PRACTICE OBSERVED

Practice Research

Psychiatric morbidity in a general practice in an Indian city

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Abstract

Psychiatric morbidity in an Indian general practice was studied using the 12 item version of the General Health Questionnaire to screen 882 patients who represented 9000 consecutive adult patients attending the practice. The questionnaire was valid with a cutting score of 12 when compared with section 1 of the standardised Indian Psychiatric Survey Schedule. The probable prevalence of psychiatric morbidity was 35.9%. The general practitioner identified only about 25% of patients. Five of the 12 questions on the General Health Questionnaire had a higher discriminatory capacity, and the performance of the patients on these five questions was valid when compared to section 1 of the Indian Psychiatric Survey Schedule.

Introduction

Many surveys of psychiatric morbidity in general practice have been carried out in the West but none have been reported for India. Even in the West a considerable proportion of patients with psychiatric problems are not identified in general practice. This is probably more acute in Indian general practice. In a small survey in general practice in Bangalore carried out by Shivagaudan and colleagues

general practitioners thought that 10% of their patients (mean SD 9.9% (10.64%)) suffered from psychiatric illness. The obvious way to help general practitioners to identify most of their patients with psychiatric problems is to improve the training in psychiatry for medical undergraduates and to offer training in psychiatry to general practitioners. Another effective method would be to have a short list of questions to screen and thus identify these patients. A set of questions would be particularly useful in India where busy clinics allow only a few minutes for the doctor to see each patient.

No such screening tool is available for use in India. Therefore this study was undertaken: (i) to identify the psychiatric morbidity in an Indian general practice by using the 12 item General Health Questionnaire (GHQ-12) to find the proportion of patients identified as having psychiatric problems by the general practitioner, and (ii) to extract from the GHQ a smaller set of questions which were better discriminators.

Methods

A group practice of three doctors in Bangalore was chosen for this study. Situated in the centre of the city, the practice drew an average of 70 patients a day from almost all social classes of the city's population. Having more than one doctor in this busy practice ensured that the routine clinical work and the study did not adversely affect each other.

For screening the 12 item GHQ, which was developed by Goldberg,¹ was used because it was short and easy to administer in a busy practice. The questions relate to symptoms and subjective experiences. With a cutting score of 12, Goldberg had found its overall misclassification rate to be 14.5%, with a sensitivity and specificity of 93.5% and 78.5% respectively. Though the GHQ was designed for self-administration, a large proportion of patients who attended this practice was illiterate. A vernacular version was prepared after repeated trials on patients to ensure that when the doctor asked the questions appropriate meanings were conveyed and understood and that the patient's responses were recorded faithfully.

One of the doctors (SK), who saw all the patients who attended the practice, selected every tenth adult patient as a subject for this study (the 'GHQ patient'). He recorded his subjective clinical impression about the

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psychiatric state of each of those patients. He then referred the patients to another doctor (NP), who administered the GHQ after informed consent had been obtained.

Every tenth GHQ patient was referred to another doctor (NP) who administered section 1 of the Indian Psychiatric Survey Schedule (IPSS-1), which had been developed by Kapur and others.² These patients were called the 'IPSS patients'. They were used to validate the GHQ by a method thought to be appropriate under the circumstances, i.e. that of a full psychiatric interview. The doctors in the practice knew that patients would not wish to wait long, and only a few follow up appointments. It was therefore imperative that a few minutes be spent on the GHQ. The patients were interviewed in place of a full psychiatric interview. The IPSS-1 satisfied this requirement and it has been standardised for reliability and validity in the local language. It consists of detailed questions about 12 somatic symptoms that are commonly associated with psychiatric illness and 36 psychological symptoms. The doctor (NP) who administered the IPSS-1 was trained in its use.

By the time 100 GHQ patients, among whom were 30 IPSS patients, had been selected we realised that it would be possible to select a larger sample of IPSS patients since it took on average only 20 minutes to administer the IPSS-1. Therefore, every fifth GHQ patient was then selected for the IPSS-1. The study was conducted until 900 GHQ patients had been contacted, among whom were 150 IPSS patients. These 900 patients represented 9000 consecutive patients who attended the practice. Every tenth patient from the first 300 GHQ patients provided the first 30 IPSS patients, and every fifth patient of the remaining 600 GHQ patients provided the remaining 120 IPSS patients. This yielded an overall sampling ratio of 1:6.

Two psychiatrists independently assessed the protocols of the IPSS-1 to determine the psychiatric state of the IPSS patients. The responses of the IPSS patients on the GHQ were examined for different cutting scores compared to the normal or case state for validating the GHQ. The measures of validity were sensitivity, specificity, overall misclassification rate, and index of agreement (Kappa coefficient). The response of the GHQ patients to each of the 12 questions was examined by the proportion test. Five questions that showed higher discriminating ability, as reflected by higher χ^2 values, were chosen as the short set of questions for screening. Tests of validity were carried out for these five questions among the IPSS patients.

Results

Among the GHQ patients the age and sex distributions were statistically similar in the first 300 patients, the remaining 600 patients, and the total population of 900 patients. Furthermore, the percentages of patients with psychiatric problems in the first 30 IPSS patients, the remaining 120 patients, and the total of 150 patients were statistically similar. Therefore, the sample of 150 IPSS patients was considered to be a systematic sample of the 900 GHQ patients.

Eighteen patients (2% of the total sample) refused to answer the GHQ. Of these, six IPSS patients (4% of IPSS patients) refused the IPSS-1. Thus, the protocols of 882 GHQ patients and 144 IPSS patients were available for analysis. The sample consisted of 524 men (mean age 36 years) and 358 women (mean age 37.4 years).

The independent assessments of the IPSS-1 protocols by two psychiatrists (CS and a colleague) for determining the psychiatric state showed a high rate of agreement (Kappa coefficient, $K=0.92$) (table 1). Both psychiatrists independently agreed that there were 97 normal patients and 47 cases.

The IPSS patients were divided according to their GHQ scores into low scorers and high scorers for each of the three cutting scores of 0/1, 1/2, and 2/3. Measures of validity were calculated from the distribution of these groups among the normal patients and cases. In table 1 the cutting score 1/2 emerges as the best. With the cutting score of 1/2 there were 312 (35.3%) high scorers among the 882 GHQ patients. The mean (SD) age of high scorers was 38.7 (14.6) years compared to 35.9 (13.5) years for low scorers.

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Table 1—Agreement between the two independent psychiatrists on whether the IPSS patients were normal or cases

Psychiatrist (CS) 97 2 3 95

Cases 2 47 40 89

Total No. 99 47 144

Index of agreement by Kappa coefficient: $K=0.92$ IPSS-1 Indian Psychiatric Survey

TABLE 1—Measures of validity for the 12 item GHQ when compared with IPSS-1 (n=144)

Cutting score for GHQ	Normals	Psychotics	Overall misclassification rate (%)	Index of agreement (Kappa coefficient)
0/1	97.4	6.4	11.20	0.845
1/2	87.2	54.8	6.14	0.916
2/3	80.5	56.8	9.01	0.789

Cutting scores of 1/2 and 2/3 are considered probable normals, and those scoring 0/1 are considered probable cases.

GHQ—General Health Questionnaire.

scorers. There was a high percentage of women and unemployed among the high scorers, whereas there were few students (16.7%). Using the validity coefficients and the conversion formula, the probable prevalence of psychiatric morbidity for the total population was estimated to be 35.9%, with a cutting score of 1/2. By his own subjective clinical assessment the general practitioner identified only 11% of his patients as being psychiatrically ill (table 1); roughly only 25% of the probable cases.

The responses of the 882 GHQ patients on each of the 12 questions was examined by the proportion test to assess the discriminatory potential of the questions, as shown in table IV. Based on the higher χ^2 values questions 9, 12, 5, 7, and 2 were chosen as better discriminators for the shorter version of the GHQ. When the responses of the normal patients and cases among the 144 IPSS patients were examined questions 12, 9, 5, 7, and 2 re-emerged as the best discriminators (2 values 9.69, 8.17, 7.5, 6.46, and 5.56 respectively).

TABLE III—Cases as identified by the general practitioner compared to the GHQ percentages in parentheses

Identified by the general practitioner	Identified by GHQ		Total No.
	Low scorers (score 0 or 1)	High scorers (score 2 or more)	
Thought to be normal	519 (98.1)	254 (25)	793 (89.9)
Thought to be a case	11 (1.9)	78 (25)	89 (10.1)
Total No.	570 (100)	312 (100)	882 (100)

TABLE IV—Responses of the GHQ patients on each of the questions, arranged in the order of decreasing a value (proportion case: percentage in parentheses)

Question	Low scorers (score 0 or 1)		High scorers (score 2 or more)		Z
	Negative answer (score 0)	Positive answer (score 1)	Negative answer (score 0)	Positive answer (score 1)	
1	554 (61.2)	328 (36.8)	254 (25)	242 (22)	24.22
2	542 (60.7)	340 (38.3)	78 (25)	240 (22)	24.46
3	547 (61.1)	335 (37.8)	189 (19)	173 (16)	15.78
4	540 (60.5)	342 (38.5)	166 (17)	147 (14)	14.76
5	543 (60.8)	339 (38.2)	215 (22)	177 (16)	13.15
6	563 (62.1)	319 (36.1)	225 (23)	179 (16)	13.29
7	561 (61.9)	321 (36.3)	211 (22)	173 (16)	13.71
8	549 (61.3)	341 (38.7)	241 (24)	173 (16)	12.67
9	566 (62.3)	313 (35.3)	249 (25)	163 (15)	10.91
10	569 (62.6)	310 (35.0)	257 (26)	158 (15)	10.21

TABLE V—Measures of validity for the five item GHQ when compared with IPSS-1 (n=144)

Cutting score for five item GHQ	Normals	Psychotics	Overall misclassification rate (%)	Index of agreement (Kappa coefficient)
0/1	100.00	87.43	8.33	0.8221
1/2	82.97	95.88	8.33	0.8961
2/3	74.47	95.88	11.11	0.7187

When the scores of the IPSS patients on these five questions alone were considered for calculating the measures of validity (table V), the cutting score of 0/1 stood out as a better discriminator, with 1/2 close behind.

Discussion

The refusal to participate of only 2% of patients indicates the cooperation that patients extend to their family physicians. The high level of agreement by Kappa coefficient ($K=0.92$) between the two independent psychiatrists about whether the IPSS patients were normal or cases establishes the reliability of such an assessment. The fact that the assessment was based on the patients' responses to detailed inquiries on 12 somatic and 36 psychological symptoms permits the conclusion that this method of case finding is most likely to yield results similar to a full psychiatric interview. Moreover, Kapur *et al.* established that the data collected on IPSS-1 by a trained non-medical person is as reliable as that collected by a psychiatrist's interview.² Thus the degree of validity for the 12 item GHQ as shown in table II with a cutting score of 1/2 can be accepted with a fair degree of certainty. Further studies are necessary, however, to confirm this finding by full psychiatric interview.

The higher percentage of high scorers among women (41.7% against 31.2% for men) seems to be a universal trend that is related either to exposure to greater stress or to increased vulnerability, or both. The higher percentage of high scorers among the unemployed is self-explanatory. But the few high scorers among students (16.7%) is likely to be related to the dependent role of the student in Indian families.

The general practitioner identified only 25% of the probable cases.

Bringing the visiting diary up to date

JAMES WILLIS

Abstract

A method is described for the systematic assessment and review of long term dependent patients in a small practice using a personally developed computer program and assessment scale.

Introduction

The long term supervision of dependent patients at home is part of good general practice. A computerised dependent patient review index has been in use in our practice of two partners and 3400 patients for the past three years. For the previous 11 years I had used a card index to keep track of my visits to patients with chronic illness and before that a traditional visiting diary.

We use our computer system to collect details of all patients who are over 74 years of age and those of younger patients who have a

high scores (table III), which underlines the extent to which patients with psychiatric problems are missed and the need to strengthen psychiatric training for medical undergraduates and general practitioners.

The validity coefficients of the five item GHQ, the five questions on the 12 item GHQ which showed highest discriminatory potential, indicate its usefulness as a screening tool with a cutting score of 0/1 or even 1/2. But caution is required. We do not know whether these five questions would have performed as well when administered independently of the remaining seven questions. The likelihood of the remaining seven questions influencing the response of the patients to these five questions cannot be ruled out from the results of this study. Hence, there is a need to test these five questions alone against full psychiatric interviews. What is promising about these five questions, however, is their potential use in helping busy general practitioners to screen their patients quickly for psychiatric morbidity.

We thank Dr Shikhar Sheshadri for help in independently assessing the protocols of the IPSS-1.

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major disability. The system incorporates a simple measurement of each patient's level of dependency and organises the review of chosen patients flexibly and efficiently.

Method

ENTERING PATIENTS IN THE INDEX

To assess a patient for inclusion in the index we complete a special card (figure). The name, address, and date of birth are entered at the top of the card and then one of each of nine groups of dependency assessment attributes is ticked to describe the patient's circumstances as accurately as possible. The assessment scheme was described in another paper.¹ Finally, we indicate whether reminders are required for reviewing the patient and at what intervals.

Later, the information on the card is typed into the computer with an area code to indicate the position of the patient's home. The code is entered immediately after the address with the help of a simple map which appears on the screen at the right moment. The eight area codes enable visits to be grouped according to an eight week cycle. Intervals of review that are longer than eight weeks are adjusted automatically to a multiple of eight, but the pattern has to be broken when more frequent intervals are specified. Entering the details takes about a minute. A reference code and dependency score are then worked out automatically.

Each of the dependency attributes has an associated weighting. For example, under the heading "mobility" "bedfast" carries a weighting of 15,

Dependency Assessment Form

Surveillance Date of birth

Address

One from each of the following sections to be ticked

CATEGORY

☐ UNDER 75 CHRONIC STATE
☐ UNDER 75 CURRENT PROBLEM
☐ ELDERLY (75+)

SOCIAL

☐ LIVING ALONE
☐ LIVING WITH (WIFE) SPOUSE
☐ LIVING WITH (HUSBAND) SPOUSE
☐ LIVING WITH COMPANION

ACCOMMODATION

☐ OWN HOME - ISOLATED
☐ LIVING IN COLLEGES
☐ IN PRIVATE RESIDENCE
☐ IN SHARED RESIDENCE

HOUSING CONDITIONS

☐ HOUSING UNSATISFACTORY
☐ HOUSING UNSATISFACTORY
☐ HOUSING UNSATISFACTORY

MOBILITY

☐ NORMAL ACTIVITY - INSIDE & OUT
☐ MOVES RESTRICTED - OUT AROUND
☐ MOVES RESTRICTED - OUT WITH HELP
☐ OUTDOOR - NEEDS HELP TO TOILET
☐ BEDFAST

MENTAL STATE

☐ DEEPER - MENTAL STATE
☐ DEEPER - MENTAL STATE
☐ DEEPER - MENTAL STATE

SENSES

☐ DEEPER - MENTAL STATE
☐ DEEPER - MENTAL STATE
☐ DEEPER - MENTAL STATE

CONTINUENCE

☐ DEEPER - MENTAL STATE
☐ DEEPER - MENTAL STATE
☐ DEEPER - MENTAL STATE

GENERAL ABILITY TO COPE

☐ DEEPER - MENTAL STATE
☐ DEEPER - MENTAL STATE
☐ DEEPER - MENTAL STATE

Dr's initials Date completed

Code No. Date entered

Score (see text to patient's index after entering in computer)

The card used for the collection of patient details.

whereas "normal activities inside and out" scored 0. The dependency score for a patient is the sum of the weightings attached to that patient's set of dependency attributes.

The index is filed in the patient's notes until circumstances change appreciably. A new card is then completed and the computer record amended.

WEEKLY REPORT

The main function of the program is to work out and print a list of patients who are due for review by each doctor in the current week. The list includes their addresses, ages, and dependency scores. Most patients in the index are not, however, under regular review, and their names are added to the report in the weeks of their birthdays, which enables us to check their notes for outstanding problems and occasionally to pay unexpected birthday visits. Our computer works out and prints a weekly report in two and a half minutes and any number of weeks ahead can be printed out—for example, before holidays.

OTHER USES

Because the dependency score is expressed as a single figure the records can be examined automatically and the scores compared. The 20 patients

who score highest are then listed in descending order of the severity of their problems. While the computer is doing the calculations the average age, average dependency score, and total dependency score for the patients. This is an attempt to measure and record the fluctuations that seem to occur in the burden of serious problems in the practice.

A list of patients with a specified attribute such as "housebound" can be printed on the screen or on paper. Searching 250 records for a feature takes about eight seconds.

A complete summary can be printed out of the numbers and percentages of patients with each of the dependency attributes. Names are not included, and this record can be used to compare the pattern of dependency at different times and, potentially, in different practices.

A complete list of all the elderly patients, arranged alphabetically and by year of birth, can be printed out on demand for checking against the practice age-sex register.

To keep the main file as small and efficient as possible the records of patients who have died or moved away are periodically transferred to another section of the disk.

Results

The system operates in our practice at the present time as follows. Our total list size (January 1986) is 1407 patients, including 500 who are aged 65-74 and 238 who are over 74. Two hundred and sixty three (7.7% of the total practice list) are in the index. After assessment, 110 of these have been chosen for regular review in the following intervals: two weeks, one patient; four weeks, nine patients; eight weeks, 12 patients; 16 weeks, 31 patients; 24 weeks, five patients; 32 weeks, 36 patients; 40 weeks, four patients; 48 weeks, seven patients; and 64 weeks, five patients.

The details constantly change, but if this pattern was extrapolated over the next year it stands it would result in an average of seven patients due for review in each week (range two to 17). Of these, most would be visited at home, but for others a review of the notes would suffice to confirm that a recent contact had been made.

Thus spending only one or two working hours a week two doctors would maintain regular contacts with 110 selected patients. In addition, we would be reminded about the birthdays of a further 149 elderly patients.

Discussion

The system of assessing and reviewing dependent patients is more than a specialised patient index incorporating an assessment scale, it is also a management plan. There are many such applications for small, self contained, personally tailored indexes in general practice. A diabetic index, incorporating a management plan for each patient is one obvious example.

Indexes like this with a small number of patients are flexible and the program can be operated rapidly. One advantage over large, professionally designed programs is the ability to adapt the system to reflect his everchanging requirements and his growing understanding of what he is trying to achieve.

This is an invaluable tool in our practice. It has largely removed the worry from trying to remember which patients are overdue for review and has given a clearer picture of the pattern of dependency in the practice. It uses contemporary technology to enhance a neglected aspect of traditional general practice and shows that computers can be made to promote human values, given the human will to make them do so.

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