

DETERIORATED PSYCHOTIC PATIENTS— THEIR TREATMENT AND ITS ASSESSMENT

By

A. A. BAKER, M.D.

Deputy Physician Superintendent

and

J. G. THORPE, Ph.D.

Research Psychologist

Banstead Hospital

INTRODUCTION

THE problem of long-stay patients in mental hospitals is assuming increasing importance. At present, in most large mental hospitals the long-stay patients occupy 80 to 90 per cent. of the beds. The investigation by Freyhan (1955) suggested that although the new methods of treatment of the last 30 years have greatly increased the speed of recovery in the case with the good prognosis, they have not altered the outlook for the deteriorating case. This is in general confirmed by May (1956). Now these patients may have a yet longer stay because of the increased life span.

SURVEY AND LITERATURE

The present methods of treatment for deteriorated patients include the social programme now accepted by all modern hospitals, for example, occupational and work therapy; physical exercises in the ward or in the grounds; social functions; cinema shows; dances, and coach trips. E.C.T., used either as a course, or as a maintenance treatment, was described by Moore (1943) and is widely practised. The newer drugs, Largactil and Reserpine enable progress to be made with many patients who were too restless or impulsive previously. The method of small group treatment, usually referred to as "habit training", is used with numerous variations. The "total push" technique of Myerson (1939) and other writers uses many different stimuli to encourage more activity and social re-adjustment on the part of the patient. The report by Sines (1952) and others showed that there was a significant, measurable, improvement as a result of their treatment programme in the case of long-stay patients, but found that on economic grounds it could not be applied to all patients who required it. They used group activities, E.C.T., encouragement of visitors and increased participation of nursing staff, but did not isolate which of these was the effective procedure. Wittkower (1955) has described improvement in a small group of schizophrenic patients who were allowed to play with dirt and who had some interpretation of their activities made. His report is very interesting, but whether the patients benefited from the permissive atmosphere, the interpretations made, the opportunity to achieve something, however low the level of achievement, or for other reasons, is not certain.

Reading published reports suggests that any method of treatment which leads to greater activity on the part of the patients leads also to some measure of improvement. Closer examination of the problem shows there is neither agreement on which activity is the most helpful, nor on what is meant by

improvement. Some reports suggest the discharge rate of patients from the long-stay ward is evidence of improvement, at least in social adjustment. The same result could, of course, be obtained by improved contact with the relatives of these patients without any change whatever taking place in the patient. Most reports use behaviour rating scales to assess progress, as these patients will not co-operate with any more formal testing procedure. There are many very serious difficulties in the use of all these scales, particularly if they are to be used repeatedly in an attempt to assess progress. Recording behaviour at once introduces another influence. For example, at this hospital it was decided to record the number of patients who were secluded in side rooms daily because of disturbed behaviour. For the first week of recording the average number in side rooms was 16 to 20, for the second and third weeks the number dropped to 7 or 8 and after a month to 1 or 2 and continued at that level. On the evidence it would seem that the simple process of recording the need for seclusion leads to prompt improvement in 90 per cent. of disturbed patients. The correct interpretation is that when extra attention is drawn to the patient in the side-room he receives treatment and the problem is resolved by this instead of seclusion. To take another example, it might be thought that a record of incontinence was at least a factual observation of behaviour. Unfortunately this is not so. Some patients are grossly incontinent, but others in quantities so small that it depends upon the nurse's keenness of observation and feeling towards the patient whether it is recorded or not. Also some patients will be continent when one nurse attends to them and incontinent when another is present. When patients realize that incontinence is being recorded and their behaviour observed they may make accurate records difficult by destroying or hiding evidence.

The Fergus-Falls Rating Scale (1951) is usually considered one of the better for use with deteriorated patients. Unfortunately this scale includes extremes of behaviour under the same rating, for example, under psychomotor activity the patient is given the same rating for "stays in one place unless moved", as for "may need seclusion for over-activity", so that this scale is hardly suitable for checking progress in either sphere. When this scale was validated a variation of one point on the scale was accepted as within normal limits. This means that "mute or speaks a lot, but nonsensical", or "a few words that make sense", were accepted as accurate descriptions of the same patient's behaviour. Others have tried to solve the problem of rating scales and Shatin and Freed (1955) described the Albany Behavioural Rating Scale which they consider an improvement on others. This scale, however, is most useful for one assessment of the patient, but less helpful if serial ratings are required to assess progress. It also includes many questions the answer to which will depend upon the interviewer's relationship with the patient, for example, "the patient is slow", "yells at aide when he is dissatisfied", "will discuss many subjects", "does any extra chore", will almost certainly depend upon the attitude of the person managing the patient.

Bennett and Robertson (1955) described the results of habit training on chronic schizophrenic patients but found that their methods of assessment were unsatisfactory. Their most definite conclusion was that further investigation was needed and that one of the major weaknesses of their enquiry was the subjectivity of their records and ratings, together with the unsatisfactory nature of behaviour charts completed by nurses. They suggest the use of the Fergus Falls Behaviour Rating Scale, but for reasons given earlier this too is unsatisfactory.

THE RESEARCH PROJECT

There are two major problems which require much further study. Firstly we need to know which of our present treatment methods are effective in the long-stay schizophrenic patient. Secondly, we need improved methods of assessing these patients and of recording the changes which result from treatment. The research recorded in this paper is an attempt to make progress with these two problems. Firstly it was decided to compare the effects of E.C.T., with those of "habit training"; as these are two of the most commonly used methods of treatment. It was possible to find a homogeneous group of deteriorated psychotic patients. All had been in hospital for more than 5 years and were on long-stay wards with other deteriorated patients. All were under 50 years of age and all showed gross evidence of a severe schizophrenic process. Fifteen had had a leucotomy, 4 insulin comas, and 31 a course of E.C.T. For the purpose of this research, patients were excluded if they had had any active physical treatment during the last year. They were placed in three groups by random selection, the principle being that they were placed in rank order depending upon the date of admission to hospital so that in each group the average duration of stay in hospital would be similar. (The average duration in each group was 15 years.) The patients were placed in three groups of 16 patients in each group. The first group was moved to a small ward staffed by a Sister and two nurses, where an active toilet training, physical exercise, occupation, and social activity programme, was instituted. The second group of 16 were given a course of 20 E.C.T. Owing to illness, two patients received 10 E.C.T. only, while others were found to benefit from maintenance E.C.T. and received between 20 and 30 treatments. The patients having E.C.T. remained on their usual ward and received no other extra attention. They were on wards with 60 or more other patients, looked after by a Sister with one nurse and ward orderly to help, so that extra time could not be given to them. The last group of 16 remained on their usual wards and received no fresh treatment or change in their routine.

THE BEHAVIOURAL RATING SCALE

A simple behaviour rating scale was used (Figure 1). It can be seen that this scale rates 16 forms of behaviour. The nurses were given an explanatory leaflet (Figure 2). The intention was to provide a chart which could be filled in quickly and with complete accuracy *so far as the facts were known to the nurse concerned*. This must always be considered. When a nurse is expected to rate a patient on her ward, if she has 60 or more patients under her care, the amount of accurate observation on any one of them is limited. The charts were completed for Monday to Friday of each week. They were scored by counting one, two, three, or four points, depending upon the four degrees of severity in each condition. This means that for any one factor over five days, the maximum score was 20, whereas if the behaviour was normal the score would be 0. The various grades of behaviour have been chosen arbitrarily, the emphasis being on accuracy of recording rather than upon equal grades of severity between each sub-division. It was found that the sub-division of aggressive behaviour into four categories was not helpful. Aggressive outbursts occurred sporadically in these particular patients and were directed towards anyone within reach. Contrary to expectation, this undifferentiated tendency occurred in all three groups and subsequently the scores from the last four sub-divisions were added together to give one scale of "aggressive incidents".

FIGURE 1

| | | | | | |
|----|--|--|---|------------------------------------|----------|
| A. | Sleeps all day. | Dozes all day. | Dozes several times. | Dozes once. | • Normal |
| B. | Light sleep. Wakes at night. | Light sedation (3-6 hours sleep). | Heavy sedation (1-3 hours sleep). | Insomnia even with sedation. | |
| C. | Motionless. | Occasional movement. | Very retarded. | Slightly retarded. | |
| D. | Fidgety or meddlesome. | Needs light sedation. | Needs heavy sedation. | Needs isolation. | |
| E. | Tube fed. | Spoon fed. | Eats only with persuasion. | Finicky with food. | |
| F. | Greedy with own ration. | Greedy wants extra. | Voracious. Eats bad or stale food. | Eats things other than food. | |
| G. | Mute. | Occasional word with persuasion. | Speaks only if spoken to. | Occasional spontaneous remarks. | |
| H. | Pressure of speech—can be interrupted. | Pressure of speech—can't be interrupted. | Persistent conversation with or without audience. | Persistent shouting or singing. | |
| I. | Needs dressing fully. | Needs help in dressing. | Dresses self but needs adjustment. | Dresses self but dirty and untidy. | |
| J. | Incontinent of urine once. | Incontinent of urine several times. | Doubly incontinent once. | Doubly incontinent more than once. | |
| K. | Does no work. | Works with supervision in ward. | Works with supervision outside ward. | Works without supervision. | |
| L. | Has two friends. | Has one friend. | Has no friend. | No friends and avoids people. | |
| M. | | Verbally aggressive to staff. | | | |
| N. | | Physically aggressive to staff. | | | |
| O. | | Verbally aggressive to patients. | | | |
| P. | | Physically aggressive to patients. | | | |

All patients were rated for one week on their original wards, before the treatment programmes began. After this the habit-training group were rated weekly, but because of nursing difficulties the other two groups were rated on the 5th, 9th, 12th, and 17th weeks. Graphs can be drawn from the scores given in Figure 3. An example of this is Figure 4, showing the changes in feeding behaviour.

Scale A shows the amount of sleeping or dozing recorded for each group. Less sleeping or dozing was recorded for the patients receiving habit-training and re-socialization and statistical assessment shows that the improvement is significant at the 5 per cent. level in the case of the habit-training group, but there is no significant change in the other groups. Although the nurses found this factor easy to rate, it is felt that this particular rating is too difficult to distinguish from factor C, for retardation. Many patients sit quietly in one

FIGURE 2

INSTRUCTIONS

The Ward Sisters should complete the form for each patient for Monday to Friday of each week. The patient's name, number, and ward should first be entered on the front. The form should then be completed each day by filling in the appropriate column, i.e.:

| | | | | |
|-----------------|------------------|-----------------------------|----------------------|---------------|
| <i>Tube fed</i> | <i>Spoon fed</i> | <i>Eats with persuasion</i> | <i>Finicky</i> | <i>Normal</i> |
| | Monday | | Tuesday Wednesday | |
| | | Friday | | Thursday |

means that the patient needed spoon feeding on Monday and Friday, ate with persuasion on Tuesday and Wednesday and normally on Thursday. In general the lowest level of behaviour should be the one recorded.

Further Explanations

- A. *Sleeps all day* means that patient has to be woken for meals.
Dozes means that patient wakes spontaneously for meals or at intervals.
 Light sedation = 3 grains Amytal or 1 drachm paraldehyde.
 Heavy sedation = 6 grains Amytal or 2 drachms paraldehyde.
- C. *Motionless* means that patient only goes to meals if taken and otherwise stands or sits in one place all day.
Occasional Movement means that patient goes to meals if reminded and although staying in same place does move limbs or head occasionally.
Very Retarded means that patient occasionally moves from one place to another, but slowly and cannot be hurried.
Slightly Retarded means that patient's movements are much slower than those of normal people, but she can be hurried on occasions.
 Light and heavy sedation are as noted in A.
- I. *Needs help in dressing* means that without this the patient would leave some garments off.
Dress needs adjustment means that although all garments are put on by the patient, buttons need doing up or shoes tied or similar actions necessary to complete dressing.
Dresses self but dirty and untidy means that dressing is complete, but patient would not look neat enough to go out into the town.
- K. *Work* means any occupation whether O.T., Ward work, running messages, etc.
"Friends" means that there are patients with whom the patient prefers to sit at meals or is known to show a preference for, not necessarily that any deep friendship is present.
- M. *Verbally aggressive* means shouts at, swears at, or abuses.
 and *Physically aggressive* means hits, or throws at, whether the blows land or not, but does not include threatening to be aggressive.
- O. In both M and O 4=aggressive without any provocation whatever on more than one occasion.
 3=aggressive without any provocation on one occasion only.
 2=aggressive with slight provocation on more than one occasion if patient has to be verbally corrected by staff or is criticized by a patient.
 1=aggressive once.

If there are any further queries, please ask the Doctor.

These charts are part of an investigation into the effects of treatment on deteriorated patients and should be completed as carefully as possible.

position and appear to be dozing who are semi-stuporose and not sleeping at all. Also the apparent improvement in the habit-training group is probably due to the extra nursing staff, who can keep them fully occupied and therefore reduce the opportunity for dozing.

Scale B. The amount of nocturnal restlessness is significantly reduced in the habit-training group. Reference to the rating scale used shows that the amount of sedation given at night was used as a measure of assessment of the degree of nocturnal restlessness. Since it was a matter of principle in the habit-training group that all sedation was reduced as rapidly as possible both by night and day, this introduces a spurious impression of improvement. In the hospital as a whole there has been an attempt to reduce the amount of night-time sedation and this may account for the apparent improvement in the control group.

FIGURE 3

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | |
|---|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|
| A. Sleeping in Day | Control | 58 | — | — | — | 63 | — | — | — | 48 | — | — | — | — | — | — | — | — | 17 |
| | E.C.T. | 30 | 17 | 22 | 7 | 32 | 8 | 16 | 20 | 35 | 15 | 5 | — | 45 | — | — | — | — | 19 |
| | Habit | 61 | — | — | — | 9 | — | — | — | 22 | — | — | — | 20 | 9 | 5 | 0 | — | 9 |
| B. Nocturnal Restlessness and Need for Sedation | Control | 91 | — | — | — | 99 | — | — | — | 95 | — | — | 40 | — | — | — | — | — | 44 |
| | E.C.T. | 94 | 29 | 42 | 25 | 75 | 8 | 3 | 5 | 66 | 2 | 2 | 17 | 3 | 3 | 1 | — | — | 50 |
| | Habit | 77 | — | — | — | 2 | — | — | — | 16 | — | — | 3 | — | — | — | — | — | 4 |
| C. Retardation | Control | 120 | — | — | — | 130 | — | — | — | 106 | — | — | 111 | — | — | — | — | — | 122 |
| | E.C.T. | 140 | 130 | 145 | 99 | 85 | 75 | 75 | 64 | 144 | 74 | 80 | 109 | 80 | 89 | 65 | 84 | — | 80 |
| | Habit | 129 | — | — | — | — | — | — | — | 60 | — | — | 90 | — | — | — | — | — | 79 |
| D. Daytime Restlessness | Control | 122 | — | — | — | 109 | — | — | — | 110 | — | — | 105 | — | — | — | — | — | 101 |
| | E.C.T. | 135 | 115 | 0 | 0 | 132 | 20 | 21 | 10 | 95 | 23 | 35 | 135 | 20 | 5 | 4 | 4 | — | 94 |
| | Habit | 179 | — | — | — | 5 | — | — | — | 20 | — | — | 12 | 20 | — | — | — | — | 15 |
| E. Feeding Difficulty | Control | 52 | — | — | — | 58 | — | — | — | 55 | — | — | 65 | — | — | — | — | — | 59 |
| | E.C.T. | 48 | 46 | 50 | 28 | 42 | 36 | 54 | 46 | 42 | 24 | 30 | 30 | 32 | 29 | 28 | 31 | — | 6 |
| | Habit | 49 | — | — | — | 31 | — | — | — | 47 | — | — | — | — | — | — | — | — | 39 |
| F. Greediness | Control | 33 | — | — | — | 29 | — | — | — | 26 | — | — | 28 | — | — | — | — | — | 27 |
| | E.C.T. | 53 | 15 | 3 | 18 | 65 | 4 | 4 | 4 | 33 | 2 | 3 | 75 | 2 | 1 | 1 | — | — | 62 |
| | Habit | 39 | — | — | — | 2 | — | — | — | 10 | — | — | 3 | — | — | — | — | — | 8 |
| G. Difficulty in Speaking | Control | 142 | — | — | — | 145 | — | — | — | 155 | — | — | 142 | — | — | — | — | — | 151 |
| | E.C.T. | 156 | 165 | 166 | 153 | 134 | 111 | 99 | — | 132 | 94 | 83 | 118 | 118 | 118 | 122 | 85 | — | 94 |
| | Habit | 170 | — | — | — | 128 | — | — | — | 110 | — | — | 108 | — | — | — | — | — | 104 |
| H. Pressure of Speech | Control | 20 | — | — | — | 24 | — | — | — | 36 | 0 | — | 30 | — | — | — | — | — | 35 |
| | E.C.T. | 13 | 6 | 5 | 2 | 30 | 33 | 20 | 16 | 35 | 12 | 0 | 40 | 0 | 3 | 40 | 4 | — | 56 |
| | Habit | 38 | — | — | — | 3 | — | — | — | 0 | — | — | 27 | — | — | — | — | — | 0 |
| I. Dressing Ability | Control | 163 | — | — | — | 170 | — | — | — | 173 | — | — | 155 | — | — | — | — | — | 159 |
| | E.C.T. | 180 | 124 | 110 | 123 | 151 | 54 | 75 | 56 | 169 | 69 | 74 | 160 | — | — | — | — | — | 144 |
| | Habit | 160 | — | — | — | 69 | — | — | — | 66 | — | — | 79 | 36 | 66 | 45 | 76 | — | 75 |
| J. Incontinence | Control | 38 | — | — | — | 42 | — | — | — | 45 | — | — | 44 | — | — | — | — | — | 48 |
| | E.C.T. | 26 | 10 | 10 | 6 | 23 | 19 | 10 | 25 | 31 | 19 | 31 | 41 | 18 | 8 | 4 | 16 | — | 44 |
| | Habit | 36 | — | — | — | 7 | — | — | — | 19 | — | — | 36 | — | — | — | — | — | 14 |
| K. Work Status | Control | 270 | — | — | — | 275 | — | — | — | 285 | — | — | 280 | — | — | — | — | — | 270 |
| | E.C.T. | 280 | 278 | 240 | 215 | 252 | 235 | 232 | 230 | 265 | 248 | 244 | 290 | 232 | 240 | 240 | 220 | — | 249 |
| | Habit | 285 | — | — | — | 220 | — | — | — | 248 | — | — | 244 | — | — | — | — | — | 222 |
| L. Friendliness | Control | 248 | — | — | — | 249 | — | — | — | 249 | — | — | 245 | — | — | — | — | — | 240 |
| | E.C.T. | 252 | 238 | 238 | 240 | 245 | 240 | 240 | 240 | 231 | 222 | 230 | 245 | — | — | — | — | — | 232 |
| | Habit | 248 | — | — | — | 240 | — | — | — | 238 | — | — | 222 | 222 | 224 | 240 | 230 | — | 218 |
| M. Aggressiveness | Control | 43 | — | — | — | 47 | — | — | — | 42 | — | — | 49 | — | — | — | — | — | 41 |
| | E.C.T. | 30 | — | — | — | 53 | — | — | — | 42 | — | — | 111 | — | — | — | — | — | 88 |
| | Habit | 72 | 23 | 67 | 19 | 33 | 19 | 33 | 25 | 13 | 25 | 22 | 9 | 8 | 4 | 14 | 23 | — | 7 |

Scale C shows improvement in both the habit-training and E.C.T. groups. In the case of the latter it is not quite significant at the 5 per cent. level. Clinical observation suggests that an improvement in retardation is usually obtained in the case of patients receiving E.C.T., but the improvement in those having habit-training may be the result of the extra activity imposed upon them rather than the result of any fresh initiative in the patients.

Scale D. As in the case of nocturnal restlessness this factor was rated by using the amount of sedation given as part of the scale. Here again the apparent dramatic improvement in the first two weeks in the habit-training group is the result of the treatment policy rather than evidence of improvement in the patient group. Even though the improvement is significant at well beyond the 1 per cent. level.

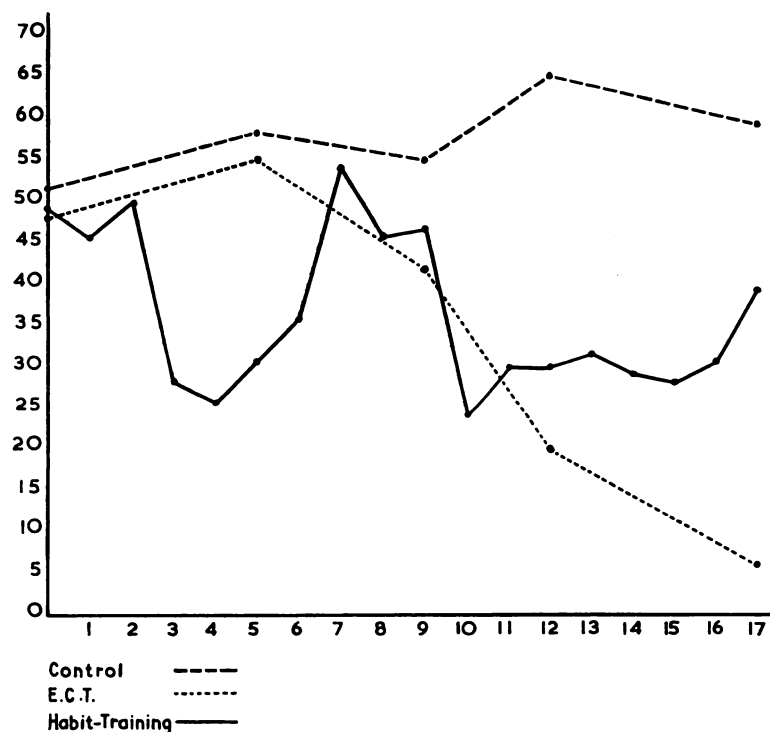


FIG. 4.—E. Feeding difficulty.

Scale E shows that there is improvement in the feeding of the habit-training group and in the group receiving E.C.T. In the E.C.T. group, this improvement is significant at the 5 per cent. level, and is the only factor which is statistically significant in this group. If the chart (Figure 4) is observed, it can be seen that in the habit-training group there is an apparent "hump" between the seventh and tenth weeks. Observation of this particular group suggests that this apparent deterioration in their feeding habits occurred at a time when the senior Sister and Staff Nurse on that ward went on their summer holiday and it is thought that the patients reacted to their loss by a relapse in their feeding habits. It can be seen there is a tendency to further relapse at the seventeenth week and this too occurred at a time when one of the senior nursing staff on that ward was on leave.

Scale F shows no significant change when tested statistically and the scores are not helpful. The group receiving E.C.T. varied considerably in the amount of greediness shown and no explanation of this can, as yet, be offered.

Scale G is concerned with difficulty in speaking. The analysis shows a significant improvement in the case of the habit-training group, but not in the E.C.T. group, even though the scores suggest that there has been improvement in this group too.

Scale H shows erratic changes in the scores. Statistically, no group shows a significant change. Examination of the scores shows that the group receiving E.C.T. apparently become much more noisy and talkative, while the habit-training group varied very markedly from week to week. Observation of the patients, particularly those in the habit-training group, has not led to any explanation of this phenomenon. It seems possible that the sudden increases which, in fact, usually involve relatively few patients, occur when one patient is noisy and provokes several others, so that for a short time a relatively high score is obtained. Discussion with the nurses suggests that this particular rating is more difficult for them to score objectively than others.

Scale I, which is concerned with dressing ability, shows a significant change at beyond the 1 per cent. level, in the case of the group receiving habit-training. This is of real interest and is probably the most significant finding in this particular group. Personal observation confirms that these patients, even though grossly deteriorated, can be trained to dress themselves and, what is more, will retain this training for some period even when not strictly supervised. It suggests, of course, that their previous level of deterioration was partly due to acceptance of a standard of behaviour, below their best possible level, by the nursing staff.

Scale J, for incontinence, is an interesting one, even though no statistically significant factor emerges. If the scores of the habit-training group are studied it can be seen that the maximum improvement occurs at the end of the third week, after which there is an increase in incontinence until the twelfth week, after which it again markedly improves, until there is maximum improvement at the fifteenth week. There are several possible explanations for this, but one which should be considered is as follows. When the experiment commenced the Ward Sisters understood that it was for a period of twelve weeks only. They were aware that the degree of incontinence in the patients was considered to be of importance and that we were most anxious to study and record it accurately. They were, in the first two or three weeks, very proud of the improvement which was obviously occurring and which they were recording in the habit-training charts. For the next four or five weeks the Sisters continued to state, in informal interviews, that the amount of incontinence was still becoming less as the weeks went by. They were not able to check their observations because the week's behaviour charts were removed at each week-end and they were unable to check back over the past weeks. It was, however, quite obvious, by the seventh and eighth weeks, that the amount of incontinence was increasing, even though the Ward Sisters still insisted they were achieving better results. During the tenth and eleventh weeks, however, the Ward Sisters began to complain, quite freely, that the amount of incontinence was on the increase and they felt it was very difficult to understand. At the end of the twelfth week they were told that, contrary to expectations, the habit-training group would be staying on the ward for another month. They were very pleased at this and the amount of incontinence over the next two or three weeks again showed very marked improvement. It seems possible that the incontinence occurring in these patients is a measure

of the mutual adjustment between staff and patients, the adjustment between their mutual expectations from each other, and the good feeling and morale of all concerned. In the case of the habit-training group the morale in the first few weeks was very high, but as the experiment proceeded, and the nurses began to feel that, after all, they would lose these patients at the end of the twelfth week, the morale slowly deteriorated and, corresponding with this, there was a slow deterioration in the toilet habits of the patients.

Scale K. In the case of the work status, there is a significant improvement in the case of the habit-training group. Several patients, who were previously idle, have been persuaded to do ward chores of one sort or another, but it has often been found very difficult to maintain any improvement achieved in this way.

It has been possible to train three patients to work in the hospital laundry. This means they leave the ward and are integrated into a working group. After a time it was found they continued to go to work without supervision and maintained their performance at work.

Scale L, recording friendliness, shows a sad situation. It is remarkable to see patients, who have been living in close proximity for several months, feeding at the same table, holding hands at the same game, walking together, playing together, dancing together, yet, once these activities cease, showing not the least interest or sign of awareness of each other, even though they may be standing or sitting next to each other. They can be seen wandering round from one side of the room to the next without speaking to each other or showing the least interest, even when another patient is involved in an incident. Lest it be thought that our standard of friendliness is too high it should be explained that any evidence that two patients showed any feeling for each other was accepted as friendliness in this context. For example, on one occasion two patients sat in the same corner and laughed heartily together for some minutes and this was recorded as a friendly gesture that day, even though subsequent observation showed that it did not recur.

The last scale, that for aggressiveness, appears on the surface to show that there is a marked increase in the case of those patients receiving E.C.T. Statistically, however, this is not significant, the reason being that the high scores are almost entirely accounted for by two or three patients, whereas in the group as a whole there is not any significant change.

To summarize the findings in the case of the sixteen original ratings. It can be said that those concerned with retardation, feeding difficulties, difficulty in speaking, dressing ability, incontinence, work status, and aggressiveness, can be used with the present method of scoring and rating. The factors concerned with nocturnal restlessness, day-time restlessness, and friendliness, require fresh rating scales if they are to prove of value. At present, linking restlessness with sedation does not give a useful scale, as the amount of sedation given depends upon the doctor and his attitudes more than upon the patient's immediate behaviour. It is probable also that the present rating scale expects too high a standard of friendliness in our patients. They rarely show friendliness to each other, but friendly gestures or attitudes towards the staff are sufficiently common to be worth considering as part of a rating scale. Lastly, it is suggested that the factors, sleeping in the day, greediness, and pressure of speech, should be discarded from the charts as being of insufficient value.

CONCLUSIONS

An experiment has been conducted to compare the effects of two methods of treatment for long-stay, deteriorated, schizophrenic patients. It was felt that

one of the chief failings of previous investigations of treatment for long-term, psychotic, patients has been the failure to isolate which of the methods used was effective. It was also thought that previous methods of assessment, including rating scales, had failed in their purpose, either owing to their complexity, or to the likelihood that major errors could occur owing to subjective factors influencing the rating scale. This experiment has shown that there are significant differences in the effect of habit-training together with re-socialization, compared with the effects of E.C.T., in this particular type of patient. The chief findings are that habit-training and an active programme reduce the amount of sleeping in the day, improve the difficulty in conversation, the ability to dress, and the patient's work status. E.C.T. although leading to some improvement in retardation does not do so at a significant level statistically, but does lead to a significant improvement in feeding difficulties.

A new rating scale has been introduced and data on its validity and reliability will be presented in a separate paper.

In conclusion it must be said that this research would have been quite impossible without the full co-operation given by numerous Ward Sisters, nurses, and other grades of staff, who, in spite of very heavy duties, have willingly given their time and energy in order to support this investigation.

RATING SCALES—STATISTICAL SUMMARY OF CHANGES (χ^2)

| Variable | Habit Training | E.C.T. | Control |
|-----------------------------------|----------------|--------|---------|
| A. Sleeping in day | 4·0* | ·56 | ·06 |
| B. Nocturnal restlessness | 4·0* | 1·25 | 1·56 |
| C. Retardation | 2·25 | 3·06 | 1·25 |
| D. Restlessness | 14·0*** | 1·56 | ·06 |
| E. Feeding difficulty | 1·25 | 4·0* | ·56 |
| F. Greediness | 2·25 | 0·0 | ·06 |
| G. Difficulty in speaking | 5·07* | 1·56 | 1·00 |
| H. Pressure of speech | 1·00 | 1·00 | 1·25 |
| I. Dressing ability | 9·0*** | 1·00 | ·56 |
| J. Incontinence | 1·25 | ·56 | 1·25 |
| K. Work status | 4·0* | ·56 | ·06 |
| L. Friendliness | 1·00 | 1·00 | 1·25 |
| M. Aggressiveness | 1·00 | ·06 | ·06 |

* Significant at the 5 per cent. level.

** Significant at the 1 per cent. level.

*** Significant at beyond the 1 per cent. level.

All changes which are significant have changed in the direction of *lower scores*.

Statistical Analysis of Changes in Ratings after 17 weeks

The statistical analysis of behavioural changes was effected by the use of the Chi Square technique. In using this method the difficulties introduced by the flagrant lack of normality in the frequency distributions of ratings, which would render invalid any of the Critical Ratio techniques, were circumvented. In the present analysis we first set up the hypothesis that in each group of sixteen patients any changes in ratings from test to retest will be due to chance factors, i.e. eight patients can be expected to show improvement, and eight deterioration. The significance of the divergence of the actual numbers of patients within each group showing improvement or deterioration from these expected numbers is a straightforward χ^2 problem.

REFERENCES

- BENNETT, D. H., and ROBERTSON, J. P. S., *J. Ment. Sci.*, 1955, **101**, 664.
 FREYHAN, F. A., *Amer. J. Psychiat.*, 1955, **112**, 161.
 LUCERO, R. J., and MEYER, B. T., *J. clin. Psychol.*, 1951, **7**, 250.
 MAY, A. R., *Lancet*, 1956, **270**, 485.
 MOORE, J. P., *J. Ment. Sci.*, 1943, **89**, 257.
 MYERSON, A., *Amer. J. Psychiat.*, 1939, **95**, 1197.
 SHATIN, L., and FREED, E. X., *J. Ment. Sci.*, 1955, **101**, 644.
 SINES, J. O., LUCERO, R. J., and KAMMAN, G. R., *J. clin. Psychol.*, 1952, **8**, 189.
 WITTKOWER, E., *Brit. J. Med. Psychol.*, 1955, **28**, 42.