Somatic symptoms, hypochondriasis and psychological distress: a study of somatisation in Australian general practice

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> Somatization, a tendency to experience and communicate somatic distress in response to psychosocial stress and to seek medical help for it, poses a major medical, social, and economic problem … Its persistent form is especially costly and difficult to prevent and manage.[1]

ABSTRACT

Objective: To measure the prevalence of somatisation (multiple somatic symptoms and hypochondriasis) among Australian general practice attendees, its recognition by general practitioners, and its relationship with symptoms of depression and anxiety.

Design, setting and participants: Self-reported questionnaires completed by 10 507 consecutive patients aged ⩾18 years attending 340 GPs enrolled in a 6-hour national mental health program of continuing professional development who accepted invitations to participate; audit form completed by GPs for each patient during the period March 2004 to December 2006.

Main outcome measures: Somatic symptom severity (measured with the 15-item Patient Health Questionnaire [PHQ-15]); hypochondriasis (measured with the Whiteley Index [Whiteley-7]; depression and anxiety (measured by the Kessler Psychological Distress scale [K10]); prevalence of "somatisers" (defined by medium to severe somatic symptom severity *and* hypochondriasis); GP recognition of somatisation (determined by their responses on audit forms to questions on whether patient's complaints were most likely to have a physical or psychological explanation).

Results: 18.5% of patients were classified as somatisers and 9.5% as probable cases of depression or anxiety. While 29.6% of somatisers had high anxiety or depression scores, 57.9% of people with anxiety or depression were also somatisers. Sex and age asserted significant but weak effects on psychometric scores. GPs identified somatic complaints as "mostly explained by a psychological disturbance" in 25.1% of somatisers.

Conclusions: Somatisation is common in general practice, and more prevalent than depression or anxiety. While a minority of somatisers have significant anxiety and depression, most patients with depression and anxiety have a significant degree of somatisation. Recognition of depression and anxiety can be hindered by a somatic presentation and attribution. On the other hand, managing somatisation does not just involve recognising depression and anxiety, but also dealing with the health anxieties that underpin hypochondriasis.

MJA 2008; 189: 560–564

Somatic symptoms are a frequent presentation of distress in general practice, and up to 30% of common somatic symptoms go undiagnosed.[2] Somatisation comprises the three elements of: (i) unexplained physical symptoms in the context of psychosocial stress; (ii) an attribution of physical illness; and (iii) medical help-seeking. Recent practice has tended to pay particular attention to "medically unexplained symptoms",[3] although there has been encouragement for us to focus less on "symptom count" and more on the psychopathology[4] — the bodily preoccupation and somatic conviction.

Although a useful concept in clinical practice, somatisation has been difficult to operationalise and measure reliably. As a consequence, no major epidemiological study in Australia has included it as an item of interest, so we have no reliable estimate of its extent in the community or in general medical practice.

One of the interesting issues in somatisation is its relationship to depression and anxiety. Psychoanalytical thinking saw somatisation as a "conversion" of emotional stress into somatic distress. In many eastern countries, the diagnosis of depression is not common, while neurasthenia (characterised by predominant fatigue) is a common diagnosis.[5] Studies in Western countries, however, have shown a correlation between somatic complaints and depression or anxiety.[2] Emotional and somatic complaints may be alternate ways that humans show distress.

The aims of this study were to measure the prevalence of somatisation among Australian general practice attendees, and to examine its recognition by general practitioners and its relationship with symptoms of depression and anxiety.

METHODS

GPs enrolled in a 6-hour national mental health program of continuing professional development called Time Efficient Mental Health were invited to participate in the study. Participating GPs were asked to conduct two clinical audits during the period March 2004 to December 2006, in which they completed an audit form for each of 30 consecutive patients aged 18 or more years. Patients who agreed to participate were asked to complete questionnaires measuring physical symptoms, hypochondriasis, depression and anxiety. The audit form completed by GPs was a one-page form completed for each patient. It included specific questions about whether the patient was presenting with physical complaints and, if so, whether the physical complaints could be explained mostly by a physical or psychological disease, illness or injury.

Patient questionnaires sought information on basic demographic details and included the following:

- The ***Patient Health Questionnaire*** (PHQ-15), a 15-item scale that measures somatic symptom severity.[6] It enquires about 15 common somatic symptoms, inviting a response of "not bothered at all", "bothered a little" or "bothered a lot", scored 0–2. The highest possible score for women is 30, and for men is 28 (one item pertains to menstrual problems). The PHQ-15 does not ascertain whether symptoms are medically explained or unexplained, although a high score is strongly associated with physician-rated somatoform disorder symptom counts.[7,8] Total scores in the ranges 0–4, 5–9, 10–14 and 15–30 on the PHQ-15 define

1 Characteristics of the final sample of 10 507 consecutive general practice patients

Characteristic	Value
Mean age (years)*	
Overall	49.2 (SD, 17.6; range, 18–96)
Men	52.2 (SD, 17.4; range, 18–96)
Women	47.9 (SD, 17.5; range, 18–95)
Sex	
Men	3265 (31.1%)
Women	7242 (68.9%)
Education	
Primary	623 (5.9%)
Secondary	4879 (46.4%)
Apprenticeship/ trade qualification	1337 (12.7%)
Undergraduate certificate/diploma	1050 (10.0%)
Undergraduate degree	1298 (12.4%)
Postgraduate qualification	1092 (10.4%)
No response	228 (2.2%)
Employment	
Employed full-time	2998 (28.5%)
Employed part-time	1571 (15.0%)
Self-employed	763 (7.3%)
Home duties	1478 (14.1%)
Studying part-time	141 (1.3%)
Studying full-time	367 (3.5%)
Unemployed	515 (4.9%)
Retired	2546 (24.2%)
No response	128 (1.2%)

* 16 participants did not give their date of birth. ◆

2 Total and dichotomised scores for the sample of 10 507 patients on the Patient Health Questionnaire (PHQ-15), Whiteley Index (Whiteley-7) and the Kessler Psychological Distress Scale (K10)

	Total scores			Dichotomised scores*	
Measure	Mean	SD	Range†	No. below cut-off	No. above cut-off
PHQ-15	7.61	4.93	0–30	7279 (69.3%)	3228 (30.7%)
Whiteley-7	1.8	1.96	0–7	7296 (69.4%)	3211 (30.6%)
K10	18.32	7.3	10–50	9512 (90.5%)	995 (9.5%)

* Cut-offs were: PHQ-15, ⩾ 10; Whiteley-7, ⩾ 3; and K10, ⩾ 30. † The highest possible score for the PHQ-15 was different for men (28) and women (30). ◆

"minimal", "low", "medium" and "high" somatic symptom severity.[6]

- The seven-item version of the ***Whiteley Index*** (Whiteley-7), which measures hypochondriasis (health anxiety, fears of illness and the tendency to make somatic attributions).[9] Each item invites a "yes" or "no" response (scored one and zero, respectively), with people scoring three or more being considered high scorers.[10,11]
- The ***Kessler Psychological Distress Scale*** (K10), which measures psychological distress, and specifically symptoms of depression and anxiety in the previous 30 days. Its 10 questions have response options ranging from "none of the time" to "all of the time" on a five-point Likert-style scale scored 1–5. We used a score of 30 or more to define "probable caseness", this being the cut-off used in the Australian National Survey of Mental Health and Wellbeing.[12] Such a score indicates ten times the population risk for meeting diagnostic criteria for anxiety or depression.[13]

Data screening and analysis

Cases missing more than 20% of the patient-survey data were removed from the sample.[14] GPs performed the audit on two separate occasions, resulting in some patients being included twice: data from repeat visits were removed. Multivariate outliers across the three self-report measures were identified by means of the calculation of Mahalanobis distance and removed from the sample. We ran separate missing value analyses using the multiple imputation method[14] to impute missing values in each of the three measures within the patient survey.

For each of the three psychometric measures (PHQ-15, Whiteley-7, K10), total scores were calculated for each participant, and scale scores examined for effect of age and sex. These scale scores were then dichotomised as per the cut-offs described above, with the cut-off for the PHQ-15 being ⩾ 10. A category of "somatiser" was defined conservatively to include patients with medium to high somatic symptom severity (PHQ-15) *and* high hypochondriasis (Whiteley-7). This new variable was used to explore the relationship with psychological distress (K10 scores), and GPs' recognition of somatisation. This was determined by their responses to two questions on the audit form enquiring whether they felt the physical complaints were "mostly explained by a physical disease/illness/injury" or "mostly explained by a psychological disturbance.", and rated only for patients presenting with a physical complaint.

Differences between groups were examined with χ^2 tests for categorical data and Student's *t* test for dimensional variables. Analysis of covariance (ANCOVA) was used to examine for the effect of sex, with partial eta squared (ηp^2) indicating size of effect. Cohen's kappa (κ)[15] was used to examine the agreement between GPs' audit forms and patient questionnaires on the assessment of somatisation.

Ethics approval

Ethics approval for this study was granted by the Monash University Standing Committee on Ethics in Research Involving Humans.

RESULTS

A total of 340 GPs across Australia agreed to participate, and they saw 15 938 consecutive eligible patients during the audit period. Of these patients, 11 720 (73.5%) completed the patient survey. Most patients (54.2%) had no missing data, and over 90% had less than 10% of data missing. At the item level, no variable had more than 10% of data missing.

Patients removed from the sample of 11 720 numbered 1213, comprising 638 (more than 20% of the patient-survey data missing) plus 137 (repeat visits to GPs) plus 87 (multivariate outliers) plus 351 (total scores not calculable on any of the three self-report measures, or data missing on the key questions in the audit form relevant to GP attribution and recognition). The final sample thus comprised 10 507 patients.

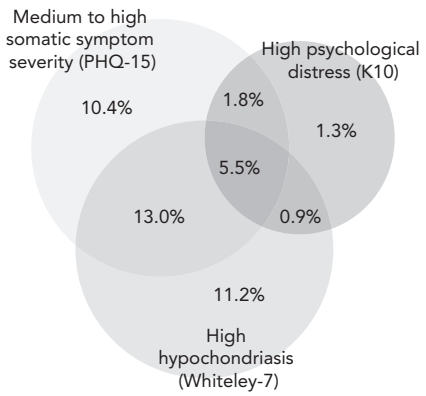
Characteristics of the final sample are shown in Box 1. There were significantly more women than men in the final sample (68.9% v 31.1%; $\chi^2 = 1505.33$; $P < 0.001$), and the women were significantly younger than the men ($t[10\,489] = 11.68$; $P < 0.001$).

Descriptive statistics for the three psychometric measures (PHQ-15, Whiteley-7 and K10) are shown in Box 2. About 30% of the

3 Scores for the sample of 10 507 patients on the Patient Health Questionnaire (PHQ-15), Whiteley Index (Whiteley-7) and the Kessler Psychological Distress Scale (K10), adjusted and unadjusted for age

	Mean score adjusted for age (SE)		Unadjusted mean score (SD)	
Measure	Male	Female	Male	Female
PHQ-15	6.7 (0.09)	8.0 (0.6)	6.6 (4.7)	8.1 (5.0)
Whiteley-7	1.9 (0.34)	1.8 (0.2)	1.9 (2.0)	1.8 (2.0)
K10	17.8 (0.13)	18.5 (0.09)	17.7 (7.3)	18.6 (7.3)

4 Venn diagram showing the overlap between affected proportions of the sample on the three psychometric measures*



* 55.9% had low scores on all measures. ◆

sample had medium to high somatic symptom severity (PHQ-15); a similar percentage had high hypochondriasis (Whiteley-7); and 9.5% had high psychological distress (K10).

Effects of sex and age

One-way ANCOVAs were conducted to examine the effect of sex, while controlling for age, on the three psychometric measures (see Box 3).

Women had significantly more severe somatic symptoms (PHQ-15) than men after controlling for age; however, the size of the effect was small ($F[1,10\,488] = 174.55$; $P < 0.001$; $\eta p^2 = 0.016$). In addition, there was a weak though significant relationship between age and PHQ-15 ($\eta p^2 = 0.016$).

Women's mean scores on the Whiteley-7 (hypochondriasis) were significantly lower than those of men, though the size of this effect was also small ($F[1,10488] = 37.03$; $P = 0.002$; $\eta p^2 = 0.001$). There was no significant relationship between age and scores on the Whiteley-7 psychometric measure.

Psychological distress (K10) scores were significantly higher for women than men after controlling for age, although the size of this effect was again small ($F[1,10488] = 20.56$; $P < 0.001$; $\eta p^2 = 0.002$). In addition, there was a weak but significant relationship between patient age and K10 scores ($\eta p^2 = 0.016$).

Because all reported effect sizes were very small, and therefore of minimal clinical interest, effects of sex and age were not considered in subsequent analyses.

Relationship between somatic symptoms, hypochondriasis and psychological distress

There was significant correlation between all three measures, with Pearson's correlation values (all significant at $P < 0.001$ in two-tailed tests) being:

- 0.567 for PHQ-15 scores and Whiteley-7 scores;
- 0.619 for PHQ-15 scores and K10 scores; and
- 0.493 for Whiteley-7 scores and K10 scores.

Box 4 shows the overlap between the psychometric measures based on dichotomised scores. Distress in at least one of the three domains affected 44.1% of the population exhibited, while 21.2% exhibited distress in at least two domains. Only 1.3% had high psychological distress without either medium to high somatic symptom severity or hypochondriasis — that is, depression and anxiety symptoms were uncommon without hypochondriasis or significant somatic symptoms. On the other hand, hypochondriasis and somatic symptoms alone were not uncommon (11.2% and 10.4%, respectively).

Somatisation

A total of 1940 patients (18.5%) met our definition (see Methods) of "somatisers"; the remaining 8567 patients (81.5%) were defined as "non-somatisers".

Somatisers had significantly higher mean psychological distress scores than the non-somatisers (25.55 [SD, 8.0] v 16.7 [SD, 6.0]; $t[10\,505] = 54.790$; $P < 0.001$; [Cohen's] $d = 1.07$). Indeed, while 29.6% of somatisers showed a high level of psychological distress (ie, K10 scores of 30 or more), only 4.9% of the non-somatisers had K10 scores of 30 or more.

Recognition of somatisation by general practitioners

Of the 6941 patients presenting with a physical complaint, GPs attributed a psychological explanation for their physical symptoms (ie, recognised somatisation) for 1059 patients (15.3%). GPs attributed a physical explanation for the symptoms of 5712 patients, and gave ambiguous responses for 170.

Box 5 presents a 2 × 2 table showing the agreement between GP attribution of somatisation and patients identified as somatisers by the psychometric measures on the patient questionnaire. Overall agreement was 74% ($\kappa = 0.132$; $P \leq 0.001$). Although statistically significant, this κ value (which gives a chance-corrected measure of agreement[15]) indicates only slight agreement.[16] GPs correctly identified only 25.1% of the patients identified as somatisers by the question-

5 Agreement between general practitioners' recognition of somatisation and that identified by psychometric questionnaires* for patients presenting with physical complaints

		GP recognition		
		Physical explanation (non-somatisers)	Psychological explanation (somatisers)	Total
Patient questionnaires	Non-somatiser	4660	706	5366
	Somatiser*	1052	353	1405
	Total	5712	1059	6771

* Patients with medium to high somatic symptom severity (score on the Patient Health Questionnaire of ≤ 10) and high hypochondriasis (score on the Whiteley Index of ≤ 3). ◆

naires. For patients who also expressed emotional distress (ie, had a K10 score of ⩾ 30), GP recognition of somatisation was slightly higher (33.5% of distressed somatisers v 21.8% in the non-distressed).

DISCUSSION

Somatisation is one of the commonest psychiatric disorders in the community, although its prevalence has been difficult to measure. In this study, we used the generally accepted three-part definition of somatisation, including multiple physical symptoms, hypochondriasis (fear of illness and tendency towards somatic attribution) and help-seeking (in this case, attending a GP). We did not conduct an independent medical assessment and could not ascertain whether physical symptoms were medically unexplained. However, high somatic symptom counts do correlate with somatoform symptoms,[17] and combining somatic symptom severity with hypochondriasis, each independently a good measure of somatisation, produces a fairly conservative measure. It might appear somewhat surprising therefore that 18.5% of our sample were considered somatisers. However, this finding is similar to that of a very large international study conducted by the World Health Organization that found somatisation in 20% of primary care attenders.[18] Other studies have also reported similar figures.[19,20]

Much emphasis in general practice is given to finding the disease underlying a physical symptom. We know that many symptoms (around 30%) presenting to GPs do not have a cause identified.[2,21] Many of these resolve within a few weeks,[22] but some persist up to 5 years.[23] The WHO study found that patients with five or more somatic symptoms had significantly increased morbidity and physical disability at follow-up, with little difference in outcome between patients with medically explained and unexplained symptoms.[24] Thus, although finding or excluding organic disease is important, it is not the end of the story.

One of the interesting issues in somatisation is its relationship with depression and anxiety. In our study, we found a minority of patients with somatisation had significant anxiety and/or depression. In some patients the distress is "converted" successfully to somatic symptoms and concern, and emotional distress is low; in others the somatic symptoms are part of a general distress syndrome best characterised by depression and anxiety. It is notable that most patients with high anxiety and depression scores on the K10 had somatisation.

An important issue in general practice is whether "distress" is recognised. Unfortunately, most patients with depression and anxiety who present to GPs complain of somatic symptoms rather than volunteering psychological symptoms. On the other hand, most patients with depression and anxiety will admit to psychological symptoms if specifically asked about them.[25] However, somatisation does significantly reduce the likelihood of GPs recognising depression or anxiety.[26] The recognition rate in our study (25%) was a little lower than those in studies from the United Kingdom (39% to 57%)[27] and Europe (36% to 48%).[28]

Patients who somatise are among the most difficult to manage, yet can be helped once the focus is moved away from the physical symptoms and on to the (bodily) concerns and worries — the hypochondriasis.[29] A number of things have been shown to be helpful. Reassurance, with good information based on an honest and trusting doctor–patient relationship, and a proper assessment, is critically important. "It is easier to persuade the patient that an illness is not serious if the complaint itself is obviously being considered seriously".[30]

Reattribution is a simple technique for moving patients from a somatic preoccupation to a consideration of their emotional distress.[31] Early trials suggest it is helpful for many patients, but not for those with a very strong somatic attribution.[32-35] Cognitive behaviour therapy and interpersonal psychotherapy are generally effective in reducing illness concerns, anxiety, depression and use of health care services.[36-39] There is also evidence from meta-analyses for the efficacy of antidepressant drugs in patients with various somatic syndromes (irritable bowel syndrome, fibromyalgia, low back pain, and others).[40-42] Most of these studies have involved tricyclic antidepressants; there is only preliminary evidence for the effectiveness of the newer antidepressants.[43]

Although these treatments are generally beneficial, there is a group of patients with chronic and polysymptomatic somatisation for whom these treatments do not lead to lasting and clinically significant improvement.[44] These patients are best managed in the same way as if they had any chronic illness. Regular appointments help to keep anxieties down and urgent consultations to a minimum. A consultation with a specialist in psychological medicine, with a letter to the GP, can further help bring a sense of control, and has been shown to lead to reduced use of health care.[45] Avoiding unnecessary interventions with their associated risk of iatrogenic effects is important.

A stepped care model may be beneficial.[46] The condition of some patients will improve with a careful assessment and reassurance. Reattribution, with or without screening for depression and anxiety, followed by appropriate treatment will help a further group. Finally, there is a group of patients with persistent somatisation who require continued monitoring, support and case management. Inevitably, a number will go on to manifest disease, and GPs need to remain vigilant.

This is the first large study of somatisation in Australian general practice. The results are consistent with overseas research indicating that somatisation is more prevalent than other better recognised psychiatric diagnoses. Its nature makes it difficult to recognise and to treat. As a consequence, it places an exaggerated burden on both generalist and specialist health services. Patients who somatise use about twice as much outpatient and inpatient medical care and cost twice as much in medical care annually as patients who do not somatise.[8,17] Some work has been done to develop models of care that can cope with this complexity, the aim of which is, as with other chronic diseases, "to cure sometimes, to relieve often, to comfort always".[47] The reduction of intrusive physical symptoms, anxiety and depression, and an increase in daily function is a realistic hope for patients who somatise.[48] Effective strategies need to be developed and trialled, and health professionals need to be educated if we are to reduce the suffering of this group of patients, and the frustration of their health carers.

ACKNOWLEDGEMENTS

This study was supported by a grant from Wyeth Pharmaceuticals and was conducted in parallel with a national educational program funded by Wyeth known as Time Efficient Mental Health.

COMPETING INTERESTS

Wyeth provided financial support for this study, but did not contribute to the design, data analysis, interpretation or writing of the study.

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(Received 29 Apr 2008, accepted 13 Aug 2008) ❑