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Dimensions of Hypochondriasis

By I. PILOWSKY

Introduction

The confusion over the definition and nosological status of hypochondriasis has been stressed by many authors. Jelliffe (1931) refers to it as "a strange child in the psychopathological family", and Macalpine (1953) uses the phrase "a stepchild in psychiatry proper". It has been described in terms of the disturbed attitude to health and to doctors and also in terms of the symptoms presented. Factor analysis is a method well-suited to the examination of such a problem and has been used to investigate psychiatric syndromes in order to dissect out the symptom clusters which have been subsumed under a single blanket term. (Hamilton, 1960, Friedman, 1964; Overall, 1962).

This approach to hypochondriasis has been used on two ocasions. In both cases the Minnesota Multiphasic Personality Inventory Hypochondriasis Scale (Hathaway and McKinley, 1951) has been the instrument employed to provide the data for analysis. The first study by Comrey (1957) involved the giving of the MMPI to 360 cases of whom 103 were normals and the rest psychiatric in-patients and out-patients. The responses to the hypochondriasis items were intercorrelated and the complete centroid method of factor extraction was followed by rotation using Kaiser's Varimax method. Eight factors were identified and were named Poor Physical Health, Digestive Difficulties, Bad Eye-sight, Lung Damage, Poor Bowel Function, Hypochondriasis, Sinusitis, and Hospitalization.

The second study by O'Connor and Stefic (1959) involved the giving of the same scale to 300 male neuropsychiatric patients. For the final analysis only 30 of the 33 items were used, and the complete centroid method of factor extraction was used. Three primary factors were isolated and named Asthenic Reaction, Vague Somatic Complaints, and Gastro-Intestinal Reaction. A second-order factor of Poor Physical Health or Health Concern was also identified.

It is not surprising that the factors extracted in these studies related mainly to clusters of physical symptoms since the MMPI Hypochondriasis Scale is essentially a symptom inventory, with no items tapping the individual's attitudes to diseases or to the reactions of those in his environment.

In view of these considerations it was decided to devise a new questionnaire based on a current concept of hypochondriasis which could then be subjected to a factor analysis. It was hoped that the factors which emerged might be more in keeping with clinical experience than those described in previous studies.

Method

The Questionnaire

In order to obtain an item universe one hundred members of the medical, nursing and ancillary staff of the United Sheffield Hospitals were asked to define "hypochondriasis" and to write the definition on a card. These definitions were analysed using Raven's (1950) method of comparative matching. Briefly, this involved the breaking down of each definition into a number of separate statements. All similar statements were then grouped and their frequency noted. Questions representing the most frequently made statements were included in the questionnaire. Special care was taken to devise questions which would not give affront to the patient. A few additional questions were added because they are of theoretical interest.

The questionnaire (named "Whiteley Index") was then given to 200 patients under the care of the Department of Psychiatry. Of these 100 had been diagnosed as manifesting hypochondriacal features and the other 100 as showing

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little or no evidence of hypochondriasis. Hypochondriasis was defined as a persistent preoccupation with disease despite reassurance given after thorough medical examination. The patients' age and sex characteristics are shown in Table I. The ages differ significantly, but it is unlikely that this would affect the validity of other findings.

TABLE I

Age and Sex Distribution of Patient Sample

	Hypochondriacal		Non-Hypochondriacal	
	Males N=38	Females N=62	Males N=46	Females N=54
Mean Age	44·03	44·19	37·5	37·37
Standard Deviation	12·1	13·1	16·4	14·3

Of the twenty questions included to tap hypochondriacal attitudes seventeen discriminated significantly between the two groups. For technical reasons this number had to be reduced to fourteen so that other information could be punched on the computer tapes and three questions were therefore excluded. The original twenty questions are listed in Table II. The questionnaires were scored by giving one point for each of the fourteen questions answered in the specified direction. The mean scores for the hypochondriacal patients were: males 8·92 (S.D. 5·15) females 7·9 (S.D. 3·24) and the non-hypochondriacal patients, males 2·89 (S.D. 2·18) and females 3·09 (S.D. 2·13). It is interesting to compare the scores of these two groups with the scores of two non-psychiatric samples. The first consisted of 47 patients (15 male and 32 female) receiving treatment for malignant disease as in-patients in the Department of Radio-therapy of the United Sheffield Hospitals. The mean score for males was 3·2 (S.D. 2·71) and for females it was 4·47 (S.D. 3·2).

The second sample consisted of 15 "normals" who were in fact civil servants attending a course of evening classes. As the numbers are small (8 males and 7 females) their scores have been combined. Their ages ranged from 20 to 62 years with the average being 42·53 years. The average score on the questionnaire was 1·67 (S.D. 2·44).

Test Re-Test Reliability

71 patients filled in the questionnaire on a second occasion. The time lapse ranged from 2 weeks to 44 weeks, the average being 18·39 weeks. The scores on the first and second occasions correlated significantly (Product-moment correlation $= +0{\cdot}81$ $p < {\cdot}001$).

Validity

In order to gain further evidence of validity, a questionnaire seeking information about the patient was devised, to be filled in by the patients' relatives. Four psychiatrists were asked to rate each question on a four-point scale according to the degree which they judged that a "yes" or "no" response would discriminate between a hypochondriacal and a non-hypochondriacal patient. The questions chosen for scoring were those having ratings of 3 or 4 from at least three of the psychiatrists and are shown in Table III.

The questionnaires filled in by the spouses of 118 new referrals were used. These were scored by giving one point for each specified response.

The product moment correlation between the scores of the patients and their spouses was $+0{\cdot}59$ $p < {\cdot}001$. When a correction for attenuation in the patients' questionnaire was made, the correlation rose to $+0{\cdot}65$.

The Factor Analysis

The responses of the sample of psychiatric patients were used in the factor analysis. These were intercorrelated to produce a 14 by 14 matrix of product-moment correlations. A principal component analysis was then performed (Cooley and Lohnes, 1963). The first three factors accounting for 53·5 per cent. of the variance had latent roots greater than unity, and these were rotated by Kaiser's Varimax method (1958) in order to facilitate interpretation. The loadings on the unrotated and rotated factors are shown in Table IV.

An examination of the items with high loadings on each of the factors makes it possible to identify them without much difficulty. The items with high loadings on Factor 1 are: B. "Are you bothered by many pains and aches?"; C. "Do you find that you are often aware of

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TABLE II

Item Analysis of Hypochondriasis Questionnaire

Item	No. of patients answering "Yes" Hypoch. N=100	Non-hypoch. N=100	χ^2	
A. Do you often worry about the possibility that you have got a serious illness?	72	16	42·5	p<·001
B. Are you bothered by many pains and aches	76	19	62·88	p<·001
C. Do you find that you are often aware of various things happening in your body?	65	18	43·58	p<·001
D. Do you worry a lot about your health?	85	33	53·76	p<·001
E. Do you often have the symptoms of very serious illnesses?	40	8	27·67	p<·001
F. If a disease is brought to your attention (through the radio, television, newspapers or someone you know) do you worry about getting it yourself ?	45	3	46·08	p<·001
G. If you feel ill and someone tells you that you are looking better, do you become annoyed?	24	8	8·37	p<·01
H. Do you find that you are bothered by many different symptoms?	63	10	58·33	p<·001
I. Is it easy for you to forget about yourself, and think about all sorts of other things?	37	56	6·35	p<·02
J. Is it hard for you to believe the doctor when he tells you there is nothing for you to worry about?	72	28	39·98	p<·001
K. Do you get the feeling that people are not taking your illness seriously enough?	53	27	13·02	p<·001
L. Do you think that you worry about your health more than most people?	55	13	37·45	p<·001
M. Do you think there is something seriously wrong with your body?	44	7	34·11	p<·001
N. Are you afraid of illness?	61	32	15·75	p<·001

Excluded Items	No. of patients answering "Yes" Hypoch. N=100	Non-hypoch. N=100	χ^2	
1. Have you had any treatment which has really helped you?	63	56	0·746	p>0·05
2. Do you think there is something the matter with your mind?	31	26	0·3	p>0·05
3. Do you read books and articles for information about disease?	27	15	3·64	p>0·05
4. Do you frequently try to explain to others how you are feeling?	62	30	19·34	p<0·001
5. Are you upset by the way people take your illness?	52	21	19·4	p<0·001
6. Are you upset by the appearance of your face or body?	38	19	7·94	p<0·01

various things happening in your body?", and H. "Do you find that you are bothered by many different symptoms?". Probably the best description for this factor would be Bodily Preoccupation.

Factor 2 has highest loadings from items F: "If a disease is brought to your attention (through the radio, television, newspapers or someone you know) do you worry about getting it yourself?"; I. "Is it easy for you to forget about yourself and think about all sorts of other things?"; L. "Do you think that you worry about your health more than most people?" and N. "Are you afraid of illness?"

This factor seems to be a combination of "disease phobia" and the type of insight which often accompanies these fears when they are encountered clinically. Thus this factor seems

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TABLE III

Items in Questionnaire Filled in by Patient's Spouse

1. Is he/she always worrying about the possibility that he/she has a serious illness?	Yes	No
2. Does he/she complain all the time?	Yes	No
3. Does he/she complain of many aches and pains?	Yes	No
4. Does he/she worry a lot about his/her health?	Yes	No
5. Does he/she take lots of medicines?	Yes	No
6. Does he/she visit the doctor more often than necessary?	Yes	No
7. Does he/she think that he/she has every disease he/she hears about (from friends, radio, TV. or newspapers)?	Yes	No
8. Do you sometimes get fed up with listening to all the complaints?	Yes	No
9. Does he/she seem very anxious about the illness?	Yes	No

TABLE IV

Questionnaire Item	Unrotated Factors			Rotated Factors		
	Factor I	Factor II	Factor III	Factor I	Factor II	Factor III
A.	−·209	+·068	−·136	−·248	+·170	−·044
B.	−·268	−·209	−·484	−·514	−·102	−·180
C.	−·263	−·165	−·139	−·292	+·033	+·049
D.	−·311	+·127	−·246	−·396	+·259	−·105
E.	−·294	−·224	−·076	−·276	+·031	+·125
F.	−·253	+·365	+·080	−·145	+·496	+·029
G.	−·172	−·338	+·482	+·171	+·021	+·515
H.	−·305	−·147	−·268	−·406	+·04	−·033
I.	+·180	−·349	−·268	+·03	+·485	+·142
J.	−·291	−·009	+·074	−·179	+·238	+·16
K.	−·201	−·252	+·441	+·123	−·097	+·469
L.	−·295	+·249	+·128	−·148	+·454	+·116
M.	−·297	−·288	+·235	−·082	+·08	+·368
N.	−·230	+·509	+·095	−·118	+·592	−·015

to represent the type of hypochondriasis in which the patient asks anxiously for reassurance about conditions which he will often admit he does not really believe that he is suffering from.

Factor 3 has high loadings from items G. "If you feel ill and someone tells you that you are looking better, do you become annoyed?"; K. "Do you get the feeling that people are not taking your illness seriously enough?" and M. "Do you think there is something seriously wrong with your body?".

This factor describes the type of hypochondriasis which is characterized by a firm conviction of the presence of serious pathology accompanied by a paranoid attitude to relatives and medical personnel which may at times be considered psychotic.

DISCUSSION

The factors which have been extracted and identified in this study differ inevitably from those of Comrey and O'Connor and Stefic. In the questionnaire used in this study specific symptoms were not included since neither the nature nor the number of symptoms were considered the major features in the diagnosis of hypochondriasis. However, Factor 1 (Bodily Pre-occupation) probably corresponds to factors extracted in the previous studies.

The three factors identified here correspond well to the types of hypochondriasis frequently described in the literature. Thus Leonhard (1961) writes of "sensohypochondria" and "ideohypochondria", the former referring to bodily sensations and the latter to phobias of illness. Similarly James (1960) divided hypochondriacal phenomena into three categories—the personality trait of body over-concern, hypochondriacal anxieties and hypochondriacal delusions. Glover (1949) describes hypochondria occurring as "hypochondriacal anxiety when the patient has constant but groundless fears"

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and as "hypochondriacal sensations in which case he complains of pain or other disturbing sensations".

The failure to respond to reassurance is often described as an essential feature of hypochondriasis (Gillespie 1929, Cobb 1946, Culpin 1931). This feature seems to be reflected in Factor 3, and is a form of behaviour which tends to evoke the doctor's hostility. Thus King (1916) describes these patients as "the terror of the doctor" and Alvarez (1944) advises that we "should try to get them out of the office as quickly as possible because the time they take up is spent to no good purpose". It is hardly surprising that some doctors are disinclined to investigate the patient thoroughly (Mead, 1965). However, it seems important to stress that if the response to reassurance is to be one of the criteria for diagnosis, then the examination on which this reassurance is based should be a thorough one and its nature specified in reports of clinical studies.

Summary

In order to investigate the concept of hypochondriasis a questionnaire has been devised. Evidence of its validity and reliability has been presented. This has been followed by a principal component analysis. Three factors have been identified as reflecting three dimensions of hypochondriasis, viz: Bodily Pre-occupation", "Disease Phobia" and "Conviction of the Presence of Disease with Non-Response to Reassurance". These three factors are discussed in relation to the literature on hypochondriasis. Their nature lends support to those observations which have been based on clinical experience.

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