A Short Clinical Diagnostic Self-rating Scale for Psychoneurotic Patients

The Middlesex Hospital Questionnaire (M.H.Q.)

By SIDNEY CROWN and A. H. CRISP

INTRODUCTION

In the practice of our department at the Middlesex Hospital, the need has been felt for a means of rapid quantification of common symptoms and traits relevant to the conventional diagnostic categories of psychoneurotic illness. Until now, none of the available British scales have fulfilled this requirement. The most widely used is the Maudsley Personality Inventory (Eysenck, 1959) with its subsequent modifications. This, however, although scientifically based, is limited to the assessment of broad categories such as “neuroticism” and “extraversion” which appear to go only a small way towards describing the wide variability of psychoneurotic disturbances. Foulds and his co-workers (Foulds, 1965) have for a number of years developed personality scales in which clinical sophistication and a rigorous methodology are combined. Their Symptom-Sign Inventory, however, consists of eighty questions which have to be presented orally. Furthermore, although the inventory covers psychotic disturbances, it is necessary to use an additional questionnaire, the Hysteroid-Obsessoid Questionnaire (Caine & Hawkins, 1965) to complete the spectrum of psychoneurotic illness. Moreover, the concept of psychiatric illness developed by these workers is individual rather than conventional in a number of respects. The Tavistock Self-Assessment Inventory (Sandler, 1954) is too long for the present purposes (876 items in six booklets). The Taylor Manifest Anxiety Scale (Taylor, 1953) is short and convenient, but it measures one dimension only.

As many doctors, including psychiatrists, find it useful to think in terms of orthodox clinical categories for diagnostic, therapeutic, prognostic and research purposes, it was decided to design and attempt to validate a self-rating scale adapted to these categories, taking the patient 5–10 minutes to complete and capable of being rapidly scored by the doctor or an assistant.

The Middlesex Hospital Questionnaire (M.H.Q.)

On a basis of clinical experience the writers formulated a number of questions covering five groups of symptoms and traits: free-floating anxiety, phobic anxiety, obsessive-compulsive traits and symptoms, somatic symptoms, depressive symptoms. These were circulated, uncategorized, independently to two consultant psychiatrists and to one non-medical clinical psychologist, who were asked to say to which of the five categories they felt the questions belonged, to criticize unclear wording and to suggest further questions. A preliminary form of the test was then made up, consisting of 60 questions, 10 in each of the above five categories and 10 additional questions felt by at least two of the five of us to be valid, although categorization could not be agreed upon. As will be seen, these additional questions were dropped at a later stage. Two or three alternative answers were given for each question. We deliberately used common speech in the questions rather than clinically more accurate but stilted speech. “Double-barrelled” questions were used, e.g. if we were trying to measure somatic symptoms it was immaterial whether the patient complained of “feeling sick” or “indigestion”, so both were included in the same question. The answers were worded differently in each question wherever possible, in an attempt to get the respondents to think about them rather than blindly answer “yes”,...
"no", "sometimes", etc. Within the answers there was a continuum from great to less to least, but the side on which "greatest" or "least" was put was varied so as to avoid the possibility of persons tending to tick answers on the left or the right. The questions were ordered in such a way that there was an underlying order for purposes of easy scoring, but so that it would not appear to the respondent that there were any clusters of similar questions. Instructions were made simple, so that the test was suitable for self-administering.

Scores for three-choice answers were assigned as 0, ½ or 1, and for two-choice answers as 0 or 1.

The study falls into two parts: (1) a first study whose object was to determine whether the project was worth pursuing; (2) a second study in which, as a result of an item analysis, certain questions were rejected, a hysteria sub-scale was added, and a further standardization carried out.

First Study M.H.Q.—Preliminary Form

The questionnaire was administered by a departmental secretary to 90 consecutive outpatients attending the Academic Psychiatric Unit, and by one of the authors to 100 "normal" subjects consisting of nurses, physiotherapists and medical students. The patients came from two sources: from general practitioners and from other departments of the hospital. The majority of the patients suffered from psychoneurotic illness, "psychosomatic" disorders, (essential hypertension, ulcerative colitis, hyperthyroidism, duodenal ulcer, asthma, migraine, etc.) and/or personality disorders (drug dependence, sexual perversion, etc.). Nine patients were suffering from organic states (epilepsy, etc.) or from major psychoses.

A separate sheet was included in the patient's notes at the preliminary interview, on which the clinician could rate the symptoms under the same broad headings as on the questionnaire (free-floating anxiety, phobic, etc.) as absent, mild, moderate, or severe. This rating was completed for 52 patients. The selection of patients assessed in this way depended only on the busy ness of the clinician at a particular out-patients' session.

Two methods of establishing the validity of the questionnaire were used: first, whether each sub-test differentiated the normal subjects from the patients; second, whether the sub-tests correlated with the clinical ratings. It is seen in Table I that each sub-test differentiated the normal subjects and the patients at a statistically highly significant level. The Mann-Whitney U-test (Siegel, 1956) was used to show the relationship between the sub-tests and the clinical ratings. This compares the ranking of the subject on the sub-test concerned with the clinician's assessment as absent or mild and moderate or severe. This dichotomy was chosen as having the most clinical relevance. It can be seen in Table II that the clinical correlations are statistically significant at the usually accepted levels in all except the phobic sub-test (P = 0.13).

Reliability was calculated by the split-half method, using the sub-group of 52 patients rated by the clinicians. Each sub-test was treated separately. The reliability was high for the sub-test free-floating anxiety (0.85), moder-

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Free floating anxiety</th>
<th>Phobic</th>
<th>Obsessional</th>
<th>Somatic</th>
<th>Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychiatric Out-patients</td>
<td>90</td>
<td>Mean S.D. C.R.*</td>
<td>Mean S.D. C.R.</td>
<td>Mean S.D.</td>
<td>Mean S.D.</td>
<td>Mean S.D.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.8 1.1</td>
<td>3.5 1.7</td>
<td>5.0 1.5</td>
<td>5.2 1.7</td>
<td>4.9 1.8</td>
</tr>
<tr>
<td>Nurses, Medical students, and Physiotherapists</td>
<td>100</td>
<td>Mean S.D. C.R.*</td>
<td>Mean S.D. C.R.</td>
<td>Mean S.D.</td>
<td>Mean S.D.</td>
<td>Mean S.D.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.3 1.7</td>
<td>2.6 1.4</td>
<td>4.0 1.6</td>
<td>3.0 1.3</td>
<td>3.0 1.3</td>
</tr>
</tbody>
</table>

* Critical Ratio (C.R.) = Diff. bet. means/S.E. diff. (1/4 signif. level=2.54)
ate for phobic (0.66) and depressive (0.65) and low for obsession (0.48) and somatic (0.48).

A simple item-analyses was carried out by calculating the average score on each of the 60 test items for the 90 patients and 100 normal subjects. Items which on inspection showed no differentiation were dropped from the test, as were the 10 items whose classification could not be decided upon. In the final form of the test the forty best items were retained and an 8-item hysterical scale was added, to make a 48-item test comprising 6 sub-scales (5 as previously plus the hystericia scale). As the scoring method used in the preliminary test had been arithmetically clumsy, scores of 0 to 2 or 0 to 2 were assigned to the three- or two-choice answers respectively. The final form of the test, together with the scoring system are explained in detail in the Appendix.

Intelligence test results were available on 10 patients who were admitted to hospital. The rank correlation between total score on the preliminary test and W.A.L.S. was −0.20—a low negative correlation with intelligence which would be expected in a test of this type. (Sarason, 1960).

The patients varied in age from 18 to 64 years (mean 34.8). The correlation (product-moment) between total score on the test and age for the 90 patients was −0.01, clearly non-significant. The age of the normal subjects was restricted (18½–22 years).

Second Study M.H.Q.—Final Form

The 48-item test was administered to 62 unselected patients and 109 normal subjects. The latter group consisted of nurses and medical students. The patients were, as previously, mainly suffering from psychoneuroses, psychosomatic disorders and character disturbances.

The validity of the test was studied using the same two methods as in the previous section, together with a third method in which the intercorrelations between the sub-tests were calculated. From the figures in Table III it can be seen that each sub-test of the scale differentiated between the normal subjects and the patients at a highly significant level statistically. The relationship of each sub-test to the clinical ratings were studied on 50 patients assessed by the examining clinicians. The rating form and statistical method (Mann-Whitney U-test) are as previously described. In Table IV it can be seen that the sub-tests free-floating anxiety, phobic, somatic, depressive and hysteric differentiate significantly between the patients judged by the examining clinician to show these traits to a lesser (absent/mild) or greater (moderate/severe) extent. The obsessionial scale showed the same trend, but this did not reach the usually accepted statistical level (P = 0.12). It seems likely, from the remarks written by the clinicians on the rating sheets (unsolicited), that this may be because it was not clear whether we wanted traits or symptoms rated, and some clinicians restricted themselves to symptoms.

### Table II

<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>97</td>
<td>174.5</td>
<td>136</td>
<td>201</td>
</tr>
<tr>
<td>Z</td>
<td>−3.91</td>
<td>−1.14</td>
<td>3.43</td>
<td>−2.51</td>
</tr>
<tr>
<td>P</td>
<td>&lt; 0.0005</td>
<td>0.13</td>
<td>&lt; 0.0003</td>
<td>0.006</td>
</tr>
</tbody>
</table>

* Mann-Whitney U-Test (Siegel, 1956) comparing scores on test of patients rated Absent or Mild vs. those rated Moderate or Severe.

### Table III

<table>
<thead>
<tr>
<th>M.H.Q. (Final Form) O.P.'s vs. Normals</th>
</tr>
</thead>
<tbody>
<tr>
<td>-------</td>
</tr>
<tr>
<td>O.P.'s</td>
</tr>
<tr>
<td>Nurses and Med. students</td>
</tr>
</tbody>
</table>
A SHORT CLINICAL DIAGNOSTIC SELF-RATING SCALE FOR PSYCHONEUROTIC PATIENTS

**Table IV**

*M.H.Q. (Final Form) Relationship of Score on Sub-tests to Clinical Ratings.* (N=50)

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>398.5</td>
<td>112.5</td>
<td>236.5</td>
<td>482</td>
<td>260.5</td>
</tr>
<tr>
<td>Z</td>
<td>1.3</td>
<td>2.7</td>
<td>1.2</td>
<td>3.3</td>
<td>2.0</td>
</tr>
<tr>
<td>P</td>
<td>0.04</td>
<td>0.003</td>
<td>0.12</td>
<td>0.0005</td>
<td>0.02</td>
</tr>
</tbody>
</table>

* Mann-Whitney U-Test.

It is necessary to show that the sub-tests measure different aspects of the psychoneurotic personality. To some extent this has been shown by the correlation with clinical ratings. To obtain further evidence, correlation coefficients between the sub-tests were calculated separately for the patients and the normal subjects. (*Table V.*) It should be possible to show that the sub-tests correlate only moderate-to-low among themselves, otherwise there is no point in using sub-test scores. The correlations show that this is so.

These correlations also show that for those who prefer a factorial approach, the results could be accounted for by postulating a general underlying factor, such as “general emotionality” or “neuroticism”, and bipolar factor such as “hysteria-dysthymia”.

Reliability coefficients were calculated using the split-half method separately for 62 patients and 43 controls (nurses). These are shown in *Table VI.* Considering that the sub-tests are short, the internal reliabilities of the free-floating anxiety, phobic, depressive and hysterical subscales can be considered satisfactory; whilst those of the obsessional and somatic sub-scales are low.

**Table VI**

*M.H.Q. (Final Form) Reliability Coefficients (Split-half, corrected for shortening)*

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>O.P.’s (N=62)</td>
<td>0.82</td>
<td>0.73</td>
<td>0.43</td>
<td>0.37</td>
<td>0.65</td>
</tr>
<tr>
<td>Normals (N=43)</td>
<td>0.64</td>
<td>0.37</td>
<td>0.44</td>
<td>0.41</td>
<td>0.35</td>
</tr>
</tbody>
</table>

**Discussion**

Aspects of the psychoneurotic personality can be classified either “scientifically”, usually on a basis of factor analysis, or “clinically”. The M.H.Q. is an attempt to provide a rapid approximation to what would be expected from a clinical psychiatric diagnostic interview at a descriptive level. This is not because we feel that the clinical approach is “better”, but it would seem to be more closely related to patients as they are viewed by psychiatrists. Of “scientific” tests used in this country the relevant comparison is with the tests of Eysenck and his colleagues. The main “factors” they are concerned to measure are “neuroticism” and “extraversion-introversion”. It is clear that psychoneurotic patients do differ on some such general factor as “neuroticism”, and it is a valid method of classifying them. With the present data, the fact that the intercorrelations tend to be positive suggests that our sub-tests are measuring this general factor whatever else they also measure. However, a score on a general factor of “neuroticism” seems to us to say very little about a patient that is useful diagnostically except that some patients are more “ill” than
The following questions are concerned with the way you feel or act. They are all simple. Please tick the answer that applies to you. Don’t spend long on any one question.

1. Do you often feel upset for no obvious reason?
   - Yes...2...
   - No...0...

2. Do you have an unreasonable fear of being in enclosed spaces such as shops, lifts, etc.?
   - Often...2...
   - Sometimes...1...
   - Never...0...

3. Do people ever say you are too conscientious?
   - No...0...
   - Yes...2...

4. Are you troubled by dizziness or shortness of breath?
   - Never...0...
   - Often...2...
   - Sometimes...1...

5. Can you think as quickly as you used to?
   - Yes...0...
   - No...2...

6. Are your opinions easily influenced?
   - Yes...2...
   - No...0...

7. Have you felt as though you might faint?
   - Frequently...2...
   - Occasionally...1...
   - Never...0...

8. Do you find yourself worrying about getting some incurable illness?
   - Never...0...
   - Sometimes...1...
   - Often...2...

9. Do you think that “cleanliness is next to godliness”?
   - No...0...
   - Yes...2...

10. Do you often feel sick or have indigestion?
    - Yes...2...
    - No...0...

11. Do you feel that life is too much effort?
    - At times...1...
    - Often...2...
    - Never...0...

12. Have you, at any time in your life, enjoyed acting?
    - Yes...2...
    - No...0...

13. Do you feel uneasy and restless?
    - Frequently...2...
    - Sometimes...1...
    - Never...0...

14. Do you feel more relaxed indoors?
    - Definitely...2...
    - Sometimes...1...
    - Not particularly...0...

15. Do you find that silly or unreasonable thoughts keep recurring in your mind?
    - Frequently...2...
    - Sometimes...1...
    - Never...0...

16. Do you sometimes feel tingling or prickling sensations in your body, arms or legs?
    - Rarely...1...
    - Frequently...2...
    - Never...0...

17. Do you regret much of your past behaviour?
    - Yes...2...
    - No...0...

18. Are you normally an excessively emotional person?
    - Yes...2...
    - No...0...

19. Do you sometimes feel really panicky?
    - Yes...2...
    - No...0...

20. Do you feel uneasy travelling on buses or the Underground even if they are not crowded?
    - Very...2...
    - A little...1...
    - Not at all...0...

21. Are you happiest when you are working?
    - Yes...2...
    - No...0...

22. Has your appetite got less recently?
    - Yes...2...
    - No...0...

23. Do you wake unusually early in the morning?
    - Yes...2...
    - No...0...

24. Do you enjoy being the centre of attention?
    - Yes...2...
    - No...0...

25. Would you say you were a worrying person?
    - Yes...2...
    - No...0...

26. Do you dislike going out alone?
    - Yes...2...
    - No...0...

27. Are you a perfectionist?
    - Yes...2...
    - No...0...

28. Do you feel unduly tired and exhausted?
    - Yes...2...
    - No...0...

29. Do you experience long periods of sadness?
    - Yes...2...
    - No...0...

30. Do you find that you take advantage of circumstances for your own ends?
    - Yes...2...
    - No...0...

31. Do you often feel “strung-up” inside?
    - Yes...2...
    - No...0...

32. Do you worry unduly when relatives are late coming home?
    - Yes...2...
    - No...0...

33. Do you have to check things you do to an unnecessary extent?
    - Yes...2...
    - No...0...

34. Can you get off to sleep alright at the moment?
    - Yes...2...
    - No...0...

35. Do you have to make a special effort to face up to a crisis or difficulty?
    - Very much so...2...
    - Sometimes...1...
    - Not more than anyone else...0...

36. Do you often spend a lot of money on clothes?
BY SIDNEY CROWN AND A. H. CRISP

37. Have you ever had the feeling you are "going to pieces"? 
   Yes.2 No.0

38. Are you scared of heights? 
   Very.2 Fairly.1 Not at all.0

39. Does it irritate you if your normal routine is disturbed? 
   Greatly.2 A little.1 Not at all.0

40. Do you often suffer from excessive sweating or fluttering of the heart? 
   Frequently.2 Sometimes.1 Never.0

41. Do you find yourself needing to cry? 
   Yes.2 No.0

42. Do you enjoy dramatic situations? 
   Never.0 Sometimes.1 Frequently.2

43. Do you have bad dreams which upset you when you wake up? 
   Always.2 Sometimes.1 Never.0

44. Do you feel panic in crowds? 
   Less.2 The same or greater.0

45. Do you find yourself worrying unreasonably about things that do not really matter? 
   Never.0 Frequently.2 Sometimes.1

46. Has your sexual interest altered? 
   No.0 Yes.2

47. Have you lost your ability to feel sympathy for other people? 
   Yes.2 No.0

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A ........................................ D ..............................

P ........................................ S ..............................

H ..............................

1 ..............................

2 ..............................

3 ..............................

1. Duplicating

The test is designed for duplication on a foolscap sheet, questions 1–24 on the front, 25–48 on the back, with space for scoring each sub-test (A, P, O, etc.) and for diagnostic notes at the end. We would welcome use of the test, but it is important that it is duplicated exactly as arranged, otherwise the standardization figures may not apply. We should be pleased to send copies to anyone interested. The scores for each answer are included, but these should not be duplicated.

2. Scoring

i. Between each group of 6 questions, (6, 12, 18, etc.) four dots will be found on the left hand side. Join these up.

ii. Enter the score for each answer from 1–48 on the dotted lines on the left.

iii. Add up the scores on each sub-test separately and enter in the appropriate place at the end of the test. Free-floating anxiety consists of questions 1, 7, 13, 19, 25, 31, 37, 43; phobic consists of questions 2, 8, 14, 20, 26, 32, 38, 44; obsessional consists of questions 3, 9, 15, 21, 27, 33, 39, 45; somatic questions 4, 10, 16, 22, 28, 34, 40, 46; depressive of questions 5, 11, 17, 23, 29, 35, 41, 47; hysterical of questions 6, 12, 18, 24, 30, 36, 42, 48.

iv. Check that there are no arithmetical mistakes by adding the scores of all questions 1–48 and seeing that this agrees with the total of the separate sub-test scores.

v. Standardization figures are given in Table III so that individual, or group mean, scores can be compared.

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