THE EFFECTS OF HABIT TRAINING ON CHRONIC SCHIZOPHRENIC PATIENTS

By

D. H. BENNETT, M.D., D.P.M.

Assistant Psychiatrist

and

J. P. S. ROBERTSON, M.A., Ph.D.

Senior Psychologist

Research Department, Netherne Hospital, Coulsdon, Surrey

INTRODUCTION

IT has been recognized for at least 150 years that the organization of wards in public institutions often "results in a lack of adequate attention, provides an unnatural environment and promotes neglect, abuse, injuries and confusion", Noyes (1953). The atmosphere of the mental hospital back-ward, so different from that existing in the patient's home, creates a social, psychological and physiological "vacuum" and is particularly unfavourable to the long staying schizophrenic patient, who, as a result shows a progressive deterioration in habits and social relationships.

An early remedy practised at the York Retreat (Samuel Tuke, 1813) was that the nurses, having gained the patients' confidence, should attempt "to arrest their attention, and fix it on objects opposite to their illusions; to call into action as much as possible, every remaining power and principle of the mind; and to remember that, in the wreck of the intellect, the affections not unfrequently survive."

These principles are now firmly established in the care of the patient newly admitted to hospital who receives, in addition to physical treatments, the stimulus of occupation, social activities and help in readjusting and returning speedily to the community from which he has come. The need for the continued application of such stimuli in the management of those patients who fail to make a rapid recovery is recognized more frequently and has been forcefully restated by Bickford (1954). The varied means by which this aim can be achieved have in this century been outlined by Simon (1927, 1929), Menninger (1944), Main (1946), Burlingame (1947), Dancik (1952) and Maxwell Jones (1952).

All these authors have re-emphasized the deteriorating effects of idleness in an unnatural environment and the desocializing results of traditional methods of treatment. With varying emphasis they appeal for the encouragement of the personal responsibility of the patient and the provision of adequate outlets for his basic drives in work and play, properly guided, graded and expanded as circumstances permit. In considering the unsatisfactory hospital environment Main (1946) and Maxwell Jones (1952) stress the need to develop a therapeutic community in which all members, both patients and staff, may participate more fully and point out that this involves difficult and painful changes in the traditional staff roles and relationships.

The rehabilitation of those patients already showing desocialization and habit deterioration received a new impetus when Myerson (1939) described a

method which he called "Total Push". No new principles were involved in this approach, which took place in the established mental hospital setting and depended on the sustained application of a programme of activities, the stimulation of praise and reward and greater attention to the physical needs of the patient. In this country similar methods, usually described as "Habit Training", have been practised at many hospitals and the programme of training promoted at Warlingham Park Hospital by T. P. Rees has been described by Symons (1951). Although these methods have received increasing recognition, little has been written and no accurate attempt has been made to measure the results.

The recent work in America of Lucero and his colleagues (1952) at Fergus Falls State Hospital and Galioni *et al.* (1953) are the first essays in the assessment of results of "Total Push". In both these experiments behaviour rating charts were used to assess changes in groups of treated and untreated patients. Sines, Lucero and Kamman (1952) studied the results of a six months' programme which included the use of E.C.T. in addition to resocializing activities. Their results described in that paper and in a subsequent follow-up study by Fjeld, Lucero and Rechtshaffen (1953), indicated positive but minimal changes unrelated to the patients' initial behaviour level, length of stay in hospital and diagnostic category.

In 1815 Latham anticipated that "anything, however trivial, upon which his (the patient's) faculties could be exercised, might provide in an incalculable degree towards his comfort, and consequently towards his speedier recovery" (quoted by Rees-Thomas (1949)). The experimental method has at last been brought to bear on this neglected problem and we may hope to discover more clearly what are the important or trivial things which promote the patients' recovery and to calculate the degree to which they are effective.

The investigation described here was intended as a contribution towards this general aim by comparing the effects of habit training, carried out according to the British procedure, on chronic psychotics with changes during the same period in similar patients who did not receive habit training.

Patients Investigated

Ten patients of Netherne Hospital were selected at random from a male chronic ward for habit training and ten matched patients from the same ward were employed as an untrained control group. All twenty patients were diagnosed as chronic schizophrenics. All showed some degree of disturbance in perception, language or thought and of disorganization in personal habits. The groups were as closely matched for age and duration of illness as was feasible. They were not matched for original ability, since standard intelligence tests could not be successfully applied to more than one or two of them.

The habit training of the experimental group was begun in June, 1952. An initial assessment of the patients in the two groups was made at that time; they were reassessed after the lapse of one year and again reassessed after the lapse of two years. The initial assessment suggested that the group for training was probably of lower mean original ability than the control group. This suggestion was confirmed when the previous occupational levels of the patients were rated by the system of Goodenough and Anderson (1931). The initial assessment also indicated that, while the two groups were of the same general diagnostic status, the patients in the training group displayed a greater amount of cognitive disturbance, those in the control group a more emphatic disordering of personal habits. None of these three discrepancies reached statistical

significance at the 5 per cent. level but in view of the small numbers involved statistical allowance was made for them when comparing the groups.

During the first year one patient from the experimental group was, for clinical reasons, given a course of E.C.T. and one patient from the control group was transferred to another hospital, so that only nine patients were available in each group for the first reassessment. During the second year one patient in the training group died of coronary thrombosis, one developed tuberculosis and one was transferred to another hospital. Two patients in the control group were transferred, for clinical reasons, to the habit training group. For the second reassessment, therefore, there were available six patients in the experimental group and seven patients in the control group. The initial comparability in regard to age, duration of illness, occupational level, cognitive disorganization and habit disorganization of the patients involved in the first and second reassessments is set out in Table I.

TABLE I

Comparability of Groups

	Initial Assessments											
	First Year Comparison						Second Year Comparison					
	Trained			Control			Trained			Control		
Variable	N	Mean	Range	N	Mean	Range	N	Mean	Range	N	Mean	Range
Age in years	9	38·9	27–57	9	36·0	31–44	6	39·2	27–57	7	36·8	31–44
Duration of illness (in years) ..	9	15·9	5–36	9	14·4	10–24	6	17·0	5–36	7	14·0	10–24
Occupational level (Goodenough–Anderson Rating) ..	9	6·1	5–7	9	3·8	2–7	6	6·2	5–7	7	3·4	2–7
Cognitive Disorganization (Pin-man Minus Score)	9	34·2	11–48	9	27·8	6–36	6	29·3	11–48	7	25·8	6–36
Habit Disorganization (Nurses' Records: Bad Points)	9	20·8	4–36	8	25·3	14–40	6	19·7	4–36	7	26·8	14–36

METHOD OF TRAINING

The method of training was adapted from that developed by J. J. Symons (1951), formerly Chief Male Nurse, Warlingham Park Hospital. The patients followed a strict timetable each day as follows.

Hours	*Activity*
07.15–07.45	Rising. Dressing, assisted by nurse in charge of group. Visit with nurse to ablutions room to wash, clean teeth, brush hair, etc.
07.45–08.15	Breakfast under supervision of nurse, all patients in group sitting at tables together.
08.15–09.00	Personal cleaning and tidying.
09.00–09.45	Light ward duties under supervision of nurse.
09.45–10.00	Dress inspection by charge-nurse of ward, with special attention to condition of suit, tie, shirt, socks and shoes.
10.00–11.45	Rolling grass (Monday, Wednesday, Saturday). Physical training (Tuesday, Thursday, Friday). Free (Sunday).
11.45–12.00	Changing to slippers. Personal cleaning and tidying.
12.00–12.45	Dinner under supervision of nurse, all patients in group sitting at tables together.
12.45–13.45	Personal cleaning and tidying. Putting on shoes.

13.45–14.00	Dress inspection by charge nurse of ward, as at 09.45.
14.00–16.00	Walking in grounds (Monday and Friday).
	Painting at art class (Tuesday and Thursday).
	Sports (Saturday).
	Seeing visitors or free (Wednesday and Sunday).
16.00–16.30	Changing into slippers. Personal cleaning and tidying.
16.30–17.00	Tea under supervision of nurse, all patients in group sitting together.
17.00–19.00	Either light ward duties under supervision of nurse or attendance with nurse at dance, cinema or concert, when available.
19.00–20.00	Showers or baths (Monday, Wednesday, Friday).
	Games (Tuesday, Thursday, Saturday).
20.00–20.30	Personal cleaning and tidying.
20.30	Retirement to bed.

In the case of incontinent patients but not the others regular urination and defaecation were supervised by the nurse at the hours of personal cleaning and tidying, i.e. 07.15–07.45, 08.15–09.00, 12.45–13.45, 20.00 and also the additional special hours 24.00, 03.00, 06.00.

The training group were given a special allowance of sweets or cigarettes. The control patients ate, worked and slept in the same ward as the training group but had no special supervision and pursued no regular timetable.

Methods of Assessment

Five different approaches were used in assessing changes in the patients, viz.:

1. Weight.
2. Scores on a simple information test.
3. Scores on the Pin-man Test of Reitman (1947).
4. Nurses' behaviour records of good and bad points.
5. Interview ratings by one of us (J.P.S.R.), given without knowledge of group membership, as to
   (*a*) Comprehension, communication and self-control.
   (*b*) Personal appearance.

1. *Weight*

For this purpose use was made of the routine monthly weighing in the ward, conducted in May, 1952, June, 1953, and June, 1954. Weight was determined in pounds on an Avery weighing machine. The patients were weighed fully clothed one hour after their dinner.

2. *Simple Information Test*

The following standard information questions were used at each assessment (i.e. June, 1952, June, 1953, and June, 1954).

(*a*) What is your full name?
(*b*) How old are you?
(*c*) What work do you do in hospital?
(*d*) How long have you been in hospital?
(*e*) What is the name of the doctor in charge of you?
(*f*) Why are you in hospital?
(*g*) What is the name of the medical superintendent?
(*h*) What month is it?

(*i*) What year is it?
(*j*) What county are we in?
(*k*) What political party is in power?
(*l*) What is the name of the present King of England?

These were scored as follows:

2 marks The correct answer.
1 mark A reasonable approximation.
e.g. (*g*) Name of former superintendent.
(*h*) May, July, August.
(*l*) King George the Sixth.
0 marks I. An absurd answer,
e.g. (*d*) Since seven o'clock last night.
(*e*) A clever crank who made a drawing for forty million pounds.
(*l*) Herod. Mercury.
II. No answer.

(Maximum marks 24.)

3. *Reitman's Pin-man Test*

This was applied and scored at each assessment according to the method described by Reitman and Robertson (1950). The plus scores, which range from 0 to 60, measure the extent to which the subject can apprehend and conceptualize emotional expression. The minus scores, which range from 0 to 48, measure the difficulty of abnormal subjects in attending, perceiving, associating, verbalizing, etc., scores on the drawing range from minus 4 to plus 8; the minus values correspond to increasing degrees of cognitive disorder.

4. *Nurses' Records of Good and Bad Points*

Each week from the commencement of training the nurse in charge of the group recorded on a special behaviour chart good and bad points for each patient. The good points were: (*a*) keeps with group; (*b*) plays games; (*c*) works; (*d*) works with attention; (*e*) absence of soiling; (*f*) dresses himself tidily; (*g*) cleans himself spontaneously; (*h*) cleans himself when prompted; (*i*) does hair; (*j*) eats food regularly; (*k*) speaks spontaneously to others; (*l*) handles implements appropriately.

The bad points were: (*a*) wanders from group; (*b*) drags in group; (*c*) stands about; (*d*) soils bed; (*e*) soils clothes; (*f*) clothes unfastened; (*g*) clothes dirty; (*h*) destructive to clothes; (*i*) collects rubbish; (*j*) face and hands dirty; (*k*) hair untidy; (*l*) eats waste food or dirt; (*m*) eats with hands; (*n*) gorges unmasticated food; (*o*) refuses food; (*p*) mute; (*q*) abusive or obscene; (*r*) shouts; (*s*) speaks only when spoken to; (*t*) chatters; (*u*) masturbates openly; (*v*) pilfers; (*w*) attacks others; (*x*) destroys; (*y*) handles implements clumsily; (*z*) doesn't handle implements; (*aa*) picks and rubs.

In the case of the controls, "group" was taken to mean "associated patients". Records for the controls were kept by a ward nurse for the first year but, unfortunately, this was omitted in the second year.

For the initial assessment the records of the first fifteen weeks after the beginning of training were employed. For the reassessments the corresponding fifteen weeks a year later and (experimental group only) two years later were used. If a point was noted on eleven to fifteen weeks it was allocated 3 marks,

on six to ten weeks 2 marks, on one to five weeks 1 mark. The total marks for good and for bad points were then summed. In the case of good points "plays games" was omitted from the scoring because games were not specially organized for the control group. The overlapping points presented a little difficulty; "works with attention" was taken as implying a point for "works", "cleans spontaneously" as implying one for "cleans when prompted", "doesn't handle implements" as implying one for "clumsy with implements". The range of marks for good points, therefore, was 0 to 33, for bad points 0 to 81.

5. *Interview Ratings*

The interview ratings were given at each assessment on the evidence of observations during the Simple Information and Pin-man Tests. As already noted, the interviewer (J.P.S.R.) was unaware which patients were under training and which were not. The rating for comprehension, communication and self-control derived from the elements: (*a*) attentiveness, "attention given to questions and stimuli"; (*b*) comprehension, "understanding of questions and stimuli"; (*c*) general alertness, "efficiency in dealing with problems presented by questions and stimuli"; (*d*) clarity of expression, "clearness of verbal response"; (*e*) self-control, "control of body movements and emotional expression during the examination".

The rating for personal appearance derived from the elements: (*a*) tidiness of hair on head; (*b*) condition of facial hair; (*c*) cleanliness of face; (*d*) cleanliness of finger nails; (*e*) cleanliness of hands; (*f*) tidiness of tie and/or collar; (*g*) cleanliness of jacket; (*h*) cleanliness of trousers; (*i*) attention to trouser buttons, i.e. closed, one button showing, entirely unbuttoned, shirt protruding, etc.; (*j*) cleanliness of shoes.

Each element was rated on a scale:

3 marks	Indistinguishable from normal.
2 marks	Somewhat poor.
1 mark	Definitely poor.
0 marks	Extremely poor.

The ratings in each section were summed to give the composite ratings for comprehension, communication and control and for personal appearance respectively. The range for the former was 0 to 15, for the latter 0 to 30.

Results

The results of the first reassessment are set out in Table II and those of the second in Table III, in each case in comparison with the initial assessment. The statistical significance of differences in mean gains was tested by analysis of covariance, allowing for the regression of reassessment on initial scores, in order to eliminate the initial discrepancies between the groups already noted. There was no reason to question homogeneity of variance in these comparisons (Variance Ratio test) except in the Good Points of the Nurses' Records. Here the variances were proportional to the means and accordingly the scores were transformed into their logarithms, before the analysis of covariance was carried out.

Since no behaviour records were kept for the control group during the second year, comparison in this regard was not possible at the second reassessment. It is of interest to note that if the status of the experimental group at two years is compared with their initial status they show an increase in good points statistically significant at the 1 per cent. level ($t=4\cdot800$, d.f.5) and a decrease in

TABLE II

First Year Comparison—Means and Mean Gains

Variable	Trained Group: Assessment N	Initial	First Year	Gain	Control Group: Assessment N	Initial	First Year	Gain	Difference in Mean Gains	Covariance F Ratio
Weight (in lbs.)	9	141·7	150·9	9·2	9	140·6	141·8	1·2	8·0	1·74
Information Score	9	6·0	6·9	0·9	9	7·9	5·6	−2·3	3·2	6·47*
Pin-man Figures:										
Plus Score	9	2·1	5·0	2·9	9	3·6	4·4	0·8	2·1	below 1
Minus Score	9	34·2	30·4	3·8	9	27·8	20·9	6·9	3·1	below 1
Drawing Score	9	−2·8	−2·7	0·1	9	−2·0	−2·6	−0·6	0·7	below 1
Nurses' Records:										
Good Points	9	17·9	24·6	6·7	8	3·4	4·8	1·4	5·3	1·58†
Bad Points	9	20·8	17·1	3·7	8	28·5	25·9	2·6	1·1	below 1
Interview Ratings:										
Comprehension, Communication and Self-control	9	4·9	7·9	3·0	9	7·8	7·1	−0·7	3·7	10·76‡
Personal Appearance	9	23·0	21·2	−1·8	9	21·2	17·7	−3·5	1·7	7·14*

* Significant beyond 5 per cent. point.
† After logarithmic transformation.
‡ Significant beyond 1 per cent. point.

TABLE III

Second Year Comparison—Means and Mean Gains

Variable	Trained Group: Assessment N	Initial	Second Year	Gain	Control Group: Assessment N	Initial	Second Year	Gain	Difference in Mean Gains	Covariance F Ratio
Weight (in lbs.)	6	153·5	156·2	2·7	7	140·0	134·8	−5·2	7·9	2·75
Information Score	6	6·7	3·2	−3·5	7	9·6	9·1	−0·5	3·0	1·05
Pin-man Figures:										
Plus Score	6	3·2	0·2	−3·0	7	4·6	5·7	1·1	4·1	3·15
Minus Score	6	29·3	38·5	−9·2	7	25·8	23·2	2·6	11·8	3·76
Drawing Score	6	−2·5	−3·3	−0·8	7	−1·7	−2·2	−0·5	0·3	2·65
Interview Ratings:										
Comprehension, Communication and Self-control	6	5·6	8·7	3·1	7	8·3	7·7	−0·6	3·7	2·10
Personal Appearance	6	23·5	23·0	−0·5	7	21·0	17·3	−3·7	3·2	12·72*

* Significant beyond 1 per cent. point.

bad points approaching significance at the 5 per cent. level (t=2·524, d.f.5). If, however, their second year is compared with their first year status the differences in good and bad points are not statistically significant (*t* is less than 1 in both comparisons).

DISCUSSION

This investigation yields few quite unequivocal findings. The Pin-man results suggest that habit training has no influence on disorders in perception and thought, as no doubt would be expected. There was some reason to suspect an increased food intake and in fact three cases in the trained group showed a marked rise in weight. While the comparative results are not statistically significant the matter seems worthy of further enquiry.

The Simple Information Test and Interview Ratings on Comprehension, Communication and Self-control suggested at the first reassessment that there

was a definite improvement in attentiveness, alertness, etc., which could be interpreted as a heightened confidence and interest in other persons or in other words as an increased socialization. In the second year the Information scores declined. The apparent improvement in Comprehension, Communication and Self-control ratings was not statistically significant, but the fact that the trained group did not fall back to their former level should be noted. Possible explanations of the failure to progress further are that the limit of improvement had already been reached or that there was a decreased efficiency in the habit-training procedure, since it is always difficult to maintain nursing interest with changes in staff and in face of the slow and fluctuating improvement.

The differences in personal appearance, although statistically significant, depend on a greater decline in the standard of the control group, not on a positive improvement in the experimental group, and may be an artifact of rating or of the nurses' care.

The nursing staff are strongly of the opinion that the working behaviour of the trained patients has greatly improved in co-operation, initiative and efficiency during the past two years and quote individual examples of this change. The improvement was not expressed in the Nurses' Records and examination of appropriate individual elements (e.g. handles implements clumsily; doesn't handle implements; works; works with attention, etc.) gave no support to such opinions.

Our most decided conclusion is that there should be further investigation, with the weaknesses of the present enquiry amended. The social importance of the problem which habit training is designed to solve certainly indicates that it should receive much more detailed and extensive consideration. The most outstanding weaknesses of the present investigation, we think, were the following:

(*a*) The subjectivity of the records and ratings.

(*b*) The unsatisfactory nature of the Behaviour Charts completed by the nurses, which left certain aspects of behaviour unrecorded and stressed some matters of relatively rare occurrence.

(*c*) The fact that it was not clear how far improvements in personal appearance depended on the patients' own efforts, rather than on the increased intervention of the nurses.

In any future investigation, we think, it is desirable that all ratings, and also recordings which involve an evaluation, should be made by at least three independent judges. We believe that the most satisfactory substitute for the Behaviour Charts of this enquiry would be the L-M Fergus Falls Behaviour Rating Scale described by Lucero and Meyer (1951) and Meyer and Lucero (1953). We also believe that at the end of an agreed period of habit training both experimental and control groups should be observed for a few days during which their personal appearance, conduct of work, etc., depend entirely on their own efforts, without the aid or stimulation of nurses.

With such improved methods of assessment it should be possible to study and compare other methods of rehabilitation.

Possible developments might include the use of larger groups, which would allow the wider application of a method which both by clinical impression and statistical results offers benefit to the chronic schizophrenic patient.

SUMMARY

1. A brief account is given of the background and history of habit training.

2. An experiment is described in which ten chronic schizophrenics, who were given habit training, were contrasted with ten matched patients who did not receive habit training. Details are provided of the methods of habit training and of assessment of changes in the patients.

3. Clear cut evidence of psychological changes induced by habit training were found in the first year, but this improvement did not continue in the second year. The results left a number of questions open and the need for further investigation is stressed. Certain points requiring special care in further investigations are noted.

ACKNOWLEDGMENTS

We should like to express our gratitude to Dr. R. K. Freudenberg, Physician Superintendent, Netherne Hospital, for his encouragement and interest in this investigation. Our sincere thanks are also due to Mr. E. T. Jupp, Chief Male Nurse, Mr. J. T. M. Long and all the other nurses who so enthusiastically undertook the training of the patients.

REFERENCES

BICKFORD, J. A. R., *Lancet*, 1954, *i*, 924.
BURLINGAME, C. C., *J.A.M.A.*, 1947, **133**, 971.
DANCIK, D., *J.A.M.A.*, 1952, **148**, 921.
FJELD, S. P., LUCERO, R. J., and RECHTSCHAFFEN, A., *J. Clin. Psychol.*, 1953, **9**, 394.
GALIONI, E. F., ADAMS, F. H., and TALLMAN, F. F., *Am. J. Psychiat.*, 1953, **109**, 576.
GOODENOUGH, F., and ANDERSON, J. E., *Experimental Child Psychology*, 1951, Appendix A. New York: Appleton-Century.
JONES, M. S., *Social Psychiatry*, 1952. London: Tavistock.
LUCERO, R. J., and MEYER, B. T., *J. Clin. Psychol.*, 1951, **7**, 250.
MAIN, T. F., *Bull. Menning. Clin.*, 1946, **10**, 66.
MENNINGER, K., *J.A.M.A.*, 1944, **125**, 1087.
MEYER, B. T., and LUCERO, R. J., *J. Clin. Psychol.*, 1953, **9**, 192.
MEYERSON, A., *Am. J. Psychiat.*, 1939, **95**, 1197.
NOYES, A. P., *Modern Clinical Psychiatry*, 1953. Philadelphia: Saunders.
REES-THOMAS, W., *J. Ment. Sci.*, 1949, **95**, 1.
REITMAN, F., *J. Nerv. Ment. Dis.*, 1947, **105**, 582.
REITMAN, F., and ROBERTSON, J. P. S., *J. Nerv. Ment. Dis.*, 1950, **112**, 498.
SIMON, H., *Allg. Z. Psychiat.*, 1927, **87**, 97.
Idem, *Ibid.*, 1929, **90**, 69.
Idem, *Ibid.*, 1929, **90**, 245.
SINES, J. O., LUCERO, R. J., and KAMMAN, G. R., *J. Clin. Psychol.*, 1952, **8**, 189.
SYMONS, J. J., *Mental Health*, 1951, **11**, 18.
TUKE, SAMUEL, *Description of the Retreat*, 1813.