psychiatry of Old Age*. Churchill Livingstone: Edinburgh.
- Regier, D. A., Boyd, J. H., Burke, J. D., Rae, D. S., Myers, J. K., Kramer, M., Robins, L. N., George, L. K., Karno, M. & Locke, B. Z. (1988). One-month prevalence of mental disorders in the United States. Based on five epidemiologic catchment area sites. *Archives General Psychiatry* **45**, 977–986.
- Robins, L., Helzer, J., Croughan, J. & Ratcliff, K. (1981). National Institute of Mental Health Diagnostic Interview Schedule: its history, characteristics and validity. *Archives of General Psychiatry* **38**, 381–389.
- Robins, L., Helzer, J., Weissman, M., Orvaschel, H., Gruenberg, E., Burke, J. D. & Regier, D. A. (1984). Lifetime prevalence of specific psychiatric disorders in three sites. *Archives of General Psychiatry* **41**, 949–958.
- Robbins, J. & Kirmayer, L. (1996). Transient and persistent hypochondriacal worry in primary care. *Psychological Medicine* **26**, 575–590.
- Sheikh, J., King, M. & Barr Taylor, C. (1991). Comparative phenomenology of early-onset versus late-onset panic attacks: a pilot survey. *American Journal of Psychiatry* **148**, 1231–1233.
- Simon, G. & Gureje, O. (1999). Stability of somatization disorder and somatization symptoms among primary care patients. *Archives of General Psychiatry* **56**, 90–95.
- Simon, G. & VonKorff, M. (1991). Somatization and psychiatric disorder in the NIMH Epidemiologic Catchment Area study. *American Journal of Psychiatry* **148**, 1494–1500.
- Üstün, T. & Sartorius, N. (1995). *Mental Illness in General Health Care: An International Study*. John Wiley and Sons: Chichester.
- VonKorff, M. & Simon, G. (1996). The relationship between pain and depression. *British Journal of Psychiatry* **168** (suppl 30), 101–108.
- Warwick, H., Clark, D., Cobb, A. & Salkovskis, P. (1996). A controlled trial of cognitive-behavioural treatment of hypochondriasis. *British Journal of Psychiatry* **169**, 189–195.
- Wessely, S., Hotopf, M. & Sharpe, M. (1998). CFS and psychiatric disorders. In *Chronic Fatigue and Its Syndromes* (ed. S. Wessely, M. Hotopf and M. Sharpe), pp. 221–249. Oxford University Press: New York.
- World Health Organization (1992). *The ICD-10 Classification of Mental and Behavioural Disorders. Clinical Descriptions and Diagnostic Guidelines*. WHO: Geneva.