A WARD BEHAVIOR RATING SCALE FOR MENTAL HOSPITAL PATIENTS

E. I. BURDOCK
AND
G. HAKEREM
ANNE S. HARDESTY
JOSEPH ZUBIN

Biometrics Research, New York State Department of Mental Hygiene
and Department of Psychiatry, Columbia University

INTRODUCTION

A behavioral rating of 150 items has been designed to measure severity of illness and an index of response to treatment for mental patients, both new admissions and chronic residents.

Material was selected by reference to the literature of psychopathology and by consultation with representatives of the various mental health disciplines. The present effort capitalizes on previous work such as The Behavior Chart (2) inspired by Adolph Meyer and still in use at the Phipps Psychiatric Clinic; the Rating Scheme for Conduct (3); A Schema for the Quantitative Measurement of Abnormal Emotional Conditions (4); the Wittenborn Psychiatric Rating Scales (5); Lorr's (6) Multidimensional Scale for Rating Psychiatric Patients; and the Hospital Adjustment Scale of Ferguson, McReynolds, and Ballachey (7).

The items (8) were constructed to reflect observable units of behavior such as facial expression and grooming; eating activity and toilet habits; physical status; attitudes; cooperativeness; communication; vocalization and speech patterns; interpersonal relations; hostility or aggressiveness; mannerisms; affect; and special symptoms. No attention is directed at rating a patient's underlying dynamics, the whole effort being concentrated on determining current status.

Ambiguity was minimized and intelligibility increased by choice of the simplest and most direct wording for each item. Technical terms and explanatory examples, where necessary, were segregated by parentheses. All items were tested for clarity and specificity by try-out with nurses and attendants. The items of behavior have been drawn from three categories of observation: appearance and deportment, behavior in verbal contexts, and adaptation to ward routine.

PROCEDURE

The items are marked by circling "T" (for True when the patient displays the indicated behavior) or "NT" (for Not True when the patient does not behave in the manner described). To maximize the amount of information, a forced choice technique has been employed, i.e., the rater has been directed to answer every item as "True" or "Not True" to the best of his ability. Items concerned with adaptation to ward routine may require reference to the nursing record if the opportunity for observation has not arisen. The rating has been focussed on the patient's behavior during the preceding week. Historical material or facts known about the patient prior to this time are excluded from consideration.

Prospective raters should have a training session before being left on their own. After a little experience, about ten or fifteen minutes has generally been enough time to complete the whole scale for a patient. A dotted line has been placed after each item to be used for any qualifications which the rater has wanted to make in addition to rating the item as "T" (True) or "NT" (Not True). Items have been scored zero or one according as the behavior is adaptive or not. Maximum score is thus 150.

---

1This research has been supported by Research Grant M-3546 from the National Institute of Mental Health of the National Institutes of Health, Public Health Service.

2Interested readers may secure copies of the Ward Behavior Rating Scale for research purposes by writing to the authors.
Reliability

Two ratings were made for each patient by regular ward nurses or attendants after a training session to impart instructions and stimulate motivation. Normality was tested by fitting to chi square the ratios of the variances within subjects to the mean variance within subjects.

Because of work schedules different observers were paired across patients and the same observer appeared sometimes as first, sometimes as second rater. Therefore, inter-judge agreement was analyzed by intra-class correlation. An intra-class correlation of .67 was obtained from a one-way analysis of variance applied to paired ratings on 107 patients at New York Psychiatric Institute.

A similar analysis of a sample of 50 pairs of ratings from a New York state mental hospital yielded an intra-class correlation of .84. The correlation dropped to .40 for 61 pairs from a VA hospital. On a sample of ten patients from another New York state hospital the same four judges rated each patient allowing a two-way analysis of variance which provided an intra-class correlation of .77.

Internal consistency was studied by applying Hoyt’s model for a two-way analysis of variance to a composite sample of 177 protocols from several state hospitals. A significant F between items supported the hypothesis that the items were making independent contributions to the total score. The coefficient of internal consistency was .95; the standard error of an individual score was 4.4.

Validity

Criterion studies with preliminary pools of items contributed two items which identified young males released before the end of three months and 19 items which distinguished young males out of the hospital at the end of 12 months.

A preliminary form of the scale was used in conjunction with a study of the effectiveness of a special geriatric unit at Central Islip State Hospital. The rating scale proved effective both by showing that the experimental and control groups were comparable at intake and by reflecting a significant \( p < .01 \) improvement in the experimental group on four-week follow-up.

A study, with the present form, on female geriatric patients, distinguished a group treated with drugs from a matched placebo group at the .05 level of significance. The predictive validity of the rating scale has been tested against an Outcome Index which combines length of hospitalization and number of admissions and releases into a single composite criterion ranging from zero to one. The Outcome Index computed for a six-months follow-up on 107 patients at New York Psychiatric Institute showed a low but significant correlation \( r = .21; p < .05 \) with scores on the Ward Behavior Rating Scale.

Summary

A behavioral rating scale of 150 dichotomous items has been designed to provide a measure of severity of illness and an index of response to treatment for mental patients.

References