Brit. J. Psychiat. (1966) 112, 549–555

Symptom Questionnaire Validity in Assessing the Need for Psychiatrists' Care*

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Introduction

In recent years there have been an increasing number of attempts to survey the distribution of psychiatric morbidity, or to estimate the need for psychiatric treatment, in the general population. Various methods of defining or diagnosing psychiatric illnesses have been used (Blum, 3; Scott, 20). These methods include interviews by psychiatrists (Lin, 17; Essen-Müller, 13; Hagnell, 14); the judgment of family physicians (11; Kessel, 16; Shapiro and Fink, 21); the use of self-administered symptom check lists (White *et al.*, 23); and structured interviews by non-psychiatrists relating to symptom occurrence, attitudes, personality scales, etc. This paper outlines an attempt to determine some of the relationships between the results of a symptom-questionnaire; the diagnoses recorded by physicians; and the physicians' request for psychiatric consultation.

Purpose and Method

In recent years increasing emphasis has been placed on the role of physicians (non-psychiatrists) in the early diagnosis and care of psychiatric morbidity. The frequency of psychiatric morbidity recognized and recorded by non-psychiatrists is considerable (Watts *et al.*, 22). Not all of the patients who are recognized as having some type of psychiatric illness are recorded as such in their medical history; nor is there correspondence between recording of psychiatric morbidity in the medical history and referral for psychiatric consultation. This study was intended to determine some of these relationships in a situation where opportunities for medical assessment and the recording of the medical history were enhanced, and psychiatric consultation was available.

Medically indigent* admissions to a medical ward of a teaching hospital were routinely given the Mood and Feeling section of the Cornell Medical Index. The Cornell Medical Index Health Questionnaire (CMI) is a questionnaire designed to collect a large volume of data concerning an individual's physical and mental health with a minimum expenditure of the physician's time. It was intended to serve as an adjunct to and not a substitute for the oral interview (Brodman *et al.*, 4). The CMI is self-administered, consisting of 195 questions requiring the encircling of YES or NO answers. Of the 195 questions twelve deal with "inadequacy", six with "depression", nine with "anxiety", six with "sensitivity", nine with "anger" and nine with "tension". The questions avoid technical terms and are couched in informal language (Brodman *et al.*, 4–9).

Interpretation of the CMI may be clinical, by scanning the nature of positive responses; or statistical, by totalling the number of positive responses into a score. Various scores on the full CMI have been suggested as criteria of "emotional disturbance" (Brodman *et al.*, 6, 7; Arnhoff *et al.*, 1; Ryle and Hamilton, 18; Hamilton *et al.*, 15). More recently attention has been directed to the Mood and Feeling

* Presented at the 120th Annual Meeting, American Psychiatric Association, Los Angeles, May 4–8, 1964.

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This Research was assisted by funds provided by the Mental Health Grant (No. 609-5-138) of the National Health Grants Programme (Canada) and the Mental Health Research Fund of the Canadian Mental Health Association.

* The term "medically indigent" refers to persons who can meet their day-to-day needs from personal resources but cannot meet the cost of hospital care.

section of the CMI, and cut-off points of 7 or 10 positive responses considered as indicating "emotional" or psychiatric disturbance (White *et al.*, 23, Culpan *et al.*, 12, Brown and Fry, 10). It has the self-administration advantages of reducing interviewer variation, and the possible disadvantages of being affected by the subjective abilities (intellectual, perceptual and motor), motivations, attitudes and understanding (reading ability, symptom language). It was selected for this study because of its brevity, ease of scoring, and widespread use.

The questionnaires were returned directly to the Department of Psychiatry and not scrutinized until the completion of the project. Parallel with this the patients were subjected to the usual medical work-up. A psychiatric consultation service had been available to the medical ward for two years prior to the institution of the project and requests for psychiatric consultation from the medical staff continued in the same manner. Some time after the last questionnaire was received, the CMI scores were determined, and the medical charts were scrutinized for definite psychiatric diagnoses (conforming to the Standard Nomenclature of the American Hospital Association) or history of previous psychiatrist's care.

Concomitantly, the CMI was distributed to new patients (also medically indigent) attending the Psychiatric Outpatient Department of the same hospital. This procedure was intended to assess the effectiveness of the CMI in psychiatric patients of similar social background to the in-patients. Of 85 new psychiatric outpatients 70 per cent. (C.L. .95 59–79 per cent.) answered ten or more questions of the Mood and Feeling section positively (hereafter called high scores).

The questionnaires were distributed at weekly intervals as part of the regular ward procedure by the charge nurse. Although internes rotated through the ward, the assistant residents and attending staff-men were more consistent in their tenure.

Results

A. *Responses of Medical In-patients*

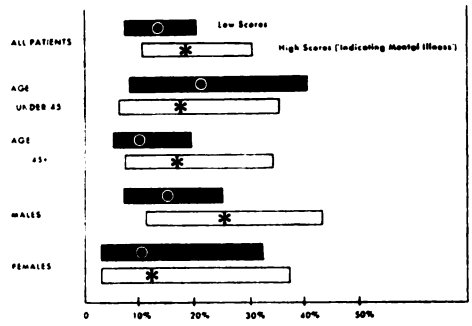
Of the 264 patients given questionnaires, seven (3 per cent.) refused to complete them. Three of the refusals were interviewed and after brief discussion agreed to complete the form. One patient attributed his refusal to not wanting to cause trouble for anyone by filling the form. Over one-quarter (N = 73) were unable to complete the questionnaire because of language difficulties, clouding of consciousness, or motor or visual defects.

Over one-third (C.L. .95 29–43 per cent.) of the 184 medical in-patients completing questionnaires had 10 or more positive responses. This proportion underestimates the frequency of psychiatric impairment among admissions, since patients with clouded consciousness had been excluded. Scores "indicating" mental illness were more frequent among females and younger patients, but these differences were not significant at the 0·05 level. Because this population was hospitalized, medically indigent, and had many social, occupational and economic problems in addition to illness, this frequency of high scores might not be as high in the general population.

B. *Frequency of Psychiatric Consultation*

Psychiatric consultation was requested for 15 per cent. of the questionnaire respondents, and was more frequent among males, and younger patients.

When consultation is related to the CMI



Medical In-patients Administered C.M.I.
(Mood and Feeling Section)
Percentage of Low Scoring and High Scoring Groups
Receiving Psychiatric Consultation

Percentage of Group Receiving Psychiatric Consultation, and 95% Confidence Limits

Fig. 1

https://doi.org/10.1192/bjp.112.487.549 Published online by Cambridge University Press

TABLE I

Medical Patients Administered Cornell Medical Index–(Mood and Feeling Section) Percentage of Low Scoring and High Scoring Groups, by Age and Sex, Receiving Psychiatric Consultation

	ALL PATIENTS			MALES			FEMALES		
	Total	Referred to Psychiatrists		Total	Referred to Psychiatrists		Total	Referred to Psychiatrists	
	N=100%	N	%	N=100%	N	%	N=100%	N	%
ALL QUESTIONNAIRES ..	184	27	15	100	18	18	84	9	11
Low scores.. ..	118	15	13	68	10	15	50	5	10
High Scores* ..	66	12	18	32	8	25	34	4	12
AGE UNDER 45 YEARS	59	11	19	34	7	21	25	4	16
Low Scores ..	29	6	21	19	3	16	10	3	30
High Scores ..	30	5	17	15	4	27	15	1	7
AGE 45 YEARS PLUS ..	122	15	12	64	10	16	58	5	9
Low Scores ..	87	9	10	48	7	15	39	2	5
High Scores ..	35	6	17	16	3	19	19	3	16

*10 or more positive responses

score, it is evident that the overall consultation rate was higher in high-scoring patients, 18 per cent. than in low-scoring patients, 13 per cent. As the overlapping confidence limits of figure 1 indicate, these results were not statistically significant. Similarly in the demographic subgroups the differences in consultation rates between high- and low-scorers is nowhere significant at the 95 per cent. confidence level.

High CMI scores alone seemed unrelated to psychiatric referral by the ward physicians in this particular situation. In contrast, it has been found (White *et al.*, 23) that among college freshmen the CMI did discriminate as to whether they subsequently attended the mental hygiene division of a University Health Service.

C. *Nature of Requests for Consultation*

Examination of the consultation requests indicates a possible difference in the nature of the requests. Of the fifteen low-scoring patients for whom psychiatrists' consultation was requested, five were psychophysiologic reactions. Among the other ten low-scorers, two were requests for differential diagnosis—"No somatic basis for complaints"; two had been identified as depressed; two for aberrant ward behaviour; and there were single requests for "aid adjustment to illness"; "placement of alcoholic"; "mental status of patient with subsiding brain syndrome". The remaining patient was a post cardiac-surgery psychosis, who had completed the questionnaire preoperatively.

In contrast, the twelve high-scoring patients for whom consultation was requested included no specific psychophysiologic reactions (one patient with enuresis was described as a ward problem). Three other patients were referred because of aberrant behaviour, "abnormal", "irritable", "crying". Patients referred after recognition of psychiatric illness included two schizophrenics and one personality disorder. Single patients were referred because of "disposition of chronic brain syndrome", "has had previous psychiatric treatment", "wishes to stop drinking", and "somatic complaints".

The nature of the requests seem to differ for high- and low-scorers.

D. *CMI Responses of High-scoring Patients Referred and Not-referred*

Among the 66 high-scoring patients, twelve were referred for psychiatric consultation. Item analysis of the nine items in Section Q (anger) revealed that for four of those questions the twelve referred patients had a higher frequency

TABLE II

High Scoring Patients: Proportion of Patients with Positive Responses Regarding Anger, by Referral Status

	REFERRAL STATUS			
	Referred N = 12		NOT Referred N = 54	
	%	C.L.$_{.95}$	%	C.L.$_{.95}$
Are you easily upset or irritated?	100%	74–100%	59%	45–72%
Does it make you angry to have anyone tell you what to do?	100%	62–100%	39%	26–53%
Do you flare up in anger if you can't have what you want right away?	50%	21–79%	17%	8–29%
Do you often get into a violent rage?	50%	21–79%	13%	5–24%

of positive responses than did the 54 non-referred patients. The questionnaires of referred patients were more frequently positive than the non-referred high-scoring patients for the questions listed in Table II.

High-scoring patients referred to psychiatrists more frequently admitted feelings of anger, irritability or rage than did the high-scoring non-referred patients. The higher frequency of these characteristics among referred patients may reflect the physicians' problems in dealing with these symptoms on the ward; or referral to a psychiatrist may be a punitive response on the part of a physician to whom hostility is expressed.

E. *Evidence of Mental Illness in Records of Non-referred Patients*

Finally, the medical records of a random sample of 20 low-scoring and 34 high-scoring patients, who had *not* been referred for psychiatric consultation, were reviewed in order to obtain some evidence of the extent to which CMI scores differentiated groups with greater or less liability to be recorded as mentally ill. The medical charts were examined for both the diagnoses made by the staff on the medical ward as well as for evidence of prior psychiatric hospitalization or care.

Among the sample of 20 low-scoring patients, two (10 per cent., C.L.$_{.95}$ 3–25 per cent.) were found with a definite history of psychiatric hospitalization at some time prior to the index admission. In contrast five of the 34 high-scoring patients' records examined (15 per cent. C.L.$_{.95}$ 5–30 per cent.) had records of previous psychiatric hospitalization.

None of the low-scoring patients had been given diagnoses on the discharge summary of psychiatric illnesses by the ward physicians, while ten of the 34 high-scoring (29 per cent. C.L.$_{.95}$ 15–47 per cent.) were so diagnosed; two each as anxiety state; personality disorder; chronic brain syndrome; alcoholism; and schizophrenia respectively. In addition there was one high-scoring patient with a history of a lobotomy performed in a mental hospital, and another with a diagnosis of schizophrenia recorded in the psychiatric out-patient depart-

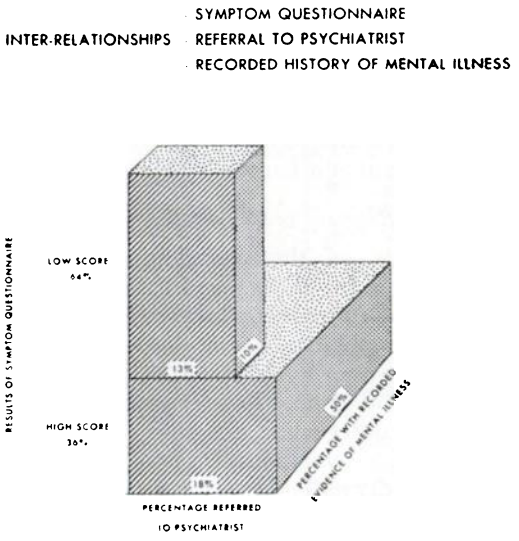


FIG. 2

ment. Altogether then, 17 of the 34 high-scoring patients were considered to have firm evidence of some form of mental illness, i.e. mental hospital care, psychiatric diagnoses recorded by the ward physician; or previous evidence of psychiatrists' care. (An additional four high-scoring patients had diagnoses of psychophysiologic reactions, but were excluded from these 17).

Thus, among the non-referred patients, 10 per cent. (C.L.$_{95}$ 3–25 per cent.) of the low-scoring patients and at least 50 per cent. (C.L.$_{95}$ 34–68 per cent.) of the high-scoring had definite evidence indicating some form of mental illness. Not all the patients with definite and recorded evidence of a psychiatric illness were referred for psychiatrists' care.

A high CMI score seemed to be more frequently associated with the independent diagnosis of a psychiatric illness by a physician, than was a low score. However, diagnosis did not automatically involve a request for psychiatric consultation. These relationships are illustrated in Fig. 2. Although high-scorers are more frequently recorded as having some form of mental illness than low-scorers, there is not a significant difference in the proportion referred for psychiatric care.

Discussion

Many problems regarding reliability of the symptom questionnaire have not been approached in this study. No attempt was made to replicate the administration of the CMI under varying conditions of time or situation. However, attention has been directed towards assessing the validity of the questionnaire results in terms of definite, recorded evidence of psychiatric illness, and in the physicians' utilization of psychiatric consultation.

The scores on the Mood and Feeling section of the CMI did not adequately differentiate whether patients were referred for psychiatrists' care. It would seem that there are other social, attitudinal and environmental factors involved in the decision to request psychiatric consultation, over and above the amount of gross psychiatric symptomatology reported by a patient. This is corroborated by the difference in responses of referred and non-referred high scorers; where responses indicating irritability and rage were more frequently associated with referral.

It may be argued that the judgment of physicians regarding the need for psychiatric consultation or care is inadequate; and that rather, the judgment of psychiatrists should have been applied. However it is likely that psychiatrists would have diagnosed some form of psychiatric illness in most of these patients.* In addition increasing emphasis is being placed upon the role of physicians in providing early diagnosis and ensuring early treatment, so the use of non-psychiatrists was considered justifiable.

Finally, in this in-patient population, it is evident that high-scorers on the CMI have a significantly higher proportion of psychiatric diagnoses made independently by their physicians, than did low-scorers. (However, the frequency of previous psychiatric hospitalization was not significantly different in the two groups).

It should be noted that a statistical score has been utilized for evaluating the CMI. It is possible that different results would have been obtained if the CMI responses had been clinically evaluated by a physician. Brodman *et al.* (9) compared physician and machine evaluations of the CMI responses of patients with psychoneuroses; and found that the physician identified 81 per cent. while the machine identified only 42 per cent. (For other diseases the physician and machine were more comparable in the proportion identified from CMI responses, 43 per cent. and 48 per cent. respectively).

Brown and Fry's (10) conclusion seems to be corroborated

> " . . . that the CMI is of value in picking

* The *suspicion* that the incidence of persons who come to the psychiatrist seeking treatment but who are turned away with a diagnosis of "no illness present" represent but a small fraction of those who apply for care, has been voiced by Blum (3), and Scheff (19). Avnet (2), describing an experiment wherein subscribers to a prepaid medical insurance plan, could obtain a psychiatric consultation for $5, upon self referral, stated:

> "Practically every patient who crossed the psychiatric threshold was judged at the initial interview to be in need of treatment and was treated if he returned."

out emotionally disturbed patients but that it does not give a 100 per cent. differentiation of neurotics from normals. It is very doubtful whether a questionnaire or other screening device could do this."

However, the questionnaire did not identify those for whom the attending physician considered psychiatric consultation was necessary.

Conclusions

1. The enumeration of psychiatric disability does not adequately estimate the need for psychiatrists' care.

2. The results of self-administered psychiatric symptom questionnaires, physician judgments regarding the need for psychiatric care, and the frequency of mental illness recorded in the medical chart are not synonymous.

Acknowledgments

The authors acknowledge the co-operation of the Nursing and Medical Staffs, Wards B-3 and B-5, Vancouver General Hospital; and the assistance of Mrs. Angela Maleszewski, Mrs. Heather Ballam, and Mr. John Howse.

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(*Received 13 August, 1965*)