Patient Contributions to a Therapeutic Environment: Use of Patients as Behavioral Assistants in Occupational Therapy Settings

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PATIENT CONTRIBUTIONS
TO A THERAPEUTIC ENVIRONMENT:
USE OF PATIENTS AS BEHAVIORAL ASSISTANTS
IN OCCUPATIONAL THERAPY SETTINGS

by

James Paul Mac Cormack

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James Paul Mac Cormack
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INTRODUCTION

The area of mental health is currently being faced with a two-fold problem. The twentieth century population is growing at a fantastic rate, thus a need for more mental health professionals is greatly felt. This increasing population brings with it, scientific and technological advances never before experienced by the world. These advances also bring with them a need for personnel to aid in ever increasing mental health needs. People are no longer ashamed or afraid to go to a psychologist, marriage counselor, social worker, etc. when a behavioral problem arises. In order to effectively meet these problems the field of mental health has been slowly moving away from the traditional psychoanalytical therapy to new treatment approaches. These new approaches include group therapy (one professional meets with a number of people who need treatment), family therapy (one professional meets with the entire family), behavior modification (manipulation of environmental variables in order to effect a therapeutic behavior change) and many other methods. All of these new therapies have had in common at least one goal, namely to increase the number of clients treated without any reduction in the effectiveness of the therapist.

This movement to new approaches has also influenced at least one other area, namely education (Guerney 1969). Formal
education does not seem to be a limiting factor in the training of professional staff to aid people with behavioral problems. It is now realized that one does not have to formally study psychology for a great many years before one can effectively change behavior. People who practice group therapy techniques usually undergo training in many group therapy situations as participants before they are allowed to even help lead the group. They must effectively serve as "apprentices" before they conduct sessions themselves. The field of behavior modification is also turning away from the idea of formal education as the only means of producing effective behavioral therapists.

One of the first studies done using behavior modification techniques involving sub-professional staff was accomplished by Ayllon and Michael (1959). Inappropriate behavior (entering the attendant's office many times each day) was conseuated by ward attendants using a differential reinforcement of other behavior procedure. The attendants in this study may be classified as non-professionals since they do not formally study mental illness to any great extent, and thus by definition are not considered professionals. Wahler, Winkel, Peterson, and Morrison (1965) showed that the deviant behaviors of a child could be modified by using the child's mother as a behavior therapist. The therapy sessions took place in a playroom of a child development clinic and the mother was "cued" by experimenter controlled lights as to how to respond to her child. The lights were later changed and acted
to reinforce the mother's appropriate responding to the child. Clearly, the mothers in these sessions would be considered non-professional agents as far as formal definition of professionals is concerned. Hawkins, Peterson, Schweid, and Bijou (1966) carried behavior modification techniques into the home environment. They successfully showed that a mother in her own home using a time-out procedure as well as large amounts of reinforcement could change the frequency of her son's objectionable behavior. Both Wahler et al., and Hawkins et al., had professional staff to aid the mothers in learning how to modify their children's behavior, but both also showed favorable results when this help was terminated. In the Hawkins et al., study follow-up meetings with the mother showed that she was still responding to her son appropriately. Patterson, McNeal, Hawkins, and Phelps (1967) accomplished two goals in their direction intervention into the family situation. They successfully trained both the mother and father in behavior modification techniques to the point that they were both using the techniques consistently for a greater part of each day. They also showed by follow-up visits that the improvement in the child's behavior had generalized to the school environment. The child was engaging in appropriate behavior 87% of the time in the school setting (a "normal" child engaged in appropriate behavior 89% of the time).

The school environment and use of teachers as behavior modifiers had also been a new setting in which to apply learning.
principles. Teachers may be classified as professional staff because of their formal education to become teachers. Unfortunately their formal education does not greatly elaborate upon the subject of handling behavior problems in the classroom. Thomas, Becker, and Armstrong (1968) instructed a teacher on how to respond to certain classes of behavior exhibited by her class. The teacher produced and eliminated disruptive classroom behavior by systematically varying her own behavior. Madsen, Becker, and Thomas (1968) pointed out that approval for appropriate behaviors is probably the key to effective classroom management. Teachers are given written instructions on how to respond to certain behaviors of children in class. These instructions proved to be sufficient enough to produce changes in the teacher's behavior and thus change student behavior. Surrat, Ulrich and Hawkins (1970) carried the use of non-professional staff even farther by having an elementary student act as a behavioral engineer. The study behavior of four first grade students was changed by a fifth grader. Participating as a behavioral engineer was so pleasurable to the fifth grade student that access to participation was used as a reinforcer for his study behavior.

The mental illness institutions or state hospitals are currently employing a large number of professional staff. The effectiveness of this staff may be greater enhanced if more emphasis were placed on behavior modification techniques.
Hartlage (1970) has compared the subprofessional staff's (student nurses') use of traditional psychotherapeutic techniques and use of reinforcement procedures. Hartlage reports a great improvement in the behavior of patients who were involved in the reinforcement therapy. Kale, Zlutnick and Hopkins (1968) use actual patients from the institution to help manage a token economy. The therapeutic aspects of this technique are explained by the author as "enabling the "helpers" to make the most efficient use of the appropriate behaviors that exist in their repertoires." (page 34). Cockrill and Bernal (1968) used a highly verbal patient (patient-peer) to modify the verbal behavior of a withdrawn patient. The "patient-peer" was instructed on how and when to reinforce the verbalizations of the withdrawn patient and then allowed to practice with one of the experimenters. There was no additional consequation of behavior during the sessions other than the natural consequences for talking. The verbal behavior of the withdrawn patient increased until she was talking twice as much as before. There was also an increase in the withdrawn patient's initiation of conversation. Wilson and McCulley (1970) effectively showed that patient-teachers could teach lower-level patients such skills as adding, subtracting, telling time, playing cards and recognizing letters of the alphabet. All of these studies demonstrate that the use of patients as therapists for other patients is very possible.
The use of Occupational Therapy in psychiatric hospitals has been for the most part very traditionally oriented. Learning theory has however recently begun to influence the roles of occupational therapists. Smith and Tempone (1968) and Diasio (1968) very clearly state the occupational therapist should begin to look at operant conditioning as a very useful tool to be used in therapeutic situations. Both studies cite case histories in which operant techniques have been employed to successfully modify the behavior of psychiatric patients. Ellsworth and Colman (1969) using a point system and a work-oriented task produced more behavioral changes with their patients than any preceding therapist. They attributed their success to the work oriented task (remodeling a riding stable) rather than typical occupational therapy tasks, and also the use of behavior modification procedures via a point system. It has been demonstrated that patients can modify the behavior of other patients, that behavior modification techniques are successful in Occupational Therapy settings. This project was an experiment to determine if a patient-therapist in an occupational therapy setting could successfully modify the work behavior of other patients.
METHOD

Subjects: Five male patients from the Kalamazoo State Hospital took part in the study. Subject A was 31 years old and had been in the institution for 5 years. Subject B was 30 years old and had been institutionalized for 8 years. Subject C was 25 years old and has been in the institution for 6 years. Subject D was 28 years old and had been institutionalized for 2 years. The patient-therapist was 41 years old and had been institutionalized for 15 years. Subjects A, B, C and the patient-therapist were all residents of the same ward. A list of 20 patients that could be utilized in experiments was given to the experimenter by the clinical director of the hospital. Subjects A, B, and C were chosen from this list. The patient-therapist was also chosen from this list because of his history of successfully following instructions given to him by the attendant staff. Subject D was chosen by recommendation of the attendant staff of his ward. He was recommended mainly because he did not receive any money from outside sources and had no way in which to earn money.

A. General

All sessions were conducted in the same room. The room was approximately 12 feet by 14 feet and was equipped with one 6' X 4' work table. The subjects were asked to sit at the table in the following manner: one subject at each end of the 4 ft.
side; the other two were placed on the same side of the table. This placement allowed all subjects to be viewed by a Panasonic Video Tape Recorder model NV-8100. The camera was equipped with a wide angle lens and placed on a tripod in a corner at approximately one foot higher than the work table. An omnidirectional microphone was secured by means of masking tape 10 feet above the center of the work table. The recorder and video monitor were located in an adjacent room. The observers used the video monitor to collect all data for the experiment.

The work task presented to the subjects was to assemble assorted pieces of leathercraft chosen from the House of Woodenware & Crafts catalog (no. 37). All leathercraft articles came from the catalog's "Lace-It Kits" selection.

The method of data collection involved the following apparatus: two Endura stopwatches, two clipboards, two pencils, and one cassette tape recorder. Before any data were collected a special cassette tape was recorded by the experimenter. It involved recording the sound of a bell every 60 seconds for a total of thirty minutes. A three-second delay period was also signalled so that data could be recorded after every one minute interval. One observer was assigned two subjects during each session. The observer, using a stopwatch, recorded the total amount of time spent working for one of his patients for a one-minute interval. After one minute the bell would sound, the observer would stop the stopwatch and record the total time.
spent working in seconds. Three seconds after the bell sounded
the observer would switch to his second patient and begin
observing him. The observer also recorded the frequency of
attention by the patient-therapist. Two 30-minute sessions were
conducted each day except Sunday when only one session was run.
The sessions were always at least five hours apart. The first
session occurred immediately after breakfast in the morning and the
second session was conducted before supper in the afternoon. Each
subject was paid .25¢ per session for coming to the work area
and staying the required length of time (30 min.). The patient-
therapist was paid .50¢ per session for the same requirements.
All the patients were paid immediately after each session during
the entire experiment.

B. Phase One: General Instructions

The following operational definitions were formulated be­
fore any sessions were conducted and were utilized throughout
the experiment:

(1) Work Behavior—was defined as the amount of time (in seconds)
a subject’s hands were actively in contact with a single
unit (one piece of leathercraft) and moving it in such a
manner as to further its completion.

(2) Attention—any verbalization by the patient-therapist directed
toward another patient or patients. Any physical
contact by the patient-therapist with a patient or a
patient’s work material.
(3) **Appropriate-Attention**—any attention by the patient-therapist directed towards a patient while engaged in work behavior.

(4) **Inappropriate-Attention**—any attention by the patient-therapist directed towards a patient while not engaged in work behavior.

Work duration was measured with a stopwatch. Each time the subject under observation worked the stopwatch was started. If the subject stopped working the watch was stopped. At the end of one minute the bell sounded on the tape. The observer recorded the total amount of work in seconds on the data sheet. The observer also recorded on the data sheet the frequency of attention on the part of the patient-therapist towards the patient that was being observed. Therefore, if Subject A was being observed and the patient-therapist directed attention to Subject B it was not recorded. If Subject A was being observed and the patient-therapist paid attention to Subject A it was recorded. Only the frequency of appropriate and inappropriate attention was recorded.

The patient-therapist was given only one instruction by the experimenter for the first twenty-four sessions of the experiment. It was "You are the boss of this project. It is your job to get the men to work. You may use any means you wish to get them to work but you must not use physical coercion." This statement regarding physical coercion was greatly emphasised. The four subjects were never instructed on how to make the
leather-craft by the experimenter. This was left to the patient-therapist. The session began as soon as the patient-therapist entered the room after receiving his instructions.

C. Phase Two: Differential Instructions

The second phase of the experiment had only one change from the baseline phase. The patient-therapist was given the following instructions by the experimenter.

"Some of the patients are not working as well as we would like them to. In order to get them to work better, we are going to make a change. From now on you are to talk only to the men who are working. Do not talk to those who do not work. For example if ____ asks you about the leathercraft you are to talk to him only if he is working. If he is not working you must not talk to him. I know this will be hard to do, but please try your best."

A resume of the above statement was related to the patient-therapist before each session of the study.

D. Phase Three: Immediate Feedback

In this phase of the experiment all pre-session instructions to the patient-therapist were discontinued. The patient-therapist was given a small Sound Wave AM-FM radio with a small earplug. A wireless microphone was placed in the same room as the V.T.R. monitor and only the patient-therapist could hear what was being said into the microphone by the observer. It was placed in such a manner that one of the observers could
talk into it and communicate with the patient-therapist at any-
time. Immediately after each instance of appropriate attention
by the patient-therapist directed toward one of the patients
being observed, one of the observers would say: "Very good
_____." "That's exactly how to do it" or after inappropriate
attention, "No, that's not right _____." If the patient-
therapist paid attention to one of the patients that the ob-
server with the microphone was not assigned to observe, the
other observer instructed the first observer to speak into
the microphone. All instances of appropriate and inappropriate
attention were recorded for each patient being observed. No
other changes were made.

E. Phase Four: Reversal Phase

The portable radio with the ear phone was removed from the
patient-therapist, the patient-therapist was then given the
following instructions:

"The men are working very well now and we are almost
finished with the experiment. We now want you to talk to only
those men who are not working. If someone talks to you while
they are working, you are not to talk to them. Wait until they
stop working and then talk to them".

These same instructions were given before each session during
this phase.
Results

In order to effectively evaluate the results of the study, two important dependent variables must be studied. The first variable is the performance rating of each subject which is shown in all figures and the table as percentage of time engaged in work behavior for each session. The second variable is the amount of appropriate and inappropriate attention shown by the patient-therapist to each subject, which is shown as a frequency measure in all figures and the table. The average amount of time spent working was computed for each subject along with the average frequency of appropriate and inappropriate attention by the patient-therapist. These average figures are not always representative of actual daily sessions. e.g. for subject A the average amount of appropriate attention for the general instruction phase is once per session but during sessions 4, 5, 7, 8, 16 and 17 the patient-therapist did not give subject A any attention, appropriate or inappropriate. A break in the data line shows that a subject was absent during the session. Subjects never missed more than one session in succession.

Four inter-observer reliability checks were conducted during the experiment. During these checks two observers recorded data on the same patients. The smallest figure representing duration of time spent working was then divided by the largest figure and this dividend was multiplied by 100 to become a per cent figure.
In session 20 the reliability figures were 99% for subject A and 94% for subject B. In session 48 the reliability figures were 100% for subject C and 98% for subject D. These high reliability figures are a good indication that data was being collected accurately.

The general instruction phase of the experiment was conducted for twenty-four sessions. The most important aspect of the worker's performance data during the general instruction phase is the variability of performance. Work performances varied from 46% to 97% for subject A, 42% to 93% for subject B, 1% to 96% for subject D and 20% to 96% for subject D. The patient-therapist attended appropriately on the average of once per session to subjects A and C, twice per session to subject D and three times per session to subject B. The patient-therapist attended inappropriately on the average of once per session to subject A, twice per session to subject B, three times per session to subject C and five times per session to subject D.

Phase Two (Differential Instruction) was conducted for fourteen sessions. The amount of variability in the work performance of all subjects greatly decreased. All four subjects worked at least one entire session (100%) during this phase. Also in all cases the amount of inappropriate attention remained the same (for subject A) or decreased in frequency (subjects B, C and D). The amount of appropriate attention by the patient-therapist increased for all subjects. The one session of no work for subject C should be treated as a random data point. Subject C reported
being sick and unable to work. This report was taken as valid since the subject did not have a history of trying to avoid work and this was the only occurrence of this type of excuse during the entire study.

Phase Three (Immediate Feedback) was conducted for eight sessions. The variability of work performance remained at almost the same level as it was in Phase Two. Subjects A, B and C again worked the entire experimental period (100%) for one or more sessions. Subject D's performance decreased slightly. Both appropriate and inappropriate attention by the patient-therapist decreased during this phase.

Phase Four (Reversal Phase) was conducted for only four sessions due to lack of time on the part of the experimenter. During Phase Four there were large decreases in the work performances of subjects A, B and D. Subject C's work performance did not decrease as greatly as the other three subject's performance. The frequency of inappropriate attention by the patient-therapist was at its highest point during this period and appropriate attention was at its lowest value except for subjects C and D.
DISCUSSION

In analyzing the data for the general instruction phase it is necessary to notice the relatively high work performance for all four subjects. These high percentages might be explained by either of the following reasons or a combination of both: (1) Each subject had previously participated as a member of an Occupational Therapy class and therefore all subjects were familiar with the work task (leather craft) before the study began. (2) The definition of work used by the observers was quite broad. Any minimal effort on the part of the subjects could be considered as work behavior by the observers.

In Phase Three (Immediate Feedback) both types of attention by the patient-therapist decreased. This fact may be explained in that the patient-therapist was actually being reinforced for engaging in behavior which was incompatible with attending to subjects who were working. The patient-therapist was required to listen to communications for the portable radio and also attend appropriately to the subjects. The patient-therapist may have attended more to the radio than the subjects' work behavior. The radio communications were also unreliable. Certain areas within the experimental room were "dead areas" and the radio would not receive any signals sent from the experimenter, therefore, immediate feedback was not always possible. Another alternative which might account for the lack of control of the experimenter over the patient-therapist during this phase may
be the "institutionalization" of the patient-therapist. Instructions were very powerful when given personally to the patient-therapist by the experimenter. When the radio receiver was utilized to give feedback, the discriminative stimulus (experimenter) was lost and therefore the patient-therapist's performance decreased. A comparison between the General Instruction Phase and the Differential Instruction Phase and the Immediate Feedback Phase shows a direct correlation between the occurrence of social reinforcement from the patient-therapist and increases in work behavior on the part of the subjects.

Buehler, Patterson and Furniss (1966) found that the social living systems within institutions tend to reinforce inappropriate behavior (delinquent responses) and to punish socially conforming responses. Buehler et al., also point out that peers consequeate behaviors that lead to the maintenance of inappropriate responses. The important implication of both the Buehler et al., study and the current study is that the treatment procedures within institutions may be greatly enhanced by being aware that patients do reinforce inappropriate behaviors in other patients. By keeping reinforcement to inappropriate behavior at a minimum the treatment procedures will become much more successful.

The present study also supports the conclusions of an earlier study by Wilson and McCulley (1970). One fault of the Wilson and McCulley study was the lack of behavioral data to support their conclusions. The present study has very carefully documented the work activities of the patients and the frequency of attention by
the patient-therapist. The present data also coincide with the findings of Madsen et al. (1968). Although Madsen et al. did not give their teachers immediate feedback on their performance, successful manipulation of behavior was accomplished. The application of immediate feedback procedures should be studied in greater detail. A light system similar to that of the one used by Wahler et al., (1965) may be more effective than the radio system used in the present experiment. Another alternative might be to pay the patient-therapist contingent upon the frequency of appropriate attention. The use of patients as Occupational Therapy assistants is by no means ready to be put into widespread use. The data collected in this study support the hypothesis that mental patients are capable of therapeutically changing behavior of other mental patients.
TABLE I

MEAN PERFORMANCES OF ALL SUBJECTS

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>X % OF TIME SPENT WORKING</th>
<th>X FREQ. OF ATT BY THE PT.</th>
<th>X INAPPR. ATT BY THE PT.</th>
<th>X APP. ATT BY THE PT.</th>
<th>X % OF TIME SPENT WORKING</th>
<th>X FREQ. OF ATT BY THE PT.</th>
<th>X INAPPR. ATT BY THE PT.</th>
<th>X APP. ATT BY THE PT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUBJECT A</td>
<td>81</td>
<td>1</td>
<td>1</td>
<td>96</td>
<td>6</td>
<td>1</td>
<td>86</td>
<td>7</td>
</tr>
<tr>
<td>SUBJECT B</td>
<td>81</td>
<td>3</td>
<td>2</td>
<td>95</td>
<td>5</td>
<td>.5</td>
<td>96</td>
<td>7</td>
</tr>
<tr>
<td>SUBJECT C</td>
<td>25</td>
<td>1</td>
<td>2</td>
<td>84</td>
<td>4</td>
<td>1</td>
<td>97</td>
<td>1</td>
</tr>
<tr>
<td>SUBJECT D</td>
<td>66</td>
<td>2</td>
<td>5</td>
<td>95</td>
<td>5</td>
<td>1</td>
<td>97</td>
<td>2</td>
</tr>
</tbody>
</table>

GENERAL INSTRUCTIONS   |   |   |   |   |   |   |   |   |   |   |   |   |
DIFFERENTIAL INSTRUCTION |   |   |   |   |   |   |   |   |   |   |   |   |
IMMEDIATE FEEDBACK     |   |   |   |   |   |   |   |   |   |   |   |   |
REVERSAL               |   |   |   |   |   |   |   |   |   |   |   |   |
FIGURE I
SUBJECT A

GENERAL INSTRUCTIONS
DIFFERENTIAL INSTRUCTIONS
IMMEDIATE FEEDBACK REVERSAL

• = percentage of time spent working
□ = appropriate attention by patient-therapist
■ = inappropriate attention by patient-therapist

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FIGURE II
SUBJECT 3

GENERAL
INSTRUCTIONS

Differential
INSTRUCTIONS

IMMEDIATE
FEEDBACK
REVERSAL

\(\Delta\Delta = \text{percentage of time spent working} \)

\(\square\square = \text{appropriate attention by patient-therapist} \)

\(\longrightarrow = \text{inappropriate attention by patient-therapist} \)

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FIGURE III
SUBJECT C

GENERAL INSTRUCTIONS
DIFFERENTIAL INSTRUCTIONS
IMMEDIATE FEEDBACK
REVERSAL

<table>
<thead>
<tr>
<th>SESSIONS</th>
<th>100</th>
<th>80</th>
<th>60</th>
<th>40</th>
<th>20</th>
<th>0</th>
</tr>
</thead>
</table>

- △△ = percentage of time spent working
- □□ = appropriate attention by patient-therapist
- ⬤⬤ = inappropriate attention by patient-therapist
FIGURE IV
SUBJECT D

GENERAL INSTRUCTIONS
DIFFERENTIAL INSTRUCTIONS
IMMEDIATE INSTRUCTIONS
FEEDBACK
REVERSAL

% TIME WORKING

SESSIONS

△△ = percentage of time spent working
□□ = appropriate attention by patient-therapist
--- = inappropriate attention by patient-therapist
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REFERENCES


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