

Screening for psychiatric illness in general practice: the general practitioner versus the screening questionnaire

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SUMMARY. *This study compares the characteristics of general practitioners and a pen and paper test in the detection of psychiatric disorder in primary care settings. A psychiatrist interviewed a stratified sample of 283 patients drawn from 590 consecutive new illnesses seen in 15 general practices. Research diagnoses could be made in between one-quarter and one-third of the consecutive new illnesses. Two different research diagnostic systems agreed quite well with one another about who should be regarded as a psychiatric 'case' — although agreement between them for individual diagnoses was less impressive. Research diagnoses of psychiatric illnesses could be made in approximately 30% of new episodes of illnesses seen. If the DSM-3 system was used as a criterion of 'caseness', the specificity of the general health questionnaire was 75.4%, and the sensitivity was 87.1%. The general practitioners had fewer false positives than the questionnaire, but they were much more likely to miss psychiatric cases. Use of the general health questionnaire could increase their sensitivity from about 50% to 95%.*

Introduction

MUCH recent evidence suggests that general practitioners miss many cases of affective illness which can be diagnosed by psychiatrists using standardized research interviews.¹⁻⁶ However, such studies have used research interviews such as the British 'present state examination'⁷ or the American equivalent,⁸ which enshrine psychiatrists' views about what is considered to be a 'case'. Although assessments made by such interviews have very high reliability,^{9,10} their validity is largely unknown. It thus seems of interest to compare such assessments with the views of the family doctors, before going on to discuss the rather different concepts of 'caseness' used.

There are now several different research systems for generating psychiatric diagnoses, each using its own interview. Dean and colleagues¹¹ have recently produced a reasonably short interview — the 'psychiatric assessment schedule' — which is 'polydiagnostic' in that it allows diagnoses to be made by several different systems. It is therefore possible to find to what extent these systems agree with one another about who is to be regarded as a psychiatric case in this setting, and to what extent the tests agree with each other concerning common conditions such as depressive illnesses and anxiety states.

If a diagnosis of psychiatric illness from the research interview is used as the criterion for a psychiatric case, then assessments made by the general practitioner can be compared

with scores on a psychiatric screening questionnaire to determine their success in detecting psychiatric illness.

The present study took place in a number of different practices and compared assessments of psychiatric illness made by a pen and paper test — the general health questionnaire¹² — with those made by the general practitioners. The study was confined to patients with new episodes of illness, since problems of detection do not arise for patients with established illnesses.

Subsidiary aims of the study included documenting the proportion of new illnesses seen in the community in which a diagnosis of psychiatric illness could be made; comparing two research diagnostic systems in common use; and providing validity coefficients for the 28-item general health questionnaire in the primary care setting.

Method

The study took place in 15 general practices in the greater Manchester area. The participating doctors were not chosen on the basis of an expressed interest in psychiatry, but were all doctors who were willing to participate in a research project, and whose practices represented a wide range of social settings.

In each practice a research assistant invited consecutive attenders to complete the 28-item general health questionnaire, and collected these before the patient went in to see the doctor.

Next, the general practitioners completed a short encounter form for every patient seen during the survey with a 'new' illness — this being defined as any complaint for which help had not been sought in the previous 12 months. The encounter form invited the doctor to rate each patient on a five-point scale for various combinations of physical and psychological illness, as shown on Table 1. The study continued for approximately three weeks in each participating practice.

Lastly, patients were selected for interview in such a way that as many as possible of those rated by the doctor as having a psychiatric illness (ratings 2, 3, 4 and 5), as well as those with a score of above five on the 28-item general health questionnaire were invited to be seen by the research psychiatrist (K.B.). In addition, a one in five sample of those rated 1, 'entirely physical illness', with low general health questionnaire scores were selected to allow an estimate of illnesses that had been missed by both the general practitioner and the screening questionnaire to be made.

Patients were usually seen in their homes by the psychiatrist within two weeks of their consultation with the general practitioner, without knowledge of their questionnaire scores. They were interviewed using the psychiatric assessment schedule¹¹ and diagnoses were made using both the British PSE-ID-catego method⁷ and the American DSM-3 method.¹³ The former method arranges subjects on an 8-point scale of severity of psychiatric disorder ranging from 'no psychiatric symptoms' to levels where psychiatric diagnosis can be made with certainty on the basis of replies to the present state examination, and uses a computer programme (catego) in order to produce familiar European diagnoses such as anxiety state, neurotic depression and retarded depression. The latter uses operational rules based on the third edition of the American Psychiatric Association's *Diagnostic and statistical manual*¹³ (thus, DSM-III) in

Table 1. Distribution of 283 psychiatric interviews between 590 patients with new illness, showing unweighted numbers of psychiatric cases for the two research systems plus weighted figures which allow for the different sampling fraction.

GP rating	GHQ score	No. of patients in consecutive sample	No. of patients interviewed	No. of psychiatric cases (weighted no.)	
				DSM-3 system	ID-catego system
Entirely physical illness	Low	273	54	2 (10.1)	2 (10.1)
	High	161	100	56 (90.2)	41 (66.0)
Physical illness with secondary psychiatric illness	Low	20	19	5 (5.2)	5 (5.3)
	High	24	20	15 (18.0)	13 (15.6)
Unrelated physical and psychiatric illness	Low	8	7	2 (2.2)	3 (3.4)
	High	21	16	12 (15.7)	9 (11.8)
Psychiatric illness with somatic symptoms	Low	18	12	5 (7.5)	3 (4.5)
	High	34	28	21 (25.5)	15 (18.2)
Entirely psychiatric illness	Low	4	2	0 (0.0)	0 (0.0)
	High	27	25	19 (20.5)	21 (22.7)
Total		590	283	137 (195.0)	112 (157.6)

GHQ = general health questionnaire

order to make roughly equivalent American diagnoses such as 'generalized anxiety disorder' and 'major depressive disorder'. Both systems require symptoms to have been present for not less than two weeks, and both stipulate certain combinations of symptoms in order to justify each diagnosis.

Results

During the period of the study the research assistant approached 2228 patients, of whom 1823 (82%) agreed to complete the general health questionnaire. The general practitioners completed 590 encounter forms for new illnesses for these patients. Of these, 323 patients had low scores on the screening questionnaire and 267 had high scores. Of the 323 low scorers 273 were rated by the general practitioners as having an 'entirely physical illness', and a random sample of 54 of these were interviewed. The research assistant arranged interviews with as many as possible of the 156 patients thought psychiatrically ill by the general practitioners, as well as the 161 not thought ill but who had high scores on the general health questionnaire. In the event, many patients were impossible to track down or refused to be interviewed, but interviews were obtained with 229 of the 317 (72.2%). Thus interviews were obtained for a total of 283 patients. It can be seen on Table 1 that psychiatric diagnoses using the DSM-3 criteria could be made in 137 of these patients, while using the rather more restrictive 'ID5' level of the ID-catego method they could be made in 112 patients.

In order to make allowance for the different sampling fraction in each row, these figures can now be weighted back to make them representative of the 590 consecutive new illnesses, and this is shown for each diagnostic system in Table 1. The weighted figures show that about one-third of consecutive new illnesses reach the DSM-3 criteria for psychiatric illness (195.0 out of 590, 33.2%). Of the 195.0 cases, 100.3 (51.4%) were rated as 'entirely physical' by their doctor. Such patients have been described previously as having 'hidden psychiatric illnesses',⁴ and it is known that such patients have often presented to their doctor with somatic complaints.¹⁴ The more restrictive ID-catego research criteria indicate that about 27% of new illnesses are psychiatric cases (157.6 out of 590). Of the 157.6 cases, 76.1 (48%) are 'hidden' from the general practitioners. The use of the general health questionnaire in patients rated as having 'entirely physical' illness would result in the majority of such illnesses being detected.

If it is reasonable to use the research assessments as our criteria

of psychiatric illness, then we can compare the general health questionnaire with the average figures obtained for the 15 general practitioners in the detection of psychiatric illness: the results of this comparison are shown as Table 2. The 'positive predictive value' of a screening test refers to the likelihood that someone thought to be a possible case by the screening procedure will be found to have an illness at subsequent clinical assessment. It can be seen that for either set of criteria, there is little to choose between the general health questionnaire and the general practitioner in this important respect. However, the questionnaire is superior to the general practitioner in terms of 'negative predictive value': that is to say, someone with a low score on the general health questionnaire will have over a 90% chance of being normal at subsequent assessment, but because of the 'hidden illnesses' the figure is lower for the general practitioners. The general practitioners are superior to the general health questionnaire in terms of specificity which means that false positives are more likely with the general health questionnaire than with the general practitioners. However, the dramatic difference between the two is seen in the figures for sensitivity, which is a measure of whether confirmed cases have been identified by the screening procedure. The figures indicate that the

Table 2. Characteristics of the general health questionnaire and general practitioners as screening tests against the two research diagnostic systems for 590 patients with new illness.

	Percentage of patients			
	DSM-3 system		ID-catego system	
	GHQ	GP	GHQ	GP
Positive predictive value (any diagnosis)	63.6	60.7	50.6	53.1
Negative predictive value	92.2	76.9	92.6	82.5
Specificity	75.4	84.5	69.4	83.0
Sensitivity (any diagnosis)	87.1	48.5	85.0	52.1
Sensitivity by diagnosis:				
Anxiety state/generalized anxiety disorder	89.3	46.4	86.2	64.4
Neurotic depression/major depressive disorder	89.8	47.9	93.0	55.1

general practitioners are missing approximately half the cases, whereas the general health questionnaire is picking up between 85 and 87% of them. The low sensitivity of the general practitioners is seen for both anxiety states and depressive illnesses.

It is now possible to put these figures together in order to see how much agreement there is between the two case-finding procedures (Table 3). If an investigator requires to find as many of the psychiatrically ill patients as possible, then by selecting those who are thought to be ill by the general practitioner, by the questionnaire or by both the investigator will collect nearly 95% of the confirmed cases, although this will be at the expense of detecting many 'false positives'.

Table 4 shows the research diagnoses made by the two systems: it can be seen that the illnesses are almost all depressive illnesses and anxiety states. The rather looser American DSM-3 diagnostic system makes more anxiety diagnoses than depression, the reverse is true for the British ID-catego system.

Table 5 investigates the relationship between the two diagnostic systems. It can be seen that in over 80% of the patients (228 out of 283) there is agreement between the two systems concerning who should be regarded as a 'case'. The DSM-3 system is more inclusive than ID-catego, in that while 40 cases by the former system are non-cases by the latter, the reverse is true for only 15 cases. However, the agreement for individual diagnoses

Table 3. Agreement between the general health questionnaire and general practitioners as identifiers of normality (specificity) and as case finders (sensitivity) for 590 patients with new illness.

	Percentage of psychiatric cases detected	
	DSM-3 system	ID-catego system
<i>Confirmed non-cases (specificity)</i> (n = 395.0)		(n = 432.4)
GP correct; GHQ incorrect	18.0	22.1
GP incorrect; GHQ correct	8.5	8.1
Both correct	66.8	61.2
Both incorrect	6.7	8.6
<i>Confirmed cases (sensitivity)</i> (n = 195.0)		(n = 157.6)
GP correct; GHQ incorrect	7.4	8.3
GP incorrect; GHQ correct	46.4	41.7
Both correct	41.1	43.6
Both incorrect	5.1	6.4

n = number of patients (weighted).

Table 4. Comparison between the diagnoses of the two research systems for 590 patients with new illness.

	Percentage of patients with new illness	Percentage of psychiatric cases
<i>DSM-3 system</i> (n = 590)		(n = 195.0)
Generalized anxiety disorder	15.8	47.8
Major depressive disorder	12.7	38.4
Dysthymic disorder	3.1	9.3
Other DSM-3 diagnosis	1.5	4.5
Not ill	66.9	N/A
<i>ID-catego system</i> (n = 590)		(n = 157.6)
Neurotic depression	12.1	45.2
Anxiety state	9.2	34.0
Retarded depression	5.6	20.8
Not ill	73.1	N/A

n = number of patients (weighted).

Table 5. Comparison between the diagnoses of the two research systems for the 283 patients interviewed (unweighted numbers).

DSM-3 system	ID-catego system			
	Anxiety state	Neurotic depression	Retarded depression	Not ill
Generalized anxiety disorder	22	11	2	32
Major depressive disorder	8	31	10	3
Dysthymic disorder	3	4	2	2
Other DSM-3 diagnosis	2	1	1	3
Not ill	6	6	3	131

is poor. It can be seen that many of those diagnosed as having 'generalized anxiety disorder' are non-cases by the ID-catego system, and that of the 86 patients receiving an anxiety diagnosis from either system, only 22 (25%) are diagnosed by both systems. Depression is slightly better: of the 82 patients diagnosed by either system, 41 (50%) are diagnosed by both systems.

Discussion

Although the newer psychiatric research assessments represent a great technical advance on the unstandardized clinical assessments that they replace, it has been shown that there is not complete agreement between them about what is thought to constitute a psychiatric case. It is therefore to be expected that general practitioners will have their own views about who is to be considered a case and these may differ from the views of research psychiatrists. The lack of agreement between the two research systems is because each requires slightly different combinations of symptoms for each equivalent diagnosis, and the time for which symptoms must have lasted in order for a diagnosis to be made is also different. For example, in the DSM-3 system anxiety symptoms must have lasted at least four weeks in order to justify a diagnosis of 'generalized anxiety disorder', but depressive symptoms need only have lasted 14 days to justify 'major depressive disorder'. The patients classified as psychiatrically ill by the general practitioners but who did not reach research criteria for illness had sometimes recovered sufficiently to have made them non-cases, and had sometimes not had their symptoms for long enough to qualify for a research diagnosis.

However, patients who satisfied research criteria for psychiatric illness but who were classified as having entirely physical illnesses by their doctor form a more disturbing group. At the interview such patients described to the research psychiatrist undoubted psychiatric illnesses that had lasted at least two weeks, yet their distress was not apparent to their doctor. These patients are somatizing their psychological problems and their distress is usually picked up by the general health questionnaire. They are often given symptomatic treatment for their physical complaints, or sent to hospital for physical investigations. The greater sensitivity of the questionnaire shown in Tables 2 and 3, might detect such disorders, and lead to a more appropriate management of the presenting problem.

We have shown that psychiatric illness as defined by modern research criteria occurs in between one-quarter and one-third of all new episodes of illness seen in primary care settings. Most of these illnesses occur either in conjunction with known physical disease or as 'somatized' presentations of what is basically a psychiatric disorder: pure psychiatric onsets are actually quite rare, and account for only 5% of new illnesses.¹⁴

The main contribution that can be made by a simple screening test such as the general health questionnaire is shown to be in increasing the number of cases that might be detected, but such increased detection will be at the expense of numerous false positives. These false positives will usually be found to be experiencing transient mood disorders, and they will appreciate an opportunity to talk to their family doctor: the spontaneous remission rate is high in such patients. However, the higher the general health questionnaire score, the more likely is the patient to be diagnosable, and the less likely is the disorder to remit spontaneously.^{15,16}

General practitioners have themselves expressed dissatisfaction with the taxonomy of neurosis offered to them by psychiatry, and the present work indicates that agreement between diagnostic systems is poor for the common mood disorders, since there is an unbroken continuum between states of normality and mood disorder, and between the two major varieties of mood disorder. In a companion paper¹⁷ we show that anxiety-related symptoms and depression-related symptoms can be regarded as the two major dimensions underlying mood disorders, but that these dimensions are highly correlated with one another. The lack of complete agreement between the two major research systems shown here and in previous studies¹¹ merely reflects the fact that each system is marking out slightly different territory on the underlying dimensions.

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Acknowledgements

We are most grateful to the 15 general practitioners who collaborated with us in this research, as well as to the Jules Thorn Charitable Trust who provided financial support.

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