A PSYCHIATRIC RATING SCALE FOR SCHIZOPHRENIA IN SINGAPORE (WOODBRIDGE HOSPITAL RATING SCALE FOR SCHIZOPHRENIA)

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SUMMARY

This scale is constructed to meet the need for an efficient, rapid and economical method of measuring change in schizophrenic patients during the course of psychotropic medication (drug trial) in a multi-cultural, multi-lingual population of low educational level. Items are included only if (1) they can be elicited objectively, (2) they are important symptoms of schizophrenia and (3) they are frequent manifestation of the schizophrenic syndrome as recorded in Woodbridge Hospital. It could be used by a single rater but its reliability should be further improved if two raters are involved.

INTRODUCTION

There are at present many reliable psychiatric rating scales and schedules for measuring mental state. These range from elaborate ones like the Present State Examination [1] and the Minnesota Multiphasic Personality Inventory (MMPI) to shorter ones like the Brief Psychiatric Rating Scale. [2] Some are for general assessment eg. Global Assessment Scale [3] and some measure specific syndromes like anxiety and depression. Some are for use by doctors and some for nurses and related workers - NOSIE - 30. [4] For schizophrenia, the scale most commonly employed to measure response to drug treatment is the Brief Psychiatric Rating Scale (BPRS). All these scales and schedules are constructed in the English language and tested on English speaking patients brought up in the English-European cultural background. They may not be reliable when used on patients coming from different cultural background like those seeking treatment in Woodbridge Hospital, Singapore. These patients are brought up in a multi-cultural, multi-lingual and multi-social background. They speak more than 20 different languages and dialects although the majority can communicate in English, Mandarin, Hokkien (dialect) and Malay with varying degrees of competency. Psychiatric rating scales relying on carefully chosen words and phrases in a language foreign to the patient may not fulfil their intentions under these circumstances. Secondly, questions that try to measure emotional experience, responses and involvements and other subjective states are unreliable in view of the varying degrees of language and cultural barriers between the rater and the subject.

A rating scale to cover such a mixed variety of backgrounds should have items that are simple, direct and objective. It should also measure

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TABLE I[5]
THE FIFTEEN MOST COMMON ABNORMALITIES RECORDED IN SCHIZOPHRENIA ADMITTED TO WOODBRIDGE HOSPITAL

	Abnormalities	Number	Percentage Frequency
1	Paranoid ideas	187	28.3
2	Hearing voices	184	27.9
3	Talking to oneself	135	20.4
4	Insomnia	132	20.0
5	Aggressive	122	18.5
6	Abnormal behaviour	117	17.7
7	Laughing to oneself	99	15.0
8	Disturbed behaviour	99	15.0
9	Crying to oneself	68	10.5
10	Withdrawn	64	9.7
11	Suicide ideas	65	9.5
12	Blunting of affect	62	9.4
13	Ideas of charm	60	9.1
14	Violent	59	8.9
15	Talking nonsense	59	8.9

symptoms that are commonly and specifically exhibited by the disease condition — schizophrenia in this case. In Singapore the most common symptoms of schizophrenia are paranoid ideas, auditory hallucinatory voices, insomnia. [5] For those who have recovered partially, somatic and neurotic symptoms are common. These four symptoms are used to form the core of a simple rating scale to measure the mental state of schizophrenia patients treated at Woodbridge Hospital. These symptoms can be defined objectively and graded; their assessments do not require subjective interpretation by the raters as in the case of items in the BPRS like emotional withdrawal, tension, hostility, suspiciousness and blunted affect. Such items are not suitable for assessing schizophrenic patients in a multi-cultural and multi-lingual population as seen in Singapore where there are 3 main culturally unrelated ethnic groups — Chinese, Malay and Indian.

The majority of the schizophrenic patients admitted to Woodbridge Hospital (mental hospital) present with behavioural abnormalities (Table I). Instruments that rely on the interpretation of feelings and emotions are unsuitable. A reliable instrument should be one that is able to measure these common symptoms objectively.

Among the 82 psychiatric rating scales listed by Endicott and Spitzer [6] none are developed to measure specifically schizophrenic symptoms although about 20 are meant to cover "psychopathology". This leads the authors to feel a need to provide a rapid, practical and reliable instrument to quantify the symptoms of schizophrenia during the course of psychotropic drug treatment. The objective of this scale is to fulfil this need.

THE RATING SCALE

The scale contains 10 items which are grouped into four sets based on the following observations: (1) verbal response to the psychiatric interview, (2) objective observations during the interview, (3) side-effects from psychotropic medication and (4) overall impression.

In using this scale (appendix I), the rater starts by asking the patient for his complaints as normally done during history taking. The patient is encouraged to talk as freely as possible. In the course of the interview, the rater goes through the other items one by one: (1) patient's neurotic and somatic complaints (2) paranoid or other delusions, (3) hallucinatory voices, (4) insomnia.

The interviewer does not need to take more than 10 minutes during which observations are made on the patient's talk, appearance and motor abnormalities. The rater will also assess the patient for "formal thought disorder" through observing his "talk" and the patient's affective blunting by his "appearance": (5) talk (thought process), (6) appearance (including blunting of affect) and posture, (7) motor activities, (8) verbal production.

The patient is next examined for side effects by: (9) (a) observed — drowsiness, tremors, akathisia, and rigidity (b) subjective complaints of discomforts.

It ends with an overall impression which should correlate well with the sum total score of (1) to (8): (10) overall impression.

SCORING

The score rating for items (1) to (6) and (10) is along a 0 to 4 scale. These are considered important items for schizophrenia. The score for items (7) and (8) is from 0 to 2 as these are firstly difficult to quantify and secondly not important features of schizophrenia — although they are frequently reported is schizophrenia during the acute episodes. The total score can be cross-checked with the value in item 10 — overall impression.

TABLE II
RELIABILITY OF RATING BY TWO INDEPENDENT RATERS

Item		Pearson's product-moment Correlation Coefficient
1	Patient's complaints	0.77
5	Talk (thought process)	0.62
6	Appearance	0.56
10	Overall impression	0.72
Total score (1 to 8)		0.85

RELIABILITY

Reliability refers to the consistency of scores obtained by the same individuals on different occasions. [7] It is usually determined by testing a group of patients on two separate occasions. For a rating scale, the inter-rater reliability is more important. The inter-rater reliability of this scale was tested by two psychiatrists who rated each patient simultaneously. Not more than 10 minutes were required for the average case. A total of 51 patients were rated by different pairs of psychiatrists. Ten psychiatrists participated in the exercise and the results are seen in Table II. The correlation coefficient for inter-rater reliability for the whole scale is 0.85 ($0.01 > p > 0.001$). The raters were not "trained" to use the scale. The reliability should improve further if "training" was provided.

Four items in the scale that may appear equivocal and likely to create discrepancy between the raters were separately tested. (Table II) Item (5) talk (thought process) and item (6) appearance (affective response) have rather low inter-rater reliability of 0.62 and 0.56 respectively, but they are still significant ($0.01 > p > 0.001$).

DISCUSSION

A psychiatric instrument can be constructed "scientifically" through the use of factor analysis as in the Eysenck Personality Inventory [8] or Cattells' Sixteen Personality Factor Questionnaires [9] or they may be factorially analysed after they are constructed. For clinical psychiatric assessment, a heuristic approach, choosing items that occur commonly in the syndrome under evaluation would result in a scale that has a high content validity. This method is adopted by the authors.

The properties of rating scales have been delineated under the following headings: orientation, sensitivity, information access, utility and specificity. [10]

Orientation is the bias inherent in the items which compose the scale — for example in a scale for schizophrenia 30 percent of the content may concern hallucination and none on thought disorder. In this scale there is a greater emphasis on direct recording of verbal report and observation of patient's behaviour than on interpretation of subjective phenomena. Therefore a patient with blunted affect will score much less.

The sensitivity of a scale refers to its ability to distinguish in numerically significant terms between various degrees of severity of illness. It is not difficult to assess the difference between mild and severe but the nuance of difference in the intermediate zone makes rating problematic. This may partly explain the lower inter-rater reliability on "thought process" and "appearance".

Information access applies to aspects of an illness which the score cannot assess. Items that cannot be assessed are left out. The items on this scale are based on clinical experience with schizophrenia admitted to a mental hospital in Singapore. Signs like passivity or tactile hallucination, are uncommon, hence excluded. Item for "depression" is left out because (1) there is no simple word for "depression" in the Chinese and the Malay languages, (2) depression being an emotion is not easily measured objectively, and (3) it is not a primary abnormality of schizophrenia.

The utility of the scale refers to its ease of use by the rater. This scale which is based on the psychiatric interview should present no problems to the rater. Being brief and to the point, it allows the rater to register the patient's clinical picture at the back of his mind throughout the period of assessment.

The specificity of a scale is the degree to which high scores are achieved in the disorder for which it is designed and low scores in all other disorders. This does not apply to the present scale which is formulated solely for schizophrenic patients during the course of psychotropic medication.

The "overall impression" is a global rating and is represented on a visual analogue scale — this method allows for a holistic assessment of the progress of a patient.

The drawback of an observer scale is that of the rater bias — the rater is influenced by a general

expectation of how ill the patient ought to be. For instance it is assumed that patients are more ill before treatment than at the end of it. [11]

To increase reliability of rating it is recommended that patients be interviewed jointly by a team of two clinicians and independent ratings given. Inter-rater consistency increases with experience in joint-rating. It is important that raters should first standardise their procedure and achieve a consensual understanding of rating constructs through training interviews. Overall and Graham [2] advocate a useful method in interview. Each patient is assessed jointly by two observers and independent ratings made. Each item in the scale is discussed and differences in the interpretation of statements will become apparent. These differences may eventually by minimised during training interviews. Lack of agreement could also be due to a difference of opinion on the degree of severity. This difference is considered a true error of measurement but will be reduced through combining of ratings by the independent raters. Such a method is ideal and would lead to further improvement of inter-rater reliability, but may not be practical in situations where there is insufficient psychiatric personnel.

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APPENDIX I

WOODBRIDGE HOSPITAL RATING SCALE FOR SCHIZOPHRENIA

Patient's Name_____ Rater's Name_____

VERBAL RESPONSE TO PSYCHIATRIC INTERVIEW — about 10 minutes SCORES

Rate the patient as he appears during the interview.

1 PATIENT'S COMPLAINTS — This is to assess the patient's subjective discomfort other than insomnia, delusions or hallucinations. _____

0 = no complaint
1 = one or two complaints
2 = more than two complaints
3 = (between 2 and 4)
4 = preoccupied with complaints*

Describe _____

_____

2 PARANOID IDEAS (or other delusions) _____

0 = nil
1 = doubtful or vague ideas
2 = definite delusions
3 = delusions as main complaint
4 = preoccupied with delusions*

Describe _____

_____

3 AUDITORY HALLUCINATIONS — voices _____

0 = nil
1 = doubtful, may be, vague noise
2 = definite, can easily describe voices
3 = voices as main complaint
4 = preoccupied with voices*

Describe _____

_____

4 INSOMNIA _____

0 = able to sleep, no problem with sleep
1 = one of these—cannot fall asleep, early wakening, wakes up at night, poor sleep
2 = two or more of the above
3 = cannot sleep whole night
4 = preoccupied with insomnia*

Describe _____

_____

* occupying more than 50% of the interviewer's time.

OBSERVATION DURING INTERVIEW

5 TALK (thought process)

Infer from answers to items 1, 2, 3, 4 above _____

0 = normal, relevant and rational
1 = vague and a little irrelevant
2 = very vague and irrelevant
3 = irrational but possible to make out what is said
4 = irrational and unintelligable

Describe _____

_____

6 APPEARANCE (INCLUDING AFFECTIVE RESPONSE)

Note the patient's appearance, posture, manners _____

0 = normal appearance, expression and attitude
1 = a little abnormal, eg. facies, manners
2 = moderately abnormal eg. facies, posture, mannerisms
3 = obviously abnormal eg. laughing to self
4 = extreme eg. shouting, aggressive to staff

Describe _____

_____

7 MOTOR ACTIVITIES _____

0 = normal amounts of movements (eg. nodding head)
1 = movements slightly increased or reduced (eg. sits still)
2 = movements (a) markedly increased (eg. turning around) or (b) markedly reduced (eg. motionless)

8 VERBAL PRODUCTION _____

0 = normal flow of words
1 = talkative or reticent, (declined to talk)
2 = (a) very talkative, cannot be easily interrupted or (b) monosyllabic, almost mute

TOTAL SCORES (1 to 8) (0 to 28 points) _____

9 SIDE EFFECTS 0 = absent, 1 = mild, 2 = severe

(a) Observed

drowsiness 0 1 2 tremors 0 1 2
akathisia 0 1 2 rigidity 0 1 2

(b) Subjective Complaints

leg restless 0 1 2 other complaints 0 1 2

10 OVERALL IMPRESSION

0	1	2	3	4
well	minimal illness	moderate illness	severe illness	too abnormal to be interviewed