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Hypochondriacal Fears and Beliefs, Anxiety, and Somatisation

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Four self-rating scales of hypochondriasis and the Symptom Checklist-90 were administered to 100 general practice (GP) patients and matched non-psychotic psychiatric out-patients. In a stepwise linear regression, self-rated somatic symptoms and anxiety predicted hypochondriacal fears and beliefs; self-rated depression did not appear as a predictor. There were differences between males and females and between psychiatric patients and GP patients in the associations of these constructs. These results varied in part with the scale of hypochondriasis used. Various scales of hypochondriasis appear to measure different features of the hypochondriasis syndrome. Fear of disease (disease phobia) was associated with anxiety, whereas a false belief of having a disease (disease conviction) was associated more with somatic symptoms.

There are several studies in the literature which examine the relationship of hypochondriasis to anxiety and depression (Kellner, 1986; Kellner *et al*, 1987*c*). Some authors expressed the view that hypochondriasis is predominantly a manifestation of a depression or a masked depression (Kreitman *et al*, 1965; Ladee, 1966; Lesse, 1967; Lopez-Ibor, 1972; Barsky *et al*, 1986), whereas others emphasised anxiety symptoms associated with hypochondriasis (Stenbäck & Jalava, 1962; Kenyon, 1964; Salkovskis & Warwick, 1986; Warwick & Marks, 1988), or put forward the view that hypochondriasis was always a part of another disorder (Kenyon, 1964; Ladee, 1966).

Most studies of hypochondriasis describe results with selected patients such as those referred to psychiatric clinics or admitted to psychiatric units. Such groups are subject to referral as well as diagnostic biases, and in most studies no replication was attempted in other groups. In correlational studies, the association of hypochondriacal fears and beliefs was found to vary with the kind of sample studied and with the rating and self-rating scale used (Kellner *et al*, 1987*b*,*c*).

The aim of the present study was to examine the associations of hypochondriacal fears and beliefs to anxiety, depression and somatic symptoms, in particular whether fear of disease (disease phobia) differed from hypochondriacal beliefs about disease. Another aim was to compare results obtained with different scales of hypochondriasis, since in several previous studies, the authors relied on the results obtained with one scale.

An earlier version of this paper was read at the International Congress of Behaviour Therapy in Edinburgh in September, 1988.

We administered scales of hypochondriasis to GP patients and to a group of psychiatric out-patients, and analysed the result for both sexes separately. Psychiatric patients and GP patients differ on several pertinent variables; for example, GP patients are less anxious and less depressed and they seek treatment because of bodily symptoms or concerns, or for the treatment of physical disease. We repeated the study in psychiatric patients in order to examine whether the relationships found in patients with predominant concerns about bodily disease could be replicated in patients who sought treatment for different reasons.

Method

From a pool of consecutive female GP patients, between the ages of 18 and 65, 50 patients were matched to 50 male patients by age in decades. From 130 consecutive non-psychotic patients seen in a psychiatric out-patient clinic of the same medical school, 50 males and 50 females were matched by age to the family practice patients.

The GP patients had various physical illnesses; many of these were minor, such as upper respiratory tract infections or abdominal complaints, and some patients attended for other reasons such as renewal of prescriptions. Only 5% also had formal psychiatric diagnoses such as alcoholism or mood disorder associated with epilepsy. Among the psychiatric patients, only psychotic patients and patients with organic brain syndromes were excluded. The psychiatric patients consisted of the usual psychiatric out-patient population; the predominant DSM-III diagnoses on axis I were affective disorders (40%), adjustment disorders (24%), anxiety disorders (14%) and other diagnoses including somatoform disorder (14%); another 8% had personality disorder without an axis I diagnosis.

In the GP patients, the mean age was 37.4 (s.d. = 12.1) and in the psychiatric patients, 36.7 (s.d. = 10.9). There were no significant differences between groups in social class or

ethnicity (90% of psychiatric and 93% of GP patients were Caucasian). Significantly fewer of the psychiatric patients were married (24% psychiatric and 52% GP, $\chi^2 = 16.6$, d.f. = 1, $P < 0.001$).

Assessment

The scales administered were a social questionnaire that contained questions about demographic data, events in childhood, including abuse and bereavement, current family circumstances, stresses, alcohol and substance abuse, and social and financial situation. The patients filled in a self-rating scale of current psychosocial problems and a scale of intrapunitiveness. Distress and psychopathology were measured by the Symptom Checklist-90 (SCL-90) (Derogatis *et al*, 1974).

Hypochondriasis was measured by three scales of the Illness Attitude Scales (IAS) (Kellner, 1981, 1986): the hypochondriacal beliefs scale (which consists of three questions about false beliefs of having a disease), the disease phobia scale (which consists of three questions about fear of disease) with each question rated on a five-point Likert scale (Appendix 1), and the hypochondriasis scale of the IAS, which is the sum of the scores of the two previous scales. The results of several studies suggest that these scales are valid measures of hypochondriacal concerns (Kellner, 1981) and they sensitively discriminate between patients with hypochondriasis, and other psychiatric and GP patients (Kellner *et al*, 1987*a*). Another measure of hypochondriasis was a scale that consisted of factor 2 and factor 3 of the Whiteley index (Pilowsky & Spence, 1981). Factor 2 has items that pertain to fear of disease and factor 3 has items associated with disease conviction. Factor 1 of this scale was not included because it deals with bodily sensations or complaint; since the somatisation scale of the SCL-90 was used as one of the independent variables in a stepwise regression, the associations of this scale with factor 1 would have been spurious because of the common content.

In psychiatric research, results often vary with the measure used; for example, in drug trials, scales which purport to measure the same construct sometimes yield inconsistent findings (Kellner, 1971; Uhlenhuth *et al*, 1982). We used several scales of hypochondriacal fears and beliefs to examine whether the results obtained with various scales would be uniform; these scales have been used in several of the studies listed in this paper.

The present paper is largely limited to the relationship of self-rated hypochondriasis to age, anxiety, depression, somatic symptoms and phobic anxiety. The remaining results will be the topic of another paper.

Definitions

Throughout this paper, hypochondriasis is defined in accordance with the criteria of ICD-9 (World Health Organization, 1978), which include "the conspicuous features are excessive concern with one's health in general or the integrity and functioning of some part of one's body . . ." and those of DSM-III-R (American Psychiatric Association, 1987), "[A] preoccupation with the fear of having, or the belief that one has, a serious disease . . .". The term 'hypochondriacal concerns' is defined as fears and beliefs that are characteristic of hypochondriacal patients (Kellner *et al*, 1987*a*).

There are numerous definitions of somatisation in the literature, some of which are based on psychodynamic theories. Some researchers on somatisation tend to use DSM-III criteria, others use the count and severity of somatic symptoms (Kellner, 1989). For the purposes of the present study we used the somatisation scale of the SCL-90 as a measure of somatisation. The SCL-90 is based on factor analyses of symptoms (Derogatis *et al*, 1974). The scale has been used effectively in numerous drug trials as a measure of somatic symptoms (Uhlenhuth *et al*, 1982) and was found to discriminate between the somatic symptoms of patients with hypochondriasis and those of other psychiatric patients (Kellner *et al*, 1989).

We use the terms 'somatisation' and 'somatic symptoms' synonymously because the somatisation scale is a measure of the number as well as the self-ratings of the severity of somatic symptoms. The words 'prediction' and 'predictor' in this paper are statistical terms to describe the result of the stepwise regression, and are not used in their common meaning as forecasting future events. The terms 'anxiety', 'depression', and 'phobic anxiety' are used to describe the self-rating scores of the corresponding Symptom Checklist-90 scales.

Statistical methods

In order to evaluate the differences between groups (GP and psychiatric) and sexes, we used a two-way analysis of variance and tested for interaction between group effects and sex to determine whether males and females responded differently in the two groups beyond the differences one would expect to be caused by group differences. Since no interactions were significant, we present the results of a two-way ANOVA with group and sex as main effects.

To assess the predictors of hypochondriacal fears and beliefs, a linear multiple regression was used (Iman & Conover, 1979; Zar, 1984). The dependent variable was the patients' self-ratings of hypochondriasis, and independent variables in the analysis included age, and four of the scales of the Symptom Checklist-90: depression, anxiety, phobic anxiety, and somatisation. Males and females in both clinics were analysed separately and analyses were carried out for each of the scales of hypochondriasis. Patients who had data missing that were essential for a particular analysis were excluded from that analysis. We used two-tailed tests. The data were not normally distributed, therefore we used the Spearman rho to compute correlation coefficients.

Results

All scales of hypochondriasis and the scales of anxiety, depression and somatisation were significantly higher in psychiatric patients than GP patients (with P values ranging from < 0.002 to < 0.0001). Depression was significantly higher in the females in the GP group as well as in the psychiatric group ($P < 0.02$) (Table 1).

The correlations of the scales of hypochondriasis to anxiety, depression and somatisation were positive and the coefficients ranged from +0.08 (disease phobia and depression in GP males) to +0.70 (hypochondriacal beliefs

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Table 1
Means and standard deviations of the hypochondriacal beliefs and disease phobia scales of the Illness Attitude Scales, the Whiteley Index (factors 2 and 3) and the anxiety, depression and somatisation scales of the Symptom Checklist-90 in general practice patients ($n = 100$) and psychiatric patients ($n = 100$)

	General practice				Psychiatry							
	Males		Females		Males		Females		F^2		$P<$	
	n^1	mean (s.d.)	n	mean (s.d.)	n	mean (s.d.)	n	mean (s.d.)	group	sex	group	sex
Hypochondriacal beliefs	50	1.16 (2.23)	49	1.39 (2.10)	50	3.14 (3.41)	47	2.09 (2.61)	12.55	1.20	0.005	NS
Disease phobia	49	1.69 (2.21)	48	1.81 (1.92)	49	3.29 (3.13)	50	2.62 (3.10)	10.03	0.52	0.002	NS
Whiteley Index (factors 2 and 3)	50	1.44 (1.54)	49	1.45 (1.50)	49	2.57 (1.97)	49	2.16 (1.86)	14.03	0.66	0.0002	NS
Anxiety	48	0.68 (0.74)	50	0.95 (0.84)	49	1.67 (1.11)	50	1.74 (1.08)	42.36	1.53	0.0001	NS
Depression	49	0.78 (0.76)	48	1.28 (0.98)	45	1.89 (1.07)	48	2.04 (1.04)	44.64	5.11	0.0001	0.02
Somatisation	50	0.76 (0.70)	49	0.98 (0.66)	50	1.30 (0.95)	50	1.36 (0.95)	15.77	1.48	0.0001	NS

1. Some self-rating scales were incomplete, therefore numbers in each cell differ.
2. Two-way ANOVA without interactions (see Method).

and somatisation in male psychiatric patients), median +0.49 (Whiteley index and somatisation in female psychiatric patients). In GP patients, about half of the coefficients did not reach a significant level, and the coefficients were generally higher in males than in females. In psychiatric patients, the coefficients were higher than in GP patients, all with $P<0.001$. Some of the important coefficients are listed in Table 2.

All scales of hypochondriasis were significantly intercorrelated. In GP patients, most of the coefficients were between +0.40 and +0.50 (most with $P<0.005$). In psychiatric patients, the coefficients ranged from +0.50 to +0.90 (all with $P<0.0001$).

Somatisation, depression and anxiety were significantly intercorrelated in all four groups with most coefficients between +0.60 and +0.80 (apart from a few exceptions with $P<0.001$).

Stepwise regression

The results of the linear stepwise regression varied with the scale of hypochondriasis, age, sex and population (Table 3). The results were as follows: anxiety was a significant predictor of all scales of hypochondriasis in psychiatric females ($P<0.0001$ or $P<0.0002$). Somatisation, as measured by the SCL-90, was a significant predictor of hypochondriacal beliefs in two groups: GP males and psychiatric males ($P<0.001$, and $P<0.0001$ respectively), and did not reach a significant level in GP females ($P<0.059$).

For the combined hypochondriasis scale of the IAS (see Method), the results were the same as those of the hypochondriacal belief scale except for some changes in β values and with all P values being significant.

Phobic anxiety (SCL-90) and age were predictors of a high Whiteley index score and disease phobia in some of the groups. The predictors pertaining to the Whiteley index were similar to those of disease phobia. Depression was the only independent variable that did not appear as a predictor in any of the analyses.

Discussion

Several features of this study differ from previous ones. The subjects were consecutive patients seeking

Table 2
Spearman rank order correlations between the hypochondriacal belief scale and disease phobia scale of the Illness Attitude Scales, factors 2 and 3 of the Whiteley Index and the anxiety, depression and somatisation scale of the Symptom Checklist-90

	General practice						Psychiatry					
	Males			Females			Males			Females		
	anxiety	depression	somatisation	anxiety	depression	somatisation	anxiety	depression	somatisation	anxiety	depression	somatisation
Hypochondriacal beliefs	0.49****	0.50****	0.60****	0.15	0.21	0.29*	0.57****	0.49****	0.70****	0.53****	0.49****	0.48****
Disease phobia	0.38**	0.08	0.37***	0.22	0.34*	0.24	0.57****	0.53****	0.60****	0.63****	0.48****	0.57****
Whiteley Index (factors 2 and 3)	0.41***	0.19	0.29*	0.14	0.14	0.18	0.58****	0.49****	0.59****	0.58****	0.51****	0.49****

*$P<0.05$, **$P<0.01$, ***$P<0.005$, ****$P<0.001$.
Since some of the self-rating scales were incomplete, the number in each cell ranged from 46 to 50.

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Table 3
Stepwise regression of four measures of hypochondriasis: the Whiteley Index[1], and three subscales of the Illness Attitude Scales; disease phobia, hypochondriacal beliefs and combined hypochondriasis scale

	Whiteley Index[1]					Disease phobia					Hypochondriacal beliefs					Combined hypochondriasis scale				
	variable	β	s.e.	P-value	model r^2	variable	β	s.e.	P-value	model r^2	variable	β	s.e.	P-value	model r^2	variable	β	s.e.	P-value	model r^2
General practice males $n=46$	PA[2]	0.89	0.34	0.011	0.218	No variable was significant					som	1.36	0.40	0.002	0.213	som	2.23	0.71	0.003	0.184
	age	−0.035	0.015	0.03																
General practice females $n=44$	No variable was significant					age	0.088	0.03	0.005	0.177	som	0.91	0.47	0.059	0.082	som	1.54	0.69	0.03	0.105
Psychiatric patients males $n=45$	PA	1.20	0.19	0.0001	0.475	PA	1.86	0.32	0.0001	0.443	som	2.60	0.47	0.0001	0.419	som	5.14	0.74	0.0001	0.526
Psychiatric patients females $n=43$	anxiety	0.965	0.22	0.0001	0.326	anxiety	1.81	0.36	0.0001	0.381	anxiety	1.27	0.31	0.0002	0.289	anxiety	3.08	0.61	0.0001	0.386

1. Factors 2 and 3 of Whiteley Index (see text).
2. The independent variables were age and the following scales of the Symptom Checklist-90: phobic anxiety (PA), somatisation (som), depression (depression did not appear as a predictor in any of the analyses).

treatment from GPs and psychiatrists, and were not selectively referred as hypochondriacal patients. In several previous studies on the relationship of hypochondriasis to depression, anxiety, or somatic symptoms, the authors used only one measure or scale of hypochondriasis and dealt with only one of these emotional states. The stepwise regression in our study included several validated self-rating scales of hypochondriasis as well as more than one scale of distress (anxiety, depression, etc.).

The findings confirm those of previous studies, in which the authors used different criteria, that hypochondriacal attitudes are associated with anxiety as well as with depression and somatic symptoms. The results of the stepwise regression, however, varied with the scale of hypochondriasis, sex, type of clinic, and for two of the scales with age.

Differences between scales

High scores on the hypochondriacal beliefs scale (which includes questions such as "Do you believe that you have a physical disease but the doctors have not diagnosed it correctly?") were as predicted by high self-ratings of somatic symptoms (except for female psychiatric patients in whom anxiety was the predictor), whereas a high score on the disease phobia scale (with questions such as "Are you afraid that you may have cancer?") was predicted by anxiety, phobic anxiety and higher age, but not by somatic symptoms. The two scales that purport to measure hypochondriasis yielded some different findings: the results with the Whiteley Index (factors 2 and 3) were similar to those of the disease phobia scale. The results with the hypochondriasis scale of the IAS (which is the sum of two scales) did not differ essentially from the hypochondriacal belief scale.

Depression and anxiety

Numerous studies found an association of depression and hypochondriasis. For example, Kreitman *et al* (1965) found that hypochondriacal depressives were about as depressed as other depressive patients. In his study on melancholia, Lewis (1934) found that over 40% of the depressed patients he had treated were hypochondriacal. Stenbäck & Jalava (1962) found hypochondriacal features in all subtypes of depression except the depressed phase of manic–depressive illness. Barsky *et al* (1986) found an association of hypochondriasis with depression. Kellner *et al* (1986) found a large proportion of patients with endogenous depression to have hypochondriacal attitudes and beliefs. Also in the present study, there was a robust and significant correlation

of depression with all of the measures of hypochondriasis in psychiatric patients; in the GP patients the coefficients were lower, and several were not significant. The reasons for the failure of depression to appear as a predictor in the stepwise regression are discussed below.

Several studies have shown a relationship between hypochondriasis and anxiety. Stenbäck & Jalava (1962) concluded from a clinical study of depressed hypochondriacal patients that hypochondriasis was predominantly a phobia, a manifestation of anxiety and "essentially neurotic" even in patients who were depressed. Timsit *et al* (1973) found hypochondriacal patients to be more anxious than other psychiatric patients, except for patients with anxiety disorders. Kellner *et al* (1987*a*), using several validated self-rating scales including SCL-90, found hypochondriacal psychiatric patients were more anxious than other patients and as depressed as other psychiatric patients. Kreitman *et al*'s (1965) results were different: hypochondriacal depressed patients were *less* anxious than other depressives. Kreitman *et al* had compared a group of patients diagnosed as having "depressive illness with pronounced somatic hypochondriacal symptoms" who were primarily depressed, presented with somatisation, and not all of whom necessarily had hypochondriacal beliefs. The control group patients were depressed without somatic symptoms, thus were a highly selected group, and the patients apparently differed from those in the present study.

Disease phobia and disease conviction

The present findings suggest that patients who fear disease tend to be anxious or phobic, whereas patients who falsely believe that they have a physical disease rate themselves as having a larger number and more severe somatic symptoms. Fear of disease and a false belief of having a disease tend to occur together in many hypochondriacal patients (Kellner *et al*, 1987*a*), and the scales were also substantially correlated in the present study. The findings of the stepwise regression tend to support the distinction of disease phobia (an inordinate fear of disease) and disease conviction (a false belief of having a disease) as two features within the hypochondriacal syndrome, a distinction which was based hitherto on factor analytic studies (Pilowsky, 1968; Pilowsky & Spence, 1981).

Somatic symptoms

The coexistence of somatic symptoms and complaints and hypochondriasis is a common clinical experience (Lloyd, 1983); many hypochondriacal patients seek reassurance from their physician for various reasons such as hoping for a relief from anxiety or hoping that a correct diagnosis will finally be made. In a clinical study, Stenbäck & Jalava (1962) found that somatic symptoms were strikingly more common in hypochondriacal patients than in other psychiatric patients. In their study, however, patients with frequent somatic symptoms might have acquired the label hypochondriasis because of their bodily complaints, although they did not necessarily have the characteristic hypochondriacal beliefs or fears. In a group of psychiatric patients with DSM-III hypochondriasis (hypochondriacal neurosis), Kellner *et al* (1989) found somatic symptoms significantly more severe than in other psychiatric patients, but selective referral of somatising hypochondriacal patients (Appleby, 1987) could have led to a spurious association. In the present study, such biased selection of somatisers was avoided, yet in the stepwise regression a high score on the somatisation scale was a predictor in three out of the four groups for the hypochondriacal beliefs scale; in the remaining group (psychiatric female patients) it was a high anxiety score which predicted a high score on the hypochondriacal belief scale.

There are various possible causes for the association of somatic symptoms and anxiety on one hand and hypochondriacal beliefs on the other. Persistent somatic symptoms, including pain, may induce a false belief that one has a disease; particularly if the physician is uncertain about the diagnosis, or if the explanation and reassurance to the patient are inadequate. For example, chronic pelvic pain and chronic peptic ulcer are strongly associated with false beliefs of having another disease (Chappell & Stevenson, 1936; Stenbäck, 1960; Kellner *et al*, 1988). Chronic pain from any source, including organic disease, is associated with neurotic symptoms (Woodford & Merskey, 1972). Relief of pain after surgery for lumbar disc protrusion reduces self-rated neurotic symptoms (Sternbach & Timmerman, 1975). Another likely mechanism is undue attention to bodily sensations; people who are anxious and fear disease or believe that they have a serious disease have a motive to attend to sensation and selectively perceive symptoms of minor ailments such as cramps or ligamentous and muscular sprains as well as symptoms caused by physiological processes. There is evidence to suggest that this process also plays a substantial part in the perception of bodily sensations (Pennebaker, 1982; Kellner, 1986).

If the bodily symptoms are the somatic manifestations of anxiety, this too could induce self-observation and selective perception motivated by

fear, causing more anxiety which in turn could cause more sympathetic-adrenergic arousal with somatic symptoms and a vicious circle (Kellner, 1985; Clark, 1986). This would also explain why the successful treatment of panic attacks diminishes hypochondriacal beliefs (Sheehan *et al*, 1980; Fava *et al*, 1988). In other words, persistent somatic symptoms, particularly if inadequately explained by the physician, could be construed as evidence by the patient that there must be a physical illness responsible for the symptoms.

Depression, somatic symptoms and hypochondriasis

There is consistent evidence that the number and severity of somatic symptoms is higher in depressed patients than in normals and the symptoms decrease when depression is successfully treated; depression apparently induces functional somatic symptoms. The misinterpretation of the meaning of functional symptoms (Barsky & Klerman, 1983) could be one of the causes of the frequent coexistence of depression and hypochondriasis. Moreover, depressed patients judge their bodily symptoms, as well as other percepts, in a pessimistic way (Kellner *et al*, 1983).

Depression and anxiety tend to coexist and form an anxiety–depressive syndrome; these two factors were highly correlated in numerous previous studies (von Zerssen, 1986) as well as in the present one. Hypochondriasis and depression were also robustly correlated in psychiatric patients (who were more depressed), whereas the coefficients in the GP group were substantially lower and varied with the scale of hypochondriasis and sex. The purpose of a stepwise regression is to determine which are the strongest predictors of an outcome variable. The results of the present study indicate that hypochondriacal fears and beliefs are predominantly associated with anxiety and somatic symptoms and the association with depression is usually secondary because of the frequent coexistence of anxiety and depression.

Patients with severe endogenous depression may have delusions that they have a disease; in these cases, probably other psychopathological processes are involved (Kellner *et al*, 1989). Such processes probably do not apply to the present study because patients who were psychotic had been excluded.

Differences between groups

As found in numerous previous studies, psychiatric patients rated themselves as more depressed and anxious than GP patients, and females more depressed than males. Psychiatric patients had higher scores than GP patients on the scales measuring hypochondriacal concerns and somatic symptoms; these results appear to be a function of the higher level of anxiety and depression in the psychiatric patients.

There were differences in the relationships among these constructs between the two clinics and between males and females. In GP females, the correlation coefficients were positive, but lower than in the other groups and only two reached a significant level. In the stepwise regression, female psychiatric patients differed from the other groups in that self-rated anxiety was a predictor of hypochondriacal fears and beliefs.

Although the significance levels for the stepwise regressions were generally high for most predictors, some were tenuous. The best predictor depends on the number of the variables entered into the model; for example, when we added self-ratings of intrapunitiveness and the scores of the problem list (mainly the distress caused by interpersonal problems), a few of the present predictors were displaced, such as anxiety displacing somatisation as a significant predictor for hypochondriacal beliefs in male psychiatric patients.

Implications

The statistical evaluation of results of group research yields results that apply to the groups as a whole; it does not take into account the idiosyncratic relationship of variables among individuals. Clinical studies suggest that hypochondriasis is a complex phenomenon that includes the interaction of several elements: a fear of disease and/or a false belief of having a disease, thanatophobia, a tendency for self-observation, selective perceptions of bodily sensations, learning, iatrogenic reinforcement, the interaction of the physiology of anxiety and depression and their cognitive components, and a misunderstanding of the nature of the illness and the symptoms (Kenyon, 1964; Paal, 1968; Pilowsky, 1968; Mayou, 1976; Küchenhoff, 1985; Kellner, 1986; Barsky *et al*, 1986; Warwick & Salkovskis, 1989; Barsky & Wyshak, 1990; Fava & Grandi, 1991). The presence of these elements and the role they play differ substantially between patients (Kellner, 1987*a*), and in clinical practice, the psychopathology of an individual hypochondriacal patient needs to be explored without prejudice (Stenbäck, 1960).

The survey of the literature as well as the findings of the present study show complex associations of hypochondriacal fears and beliefs. The clinical relevance of these associations is suggested by studies of treatment; in patients with secondary hypochondriacal syndromes, effective treatment of anxiety

(Fava *et al*, 1988; Sheehan *et al*, 1980) and of depression (Kellner *et al*, 1986) relieves hypochondriacal concerns and constitutes adequate treatment in some patients.

The distinction between the sub-syndromes disease phobia and disease conviction, although they frequently coexist to varying degrees, may also have implications for treatment, but this view is based on observations from uncontrolled studies of treatment. Exposure appears to be the most appropriate and adequate treatment if the patient has predominantly disease phobia (Salkovskis & Warwick, 1986; Warwick & Marks, 1988); whereas in patients with disease conviction, persuasion that their belief that they suffer from a serious undiagnosed disease is false appears to be essential, otherwise the belief remains a crucial link in the vicious cycle of the hypochondriacal reaction (Kellner, 1982).

Conclusions

Various scales of hypochondriasis tend to measure different features of the hypochondriasis syndrome. As measured by self-rating scales, the findings support the distinction between two features of hypochondriasis: a false belief of having a disease (or disease conviction) and an inordinate fear of having a disease (disease phobia). Disease conviction was predominantly associated with somatic symptoms, whereas disease phobia was predominantly associated with anxiety. There were, however, differences between males and females as well as differences between psychiatric patients and GP patients in the associations of these constructs. Depression was correlated with hypochondriasis, but mainly in the psychiatric patients who were substantially more depressed than the GP patients. The results of the stepwise regression indicate that hypochondriacal concerns are predominantly associated with anxiety and somatic symptoms and the association of hypochondriasis with depression is secondary because of the frequent coexistence of depression with anxiety. The two sub-syndromes of hypochondriasis (disease conviction and disease phobia) may require different psychotherapeutic strategies.

Appendix 1

Questions of the hypochondriacal beliefs and disease phobia scales of the Illness Attitudes Scales.

Hypochondriacal beliefs

10. Do you believe that you have a physical disease, but the doctors have not diagnosed it correctly?
11. When your doctor tells you that you have no physical disease, do you refuse to believe him?
12. When you have been told by a doctor what he found, do you soon begin to believe that you may have developed a new illness?

Disease phobia

16. Are you afraid that you may have cancer?
17. Are you afraid that you may have heart disease?
18. Are you afraid that you may have another serious illness?

Each question is self-rated on a five-point scale with cues as follows:

No; rarely; sometimes; often; most of the time

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