THE DEVELOPMENT AND EVALUATION OF A PSYCHOANALYTICALLY ORIENTED DAY TREATMENT PROGRAM

By

Michael A. Teixeira

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Psychology

1982

gram

the M

disor

This

later

for p

demog

these

orient

and ma

treatm

analyt

MMPI co

Visual-

ABSTRACT

THE DEVELOPMENT AND EVALUATION OF A PSYCHOANALYTICALLY ORIENTED DAY TREATMENT PROGRAM

By

Michael A. Teixeira

A psychoanalytically oriented day treatment program was evaluated over 18 months, based on census data, the MMPI and the Visual-Verbal Test measure of thought disorder, and a therapists' rating of client behavior. This program was compared with two other new and collateral day treatment programs; however, the only data for program comparison ultimately made available were demographic and census data on clients. Nevertheless, these data clearly showed that psychoanalytically oriented day treatment was more effective in motivating and maintaining chronic psychiatric clients in day treatment compared with the other two programs.

Psychometric evaluation of clients in psychoanalytically oriented day treatment was based on the MMPI completed at pre-treatment, 6 and 12 months; the Visual-Verbal Test completed at 8 and 15 months; and

the DTDB behavioral ratings completed at pre-treatment, 3, 6, 9, and 12 months. Continued planned assessments were not possible because of the abrupt disruption, and termination, of the program beginning at 15 months.

The findings for the treatment sample of males and females in psychoanalytically oriented day treatment showed a significant improvement in thought disorder on the VVT direct measure of thought disorder apparent at 15 months. The DTDB ratings showed significant improvements in overall behavioral ratings at 3, 6, 9, but not 12 months.

The MMPI findings were equivocal. At 6 months, the Lie and Hypochondriasis scales (males and females combined) showed the only near significant reductions. Males showed a significant increase on the Paranoia scale and the Psychotic Index, with a trend toward decrease on the Lie scale. Females showed a significant decrease on the Manifest Anxiety and Psychasthenia scales, with a significant increase on the Ego Strength scale. The 12 month MMPI data suggest a regression; there were no significant findings. The absence of significant MMPI changes relative to the other outcome findings was considered in relation to psychotherapeutic process in these clients, disruptive environmental factors encountered in attempting to provide psychotherapeutic treatment to aftercare clients within the community

mental health system and foster care homes, and lack of sensitivity of the MMPI to positive psychodynamic changes in psychotics.

"It all began, I said, when I decided that some experts don't really know enough to make a pronouncement of doom on a human being. And I said I hoped they would be careful about what they said to others; they might be believed and that could be the beginning of the end." -
Norman Cousins, Anatomy of an Illness

ACKNOWLEDGEMENTS

I would like to express my thanks to the members of the dissertation committee; Dr. Al Aniskiewicz, Dr. Teresa Bernardez, Dr. Elaine Donelson, and Dr. Bertram Stoffelmayr, for their suggestions and support in the completion of this dissertation.

And to the other Day Treatment staff therapists; Jane Bell, O.T.R., M.A., Marilyn Braman, S.W.T., and Keith Diedrich, M.A., and to Dr. Gail Harris, for their enthusiasm, skill, and collaboration in the development and operation of the experimental day treatment program.

In particular, I would like to express gratitude to Dr. Bert Karon, dissertation chairman, for his steady guidance and patience through my training and supervision, and completion of the dissertation, and the impact he has had on my professional growth. And to the faculty and training supervisors in the Department of Psychology, Student Counseling Center and Olin Services, and the Psychological Clinic, at Michigan State University.

Thanks to Mrs. Pat Bennett, typist, for her skillful presentation of the dissertation.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

INTRODUCTION

More than 30 years ago, speaking at the Conference on Psychotherapy with Schizophrenic Patients sponsored by the Department of Psychiatry at Yale, Dr. Freida Fromm-Reichmann (Brody & Redlich, 1952) noted two factors which she held responsible for the reluctance and delay in providing directed, intensive psychoanalytically oriented psychotherapy for schizophrenic patients.

The first factor she attributed to "the teachings of classical psychiatry, according to which the verbal communications of the disturbed schizophrenic could not be understood. His interpersonal manifestations, evidenced by attitudes, gestures, and actions were considered to be even less intelligible to the psychiatrist than his verbalized communications."

The second factor Fromm-Reichmann attributed to ". . . the older teachings of classical psychoanalysis. According to these percepts, the infantile, 'narcissistic' self-engulfment of the schizophrenic made it

impossible for the psychoanalyst to establish a workable doctor-patient relationship with him.[1] Those who promoted this line of reasoning, thereby opposing attempts to treat schizophrenics psychoanalytically, were guilty of overlooking Freud's statement[2] in which he expressed the hope for future modifications of psychoanalytic technique which would make it possible to do intensive psychoanalytically oriented psychotherapy with schizophrenics" (Brody & Redlich, p. 89).

In addition to the above two factors pointed out by Fromm-Reichmann, a third factor that has further delayed (Hill, 1974), and has even been used to repudiate the efficacy of psychotherapeutic treatments of schizophrenia, began with the introduction of chloropromazine in the middle 1950s, and has continued with the subsequent proliferation and endorsement of neuroleptic drugs as "Anti-Psychotics" and as "the most effective treatment of schizophrenia" (e.g., May 1968) despite growing

---

[1]Giovacchini (1979) admits that "because of Freud's powerful and authoritative influence, a young analyst had to possess considerable courage and conviction or stubbornness and foolhardiness to accept psychotic patients for analysis . . . The occurrence of transference in psychotic patients is no longer a debatable issue. It occurs and this is a simple empirical fact, reported by many investigators" (p. 397).

[2]Freud, S. (1904) p. 71.

evidence to the contrary in terms of: (1) significant subgroups of drug nonresponders; (2) clinical improvement and maintenance on placebos; (3) psychosocial treatment versus drug treatment outcome; and (4) neuroleptic drug risks and complications, (e.g., Anthony, Cohen, & Vitalo, 1978; Baldessarini & Lipinski, 1973; Berger & Rexroth, 1980; Bockoven & Solomon, 1975; Carpenter et al., 1977; Crane, 1973; Davis, 1975; Davis, Gosenfeld, & Tsai, 1976; Gardos & Cole, 1976; Goldstein et al., 1969, 1970; Grinspoon et al., 1972; Gunderson, 1977; Hogarty, Goldberg, & Schooler, 1974; Karon & VandenBos, 1972; Leff, 1976; Leff & Wing, 1971; Magaro & Vojtisek, 1971; Mosher & Menn, 1978; Paul et al., 1972, 1977; Rappaport et al., 1978; Rosen et al., 1971; and Young & Meltzer, 1980).

The current status of the psychotherapeutic treatment of schizophrenia is commented on by King and Goldstein (1979):

> The research literature concerning the effectiveness of psychotherapy is replete with contradictory and equivocal results. Recent reviews of the literature show studies to be distributed between two categories: the minority, which find psychotherapy alone or in conjunction with pharmacotherapy to be effective in reducing symptomatology, hospital stay, or readmission; and the majority, which find psychotherapy to be no more effective than drug alone or 'no treatment,' milieu therapy, or 'regular hospital treatment.' There is no clear tendency toward either

> of these findings. Evidence that would permit a decisive judgment concerning the effectiveness of psychotherapy with schizophrenics is not yet available.

Similarly, Mosher and Keith (1980), in an extensive review of psychosocial treatments of schizophrenia, make the following critical observations on the issue of quality control in psychotherapy outcome research:

> A striking aspect of the treatment studies included in this review is what is being touted as 'therapy.' Individual treatment, given on a 15- to 30-minute weekly or biweekly basis, would unquestionably be considered inadequate by practitioners of individual psychotherapy. Yet, this is the principal form of 'individual therapy' given in the outpatient studies reviewed here. Likewise, group meetings focused on medication and compliance would not be recognized by most clinicians as 'group therapy.' In addition, the therapies are generally very vaguely described, with little information provided concerning their focus and formats. Finally, the treatment is frequently delivered by therapists of uncited characteristics and qualifications. No wonder psychosocial treatment for schizophrenia is in disrepute! (p. 31).

THE PSYCHOTHERAPEUTIC TREATMENT OF SCHIZOPHRENIA

Critical Issues; Equivocal Findings; and Ongoing Controversies

Despite the ongoing scientific controversies over the nature of schizophrenia, and the relative effectiveness of psychotherapy, medication, and combined psychotherapy and medication in the treatment of schizophrenic disorders (Bellak, 1979; Bellak & Loeb, 1969; Gunderson & Mosher, 1975; Gunderson, 1977; Shershow, 1978), clinical researchers have continued to study and advance psychotherapeutic treatment approaches for psychosis in general, and schizophrenia in particular, and to report on the progress that has been made during the past 75 years (e.g., Arieti; Benedetti; Boyer; Brody & Redlich; Burnham; Bychowski, Eissler; Ekstein; Federn; Ferenczi; Fromm-Reichmann; Gendlin; Giovacchini; Gunderson; Hill; Jacobson; Jung; Karon; Kernberg; Knight; Lidz & Lidz; Mosher; Rosberg; Rosen; Rosenfeld; Schwing; Searles; Sechehaye; Segal; Semrad; Sullivan; Wexler, Whitaker & Malone, and Will, among many others).

Controlled Research

The systematic evaluation of the effectiveness of psychotherapeutic treatments of schizophrenia compared

with somatic methods of treatment was begun in the early 1960s with controlled outcome studies. To date, five major treatment projects have been reported: Bookhammer et al., Direct Analysis (1966); Rogers et al., Client Centered (1967); Grinspoon et al., Analytically Oriented (1967); May et al., Ego Supportive (1968); and Karon & VandenBos, Active Psychoanalytic and Ego Analytic (1972). A new collaborative study of intensive psychotherapeutic treatment of acute schizophrenics is in progress at McLean Hospital and Boston University (Mosher & Keith, 1980).

Bookhammer, Meyers, Schober, and Piotrowsky reported "A Five-Year Follow-Up Study of Schizophrenics Treated by Rosen's 'Direct Analysis' Compared with Controls" (1966).

Patients for the study were selected from consecutive admissions to the Psychiatric Reception Center of the Philadelphia General Hospital. The selection criteria were: 15-35 years of age, first attack of overt symptoms within a few months, no previous history of psychosis, no complicating physical illness, and no previous psychiatric treatment for the psychosis.

Patients were clinically evaluated by two psychiatrists and referred for treatment to either the Institute for Direct Analysis or to one of the other

cooperating hospitals for "usual treatment" at that hospital.

Two and one-half years into the study a random control group was added. This group also met the selection criteria and represented a random selection of patients who had been through the Psychiatric Reception Center at approximately the same time as the patients in the other two groups.

The three patient groups studied were: a Direct Analysis group of 14 patients; a Designated Control group of 18 patients; and a Random Control group of 19 patients.

Clinical psychiatric examinations were made on all patients "at regular intervals." The follow-up period was the same for all patients, 5.0-5.5 years. At the end of the follow-up period, the results of treatment and changes in the clinical status of the patients were evaluated based upon the criteria of the following six aspects of the patient's feelings, reasoning, and overt behavior:

1. Changes in objective signs and subjective symptoms were noted.

2. The patient's attitude toward himself was judged according to changes in anxiety and depression, in self-acceptance, and in expectations for the future.

3. The changes in attitude toward others were based on changes in the degree of emotional

interest in others, changes in relations with the members of the immediate family, changes in constructive cooperation with others, and friendliness.

4. Thought processes were another important aspect of our evaluation. Changes were observed in the amount and quality of delusional thinking, in the preservation and diversity of thought content, and in the concern with reality problems.

5. Any changes in useful work output were noted. Amount and accuracy of work were the bases for evaluating the work record.

6. Finally, the amount of time spent outside of a hospital was considered in reaching the conclusion as to whether the patient had improved or failed to improve during the follow-up period.

After evaluating all the data each patient was rated as either improved or unimproved. The follow-up was long enough to establish a reliable trend in personality changes: toward improvement, increased deterioration, or a stationary level with occasional deviations in either direction. Of the six aspects evaluated, thought processes and psychological relations with others were considered the most important in terms of improvement and unimprovement (p. 603).

The results of the study are presented as a percentage of rated improvement after the five-year follow-up: the Direct Analysis group 57%; the Designated Control group 67%; and the Random Control group 58%. The overall improvement rate for all patients was 61%. The investigators concluded that the results showed no significantly better outcome for the group of patients treated by the method of Rosen's "Direct Analysis" when

compared with two other groups of patients; a designated control group and a random control group.

In reviewing the Bookhammer et al. study, Feinsilver and Gunderson (1975) criticize the deficiencies of the study, namely the lack of description of the specific types of treatment received by the control patients, who the therapists were, and information about the frequency and duration of the "Direct Analytic" psychotherapy. What is perhaps the main limitation of this study, as Feinsilver and Gunderson note, is the lack of independent and standardized measures, and baseline assessments made prior to the follow-up evaluation ratings of improvement.

It is important to consider the importance of the process-outcome variable of duration of treatment in the evaluation of these results. Both observers and critics of Rosen's method of "Direct Analysis" (Brody, 1959; Brody and Redlich, 1952; English et al., 1961; Fromm-Reichmann, 1959; Scheflen, 1961; Searles, 1965; Spotnitz, 1961; and Whitaker and Malone, 1953) have generally acknowledged the striking improvements produced in Rosen's patients in a relatively short amount of time. Nevertheless, the intensive short-term focus of "Direct Analysis" has been criticized as being inadequate for the lasting, long-term resolution of the

psychosis, and fundamental structural changes in psychotic personalities.

Moreover, as Karon (1963) points out, evaluation of "Direct Analysis" is further complicated by Rosen's subsequent deviation from his original psychotherapeutic technique:

> Rosen's technique (1953) took its name from the fact that he used 'direct' interpretations to make the unconscious meaning of symptoms conscious. In his early views, he held that the psychosis was 'like a dream' and that making the latent content conscious served to undo the psychosis. According to Brody's description (1959), to which Rosen (1959), surprisingly, does not seem to object, Rosen no longer aims primarily at bringing unconscious conflicts to life, but rather at simply making the patient feel ashamed and guilty about being psychotic. p. 36.

Rogers, Gendlin, Kiesler, and Truax (1967) published a volume reporting the results of a five year study on the impact of psychotherapy with hospitalized schizophrenics, and with normals, in an effort to determine the elements in the therapeutic relationship which are significant to the process of personality and behavioral change during and consequent to psychotherapy.

Rogers had previously formulated three attitudinal conditions which he considered "the necessary and sufficient conditions of therapy"--emphatic understanding, unconditional positive regard, and therapist

congruence or genuineness--independent of the method, technique, or theoretical orientation of the therapist.

The design of the study called for three groups with 16 subjects each: (1) a more chronic group of schizophrenic patients (defined in terms of hospitalization for over 8 months), (2) a more acute group of schizophrenic patients (hospitalized less than 8 months), and (3) a normal group of volunteers ostensibly recruited for a personality study. From the total sample of 48 subjects--schizophrenics and normals--24 were to be randomly chosen for client centered psychotherapy.

An attempt was made to obtain a stratified sample matched for age, sex, and socio-educational status. Schizophrenic patients were also matched in pairs for psycho-social disturbance using the Luborsky Health-Sickness Rating Scale. A coin toss determined which member of the matched schizophrenic patients would be offered therapy, the other pair member becoming a control.

Therapy patients were seen twice weekly for 50-minute interviews until termination (several months - 2½ years). The control group received normal hospital treatment in a progressive state hospital.

The eight therapists who volunteered to participate in the study clustered toward a client-centered approach, with more experienced and less experienced therapists in the sample of therapists. The variables

under study, because of their generality, were considered to remain operant "despite much variation in therapist behavior." Each therapist was randomly assigned a triad of subjects (one from each group; chronic, acute, and normal).

All subjects were to be evaluated at beginning the project and at three and six month intervals (however, the investigators encountered numerous difficulties with patient cooperation, and were forced by these realities to settle for less frequent evaluations and incomplete data). The psychological test battery consisted of the Minnesota Multiphasic Personality Inventory (MMPI), the Rorschach, the Thematic Apperception Test (TAT), the Wechsler Adult Intelligence Scale (WAIS), the Stroop Interference Test, the Truax Anxiety Scale, and a Q-sort of self-related items.

Therapists and subjects completed Barrett-Lennard Relationship Inventories assessing the relationship between them. Controls filled out the Relationship Inventory for a significant other.

Rating scales for therapeutic conditions were specifically designed for the study (Accurate Empathy, Congruence, Unconditional Positive Regard) and four scales for assessing process level (Experiencing, Personal Constructs, Manner of Problem Expression, and Manner of Relating). Blind ratings were made on

excerpts of tape recorded interviews by trained undergraduate raters.

Every subject in the project was also to be seen in a Sampling Interview at three months into the project and at three month intervals thereafter, with the same interviewer for all subjects.

Therapy and control schizophrenic patients were additionally rated on their hospital behavior at three month intervals by ward staff using the Wittenborn Psychiatric Rating Scales.

These extensive project data represented assessments of the therapeutic relationship made from three different vantage points: the perceptions of the subjects; the therapists; and the unbiased judges.

The major results of the project were many promising and theoretically consistent, but statistically insignificant trends, and fewer significant outcome findings.

Schizophrenic patients in client-centered psychotherapy were generally found to perceive relatively low levels of therapist understanding, acceptance, and genuineness, but this perception tended to increase slowly over therapy.

The schizophrenic patients tended to perceive primarily the level of warm acceptance and genuineness of the therapist, with empathic understanding only

gaining in importance later on in the therapy. The investigators comment on this finding, [which has important technical implications for the conduct of psychotherapy with schizophrenic patients] that for the schizophrenic patient, the focus in entering a therapeutic relationship appears to be more upon the level of acceptance, warmth, caring, and trust offered by the therapist than on empathic understanding.

These differential therapist attitudes of acceptance-positive regard, congruence-genuineness, and empathic understanding were found to stabilize early in therapy and to remain relatively constant throughout therapy. Therapist attitudes were also found to be positively related, but appeared to tap differing dimensions of the interaction.

No significant relationship was found between the degree of therapist empathy, congruence, and acceptance (conditions) and the degree of process movement (". . . the behaviors of the person who is in process, the degree to which he is not static, his involvement in the ongoing, change-effecting process, [and] . . . the state of changingness which the person has currently achieved."). The schizophrenic patients generally showed a very limited degree of process movement.

The level of therapist understanding and genuineness showed a significant positive relationship to the

schizophrenic patients' level of self-experiencing and self-exploration. Moreover, the more the therapist was perceived as understanding and genuine, the more likely was the patient to show a greater degree of self-experiencing and self-exploration. Furthermore, this positive relationship between the level of therapist congruence and empathy and the level of patient process involvement was found to generalize to the level of openness to experience in the patients' interviews with a third person, the sampling interviewer.

It was found that the patients who showed a higher level of process in contact with the sampling interviewer (expressiveness of feelings, self-exploration, self-awareness) also showed a significant decrease in schizophrenic pathology and symptoms and a better record of remaining out of the hospital. The same positive relationship between the level of experiencing in the sampling interviews and better hospital release rate and other evidence of favorable outcome was found for the control group.

The outcome results from the psychological test battery were ultimately based on pretreatment and one battery of tests late in therapy or at the end of therapy[3]

---

[3]There was a wide range in final MMPI testing (between 324 days before termination and 105 days after termination).

due to the many problems encountered with securing patient cooperation or comprehension for testing.

The test findings showed a significant reduction in schizophrenic behavior on three scales of the MMPI (F, K, Sc) for both therapy patients and control patients. The therapy group in general did show a slightly better discharge rate 12 months after the termination of therapy, and follow-up data indicated that the therapy patients were more successful in maintaining themselves outside of the hospital.

The group of patients receiving the highest level of accurate empathy showed a significant reduction in schizophrenic pathology on the schizophrenia scale (Sc) of the MMPI; conversely, patients in therapeutic relationships rated low on accurate empathy showed a trend toward increase in their schizophrenic pathology [a very important research finding relevant to quality control of psychotherapy variables in psychotherapy outcome research, and underscoring the fact that "psychotherapy" is not a homogeneous variable in psychotherapy outcome research]. Findings for the control patients were intermediate between the high and low empathy receiving patients.

Thematic Apperception Test (TAT) data showed evidence of greater constructive personality change in the therapy patients than in the control patients on

various indices of change on the TAT. The therapy patients' TAT's showed a significant decrease in emotional distance from the experiences described in the TAT's pre- to post-test. This finding was interpreted as an indication that the therapy patients showed a reduced need to deny or to emotionally distance themselves from their experiences. The therapy patients also showed a significant improvement in the appropriateness of their emotional expression whereas the control patients showed a trend toward more extreme expression of emotion.

Finally, Rogers et al. found significant positive relationships between evaluations of the therapeutic relationship made by the unbiased raters and the schizophrenic patients, but found that the therapist evaluations of the same relationship were often significantly negatively related to the perceptions of the raters and patients. They also found that, "In the more successful cases, the patient and therapist tended to see the relationship in similar fashion with scores positively correlated. In the less successful cases there was a sharply negative correlation between the perceptions of patients and therapists."

The investigators concluded from these last findings that, "For the purposes of understanding and predicting the dynamics and outcomes of psychotherapy with schizophrenics, the assessment of the relationship

by the therapist is less satisfactory and presumably less valid than the assessment by the patient or by an unbiased judge."

Heller (1969), reviewing the Rogers et al. project, notes that the distinguished commentators who reviewed the clinical tapes and transcripts of the project were fairly unanimous in perceiving the project therapists as often "cool, aloof, and overintellectualized." However, since the therapeutic model was client-centered or non-directive therapy, perhaps, as Heller concludes, "a more active, giving style may be required for these conditions [empathy, congruence, and positive regard] to be properly communicated to the [psychotic] patient."

Feinsilver and Gunderson (1975) comment in their review that:

> This study is particularly noteworthy because it was the first to state that psychotherapy for schizophrenic patients can produce measureable differences from control patients and that its effectiveness seems to be related to the establishment of a therapeutic relationship characterized by empathy and congruence. No other study has attempted to sift out the critical determinants within a psychotherapeutic relationship which can effect outcome in schizophrenic patients. Rogers et al. have not treated the patient and the therapist as independent variables, but rather have focused upon their relationship--the interaction and process of therapy (p. 408).

These reviewers criticize as a major contaminating factor the fact that the control patients received

drugs as a regular part of their usual hospital treatment while the psychotherapy patients apparently received medication "in a completely uncontrolled, irregular, and unknown fashion." Feinsilver and Gunderson conclude:

> This is unfortunate because it is difficult to be sure, in retrospect, how drugs affected the study's ultimate findings. One might speculate that, since the controls probably received more drugs than the experimental group, the effectiveness of psychotherapy reported might be more impressive than it at first appears (p. 409).

Grinspoon, Ewalt, and Shader (1967, 1972) published the results of a project on the treatment of schizophrenia comparing phenothiazines in conjunction with individual psychotherapy and an active therapeutic milieu, and individual psychotherapy and active milieu without concomitant phenothiazines.

Two groups of ten chronic schizophrenics were each successively transferred from the wards of the Boston State Hospital to a special research ward (the Clinical Research Center) of the Massachusetts Mental Health Center for the two years of treatment and study.

The patients were randomly chosen from the larger ward population of males, unmarried, 18-35 years old, hospitalized for at least three years, and without brain damage or serious organic disease. The mean age of the patients in the two groups of ten patients (which

were combined for the research analysis) was 26.7 years; these patients had spent an average of 6.5 years in mental hospitals and an average of 7.5 years had elapsed since their initial hospitalization.

The Phillips Premorbid History Scale for these 20 chronic schizophrenic males showed a very poor premorbid adjustment which was regarded as consistent with a process type of schizophrenia. The Hollingshed-Redlich Two-Factor Index of Social Position showed a similarity of social class origin for the patient sample (Lower, Class V). Diagnostic categories for the sample included Paranoid, Undifferentiated, Catatonic, Simple, and Hebephrenic classifications of schizophrenia.

Upon transfer to the special research ward, each group of ten patients was administered identical capsules "the contents of which were to remain unknown to the clinical staff." One difference in procedure between the two successive experimental groups occurred at this point of transfer: Group I patients received an inert placebo at the point of transfer to the special research ward. Group II patients, several weeks prior to being transferred, had their medications converted to an equivalent dose of thioridazine (Mellaril), which was then gradually tapered off during a ten week "drying out" period.

Thus, at approximately 13 weeks after admission for the first group of patients to the ward, and at approximately 22 weeks after admission for the second group transferred to the ward two years later, five patients in each group were randomly chosen to receive thioridazine, while the remaining five in each group began to receive a placebo.

Another difference in the treatment of the two groups occurred at this point; the first group was begun on an active placebo containing phenobarbital and atropine sulfate (to mimic the side effects of thioridazine in an attempt to ensure double-blindness in the experimental design). Dosages of the thioridazine and phenobarbital were built up in graduated dosages over a four-week transitional period; the ward administrator was then informed only that he could adjust the drug dosage within certain prescribed limits of dosage. At approximately 32 weeks, Group I placebo patients were changed from the active to an inert placebo. Group II patients were begun on an inert placebo.

After 66 weeks into the study, patients in each group who had been receiving thioridazine were instead given placebo for a three month drug withdrawal period following which thioridazine was resumed and maintained until the end of the study.

The investigators describe the psychotherapy, therapists, ward staff, and milieu program:

> All patients in both groups were treated equally with regard to the other two primary treatment modalities, psychotherapy and milieu therapy. Each of the patients began intensive individual psychotherapy with senior staff psychiatrists, all of whom were either psychoanalysts or psychoanalytically oriented and all of whom were considerably experienced in the psychotherapy of schizophrenia. All patients began psychotherapy about four months after beginning to receive project medications, and all were seen at least twice a week over the remainder of each two-year period (1972, p. 148).

> A nursing staff of twenty-five people, an occupational therapist and a social worker involved the patients in an intensive program for the entire two-year period. Among the various facets of this milieu program were diverse activities, ranging from therapeutic community meetings and other group or individual ward functions to frequent beach outings, museum visits, and the like (1967, p. 117).

The 18 therapists in the study were experienced psychoanalytically oriented psychiatrists on the senior staff of the Massachusetts Mental Health Center who were asked to undertake a commitment to treat one of the patients at least twice a week for two years. Grinspoon observes that:

> From the point of view of their qualifications and experience, they were an exceptional and impressive group. However, most of them did not match the first-year residents for enthusiasm and eagerness. To a man they were already too busy with teaching and treatment responsibilities, and now they were being asked to spend at least two hours

> a week for two years without any additional compensation in someone else's research project. It is certainly not to be wondered at that some of them seemed less than enthusiastic. In fact, what seems remarkable is that there was not, under these circumstances, more ambivalence than was apparent . . . How their differences in attitude and sentiment about the project was reflected in their work with the patients is difficult to assess, but it must be noted that such differences did exist (1972, p. 20-21).

The main focus of the study was on changes in manifest psychopathology and adjustment to the ward environment based upon two rating scales: The Behavioral Disturbance Index (BDI) is a 54-item scale which assesses the degree to which patient behavior, thinking processes, and affect are disturbed. The Hospital Adjustment Scale (HAS) is a 90-item scale which measures the patient's capacity to adapt to the environment. A third source of data were the patient diaries ("Please write about your experiences today, particularly your thoughts and feelings"), and the daily ward nursing notes.

Psychological evaluations were obtained for the patients toward the end of the "drying out" period and approximately two years later at the end of the special ward assignment. The psychological test battery included the Wechsler Adult Intelligence Scale (WAIS), Rorschach, Thematic Apperception Test (TAT), Sentence Completion, and free drawings. Unfortunately, results of

the analyses of the psychological test data have apparently never been published.

Mental status examinations were also administered at the two testing periods. Additionally, for Group I patients, Quantified Mental Status scores (QMS) were obtained from two independent psychiatrists scoring the mental status write-up "blind" to treatment. Mental status examinations were obtained for Group II patients one year after discharge and quantified in the same manner.

The findings reported for the BDI and HSI data were that on both scales the combination of phenothiazines and psychotherapy was found to be significantly greater in reducing symptomatology and improving adaptation than placebo and psychotherapy. Patients receiving psychotherapy and phenothiazine showed some change as evidenced by quantitative changes on the BDI and HAS. The psychotherapy and placebo patients showed no change over the course of two years. The substitution of placebo for phenothiazine was found to lead to a worsening in psychopathology.

Therapists' absences were found to have no significant effect upon the patients on either phenothiazine, placebo, or the sample taken as a whole. The investigators concluded from this finding that

there was no evidence that a substantial working alliance had been established.[4]

Grinspoon et al. concluded from the findings that "psychotherapy alone (even with experienced therapists) does little or nothing for chronic schizophrenics in two years' time. Moreover:

> Phenothiazine therapy in conjunction with psychotherapy seems to work quite well at reducing florid symptomatology and also perhaps at making the patient more "reachable', more receptive to communication with the therapist and others. Though some therapists have made the claim that pharmacotherapy can only interfere with progress in psychotherapy, our findings do not bear this out (p. 153).

However, the authors acknowledge that even with pharmacotherapy:[5]

> The observed changes did not suggest that the patients were any less schizophrenic but for the most part merely meant that the group exhibited less florid symptomatology . . . There was no evidence that any enduring and fundamental change had been achieved by medication (p. 154).

There are, however, important findings reported in the Boston study which are <u>supportive</u> of the effectiveness of psychoanalytically oriented psychotherapy

---

[4] C.f., patient reactions to therapist absences in Fromm-Reichmann (1950); Giovacchini (1979); Searles (1965).

[5] C.f., May (1968).

with particular therapists, and consistent with psychoanalytic theoretical and technical conceptualizations of psychosis (viz, repression of intense affect, especially rage; regression as a defense).

In the summary chapter of project findings for both chronic and acute schizophrenic patients, Grinspoon et al. report that:

> Regardless of drug or therapist type, patients who improved most had therapists who more often attempted to have their patients discuss anger, while those patients who improved least were treated by therapists who were less likely to try to get patients directly to discuss anger ($p < .05$) p. 246.
>
> We continue to conclude that appropriate antipsychotic drug regimens are of primary value in the treatment of acute and chronic schizophrenia. However, we would now add that the degree of improvement may vary as a function of therapist type (p. 247).

Furthermore, as Karon (Magaro, 1976) points out:

> If one looks at the ability to stay out of the hospital in the long run or to function outside the hospital in the long run, as opposed to criteria which reflect ward adjustment, then even studies whose findings are supposedly negative report gains for patients receiving psychotherapy (e.g., Grinspoon et al., 1972) p. 184.

In reviewing the Grinspoon et al. project, Cole criticizes the lack of drug and placebo controls on the chronic wards of the state hospital from which the study patients were transferred to the special research ward. He observes that:

> Without these necessary controls, it is impossible to say how the intensive non-drug therapy affected either the drug or the placebo groups (p. 129).
>
> It would be helpful to know whether the drug-treated patients achieved a level of adjustment only equal to that at which they had been before they left the state hospital or whether they were substantially improved over that level (p. 130).

Feinsilver and Gunderson (1975) comment on the study that:

> . . . Conclusions specific to the value of psychotherapy itself cannot be drawn because the study lacked a control group in the same setting which did not receive psychotherapy (p. 414).

Regarding the finding that the placebo group was not appreciably improved with intensive psychotherapy and intensive milieu; and in fact may have been made worse, Cole questions whether the intensive milieu was not too intensive, driving these chronic schizophrenic patients into further psychotic withdrawal:[6]

> In pharmacological terms, one can certainly conceive of a toxic dose of environmental stimulation. Perhaps a less intense program would have yielded more improvement.

---

[6]Social withdrawal in chronic schizophrenics has been found to be associated with increased physiological arousal (Venables & Wing, 1962). Leff (1976) suggests that schizophrenics may monitor their own sensitivity to emotional stimulation and employ social withdrawal as a defense against overstimulation. Venables & Wing suggest a relationship between the level of arousal and reduction of motivation as expressed in behavior or in affective responses.

> It is certainly possible that both a barren custodial milieu and an overactive one could be deleterious to chronic schizophrenic patients with limited psychic resources.
>
> Phenothiazines in animal studies appear to enable the organism to screen out irrelevant stimuli while preserving the ability to respond to important stimuli. If, as recent work by Jones et al. suggests, schizophrenics are overresponsive even to trivial stimuli, perhaps chronic schizophrenics really need a phenothiazine to be able to tolerate intensive interpersonal therapies (p. 130).

Greenblatt (Grinspoon et al., 1972) was an observer on the special research ward, and comments:

> My second observation is that several factors may possibly have slowed the recovery of patients transferred and treated at the Clinical Research Center. The small ward, for example, with high ratio of staff-to-patient, the intensive social interaction, plus the high hopes and expectations of the staff for therapeutic progress, may have threatened patients to the point of exaggerating or hardening their pathological defenses. To an outside observer the climate in the Clinical Research Center was extraordinarily different from that at Boston State. In the latter instance 'open spaces' and less intense expectations of staff concerning patient progress seemed to prevail (p. xi).

Zetzel (1967) concludes: "It does not, however, enable us to draw any definite conclusions as to the degree to which such patients might, under optimal conditions, achieve significant intrapsychic maturation as a result of long-term, intensive psychotherapy."

The uncontrolled variables of research and clinical expectations, physical environment, and

staff-to-patient ratio have been criticized as factors which interfered with optimal treatment in the Boston study. Other subtle factors could have been the paranoid fantasies aroused in these already suspicious and mistrustful schizophrenic patients, by perceptable and persistent observation by staff for rating purposes ["the ever-present problem of patient and staff expectancy effects and increased vigilance" - Paul et al., 1972]; the daily diary directive for "thoughts and feelings" which may have been perceived by these patients as "thought control," intrusiveness, criticism, and guilt-arousal (e.g., Leff, 1976; Tarrier, 1979); and possibly exacerbation of the homosexual paranoid anxieties, described in the case histories, on the small, all male special research ward. Patient Robert, one of the acute schizophrenic patients who had been a law student, was described as refusing to take his project capsules because he believed them to be poison. He also had the interesting delusion that he was "a participant in a hockey game."

A relevant example may further illustrate some of the problems of uncontrolled countertherapeutic variables that can contaminate the results in psychosocial treatment outcome studies, often in undetected ways.

Spadoni and Smith (1969) also reported a negative result for milieu therapy in the treatment of schizophrenic patients. Their milieu design excluded individual psychotherapy, drugs, and other somatic treatments.

> Psychotic behavior was seen as a disguised communication (message) to be understood (decoded) by staff and then fed back to the patient in the form of an interpretation or confrontation. Once the underlying meaning of the symptom was uncovered and communicated to the patient, he would feel 'understood,' leading to his feeling accepted by the group. Such acceptance would then motivate him to communicate and behave more appropriately. The staff spent a good part of each day analyzing and interpreting patient communication, both in staff and patient meetings (p. 548).

Given this humanistic and optimistic treatment approach, the investigators were very distressed by the outcome of the treatment: they encountered a high incidence of acting-out on the unit and a low improvement rate; in particular, they observed that:

> The two year period of the project was marked by many incidences of assaultive, destructive, denudative, bizarre, and regressive behavior. There was an extremely high elopment rate. During one six month period, more elopments occurred from this 15-bed unit than from all the remaining units of 300 beds combined (p. 549).

To account for this unexpected outcome, it is suggested that the extreme attention-seeking and aggressive acting-out behavior may have been an unpredicted

but understandable reaction to the milieu treatment approach itself. This is because rather than inducing the patient to "feel accepted by the group," with this therapeutic goal in turn leading to the goal of more appropriate communication, the milieu as described may have inadvertently had the opposite negative effect of making the patient feel neglected or rejected as an individual, with his identity and needs being subordinated to "the group."

Spadoni and Smith had stipulated that:

> Group involvement was all-important. The group was the method of controlling and changing behavior. Individual patient needs were subordinate to the needs of the group. Staff members were discouraged from forming relationships with individual patients but instead were advised to relate to them as a group. Patient complaints, questions, and symptoms were constantly being referred back to the group for discussion and decision-making rather than handled on an individual basis (p. 548).

Thus, the angry acting-out behavior in the Spadoni and Smith study can be understood dynamically since schizophrenics are generally regarded as being notoriously sensitive to perceived rejection, in the same way that the possible overstimulation in the Boston study Clinical Research Center may have adversely affected outcome in that project.

Parenthetically, it is noteworthy that etiological research (Bellak, 1979; Goldstein & Rodnick,

1975; Karon & VandenBos, 1981; Leff, 1976) suggests that preschizophrenics are pathogenically raised in familial environments in which the child's individual feelings, needs, and ways of experiencing are not recognized, understood, or met often enough; in which there is a characteristic "blurring" of separate individual identities; and in which there are often subtle but consistent deprivations and rejections, or more blatant and destructive developmental traumas and failures.

The Schizophrenia Research Project (May, 1968; 1976a; 1976b) compared the relative effectiveness of five different treatment methods commonly practiced for the treatment of schizophrenia in a good public hospital: (1) individual psychotherapy alone, (2) ataraxic drugs alone, (3) individual psychotherapy plus ataraxic drugs, (4) electroshock, and (5) milieu [defined as a control group receiving none of the other specific treatments].

Admissions to Camarillo State Hospital were screened for: diagnosis of schizophrenia; first admission or no significant prior hospitalization; age 16-45 inclusive; no history of organic brain damage, epilepsy, or history of alcohol or drug addiction; and no major physical illness or complicating factor that might interfere with any of the five treatment methods. Patients selected for the study were defined as middle

prognosis schizophrenics. The 228 male and female patients were randomly assigned to one of the five treatment groups.

Each one of the five different forms of treatment was provided by each psychiatric resident, or psychiatrist having up to three years of post-residency experience. Six months of residency training were required before a resident could begin psychotherapy with a patient.

> Each patient's treatment was supervised by a treatment supervisor experienced in the particular treatment that was being given and who believed in its efficacy. Care was taken to see that each form of treatment was given a fair trial under good realistic conditions in suitable dosage for an adequate length of time--until the patient was either successfully released or treatment had been given for six to twelve months and both the treatment supervisor and the therapist agreed that it had been a failure. Those who were declared treatment failures, having failed to respond to one of the five experimental treatments, were subsequently treated with GROUP PSYCHOTHERAPY PLUS ATARAXIC DRUGS. This was selected as a combination commonly used and advocated in public hospitals for the treatment of schizophrenic patients (1968, p. 57).

Patients assigned to PSYCHOTHERAPY ALONE and to PSYCHOTHERAPY PLUS DRUG received from 7 to 87 hours of psychotherapy (Mean 46 hours) until they were either released or declared treatment failures at the end of a year. Descriptively, May states that:

> From a more theoretical point of view, the therapy was in general ego-supportive and

> reality defining. There was a minimum of depth interpretation and use of psychoanalytic terminology; a substantial focus on working through the patient's problems in his current life situation; some confrontation with the reality of the patient's own behavior and of the manner in which he was operating; a considerable amount of clarification of perceptual distortion; and emphasis on the therapist acting as a suitable model for introjection (1968, p. 83).

Evaluation was based upon comparison of before and after treatment data. An independent rating team of two psychoanalysts made initial and terminal ratings individually and consensually on the Menninger Health-Sickness Rating Scale (MHS) which provided a global rating of clinical status and was used to make a prognostic rating for predicting the patient's level in two years; the Camarillo Dynamic Assessment Scales (CDAS) which rated psychodynamic factors (Affective Contact, Anxiety Level, Ego Strength, Extent to Which the Environment Suffers, Insight, Motivation, Object Relations, Sense of Personal Identity, and Sexual Adjustment), and ratings of the severity and duration of Precipitating Stress.

The nursing staff rated patients consensually under the guidance of the research nurse as senior rater on Patient Participation, Idiosyncratic Symptoms (ISR), the MACC Scale (Motility, Affect, Cooperation, and

Communication), the Menninger Health-Sickness Rating Scale (MHS), and a General Improvement Rating.

The treating physician (therapist) completed the Jenkins Symptom Rating Scale (SRS), the Psychotic Confusion Scale (AA), a subscale of the Ann Arbor Mental Status Scale (added in the second year of intake beginning with patient #69), and the Clyde Mood Scale (CMS) (Friendly, Energetic, Clear Thinking, Aggressive, Jittery, and Depressed). Each of the above ratings was made initially, at three month intervals, and after treatment.

Psychological evaluation was made using a Self-sort Clyde Mood Scale (CMS) initially, at three month intervals, and at the end of treatment. Beginning with patient #10, the Similarities and Proverbs of the Wechsler Adult Intelligence Scale (WAIS) and the Shipley Scale were administered before, at three month invervals, and after treatment. The Minnesota Multiphasic Personality Inventory (MMPI) was administered before and after treatment and at six months if the patient was still in the hospital. In addition to the standard MMPI scales, the Psychotic Triad index, Caudra Control Scale, Barron Ego Strength Scale, and the Taylor Manifest Anxiety Scale was scored. Finally, the Draw-a-Person test was obtained before, every three months, and after treatment.

Comparison and evaluation of the five treatments were made based upon four general criterion categories:

(1) Clinical--independent ratings of nurses, therapists, psychoanalysts.
(2) Psychometric--MMPI, Similarities-Proverbs, Shipley Scales.
(3) Movement--release rate and measures of hospital stay.
(4) Cost--various cost of treatment indices.

By clinical criteria, PSYCHOTHERAPY PLUS DRUG was generally found to be more advantageous than DRUG ALONE; however, the overall differences between the two treatments were small and not significant.

The psychometric criteria showed DRUG ALONE to be superior to PSYCHOTHERAPY PLUS DRUG on almost all measures; however, these differences were small and not statistically significant except on one measure.

Based upon the movement and cost criteria, DRUG ALONE was found to be superior to PSYCHOTHERAPY PLUS DRUG, with cost showing a significant difference between the two treatments; DRUG ALONE showed the highest release rate and the shortest average length of hospital stay.

PSYCHOTHERAPY ALONE and MILIEU were found to be the least effective and most expensive forms of treatments, with ECT occupying an intermediate position. On 13 out of 19 clinical measures PSYCHOTHERAPY ALONE showed no significant effects.

Follow-up data on the outcome of the five treatment methods were reported on stay from first admission and from first release (May et al., 1976a, 1976b) for the total number of days hospitalized over cumulative periods of one, two, three, four, and five years.

The data showed that patients treated with PSYCHOTHERAPY ALONE spent significantly more time in the hospital than patients treated with DRUG ALONE, PSYCHOTHERAPY PLUS DRUG, and ECT after one, two, and three years. The MILIEU group was not significantly different from PSYCHOTHERAPY ALONE. This pattern of differences held when only the initial treatment successes were considered; PSYCHOTHERAPY ALONE patients did significantly worse than ECT, DRUG ALONE, and DRUG PLUS PSYCHOTHERAPY groups at three years.

Follow-up stay from first release data showed a significant difference at two years; the PSYCHOTHERAPY ALONE group was found to be significantly worse than the ECT group. At five years the PSYCHOTHERAPY ALONE group was significantly worse than DRUG ALONE, MILIEU, and ECT, but was not significantly different from the DRUG PLUS PSYCHOTHERAPY GROUP. In successfully treated patients, PSYCHOTHERAPY ALONE was significantly worse than the other groups at two years, and than ECT at three years. There were no differences between the other groups.

The results of May's influential Schizophrenia Research Project, with its large sample size and comparison of five different treatments of schizophrenia, strongly support the conclusion that compared with ataractic drugs, psychotherapy alone is a relatively ineffective treatment for hospitalized schizophrenics.

However, the generality of this conclusion beyond the somewhat restricted conditions of May's study may be more limited than would appear in many secondary sources.

Feinsilver and Gunderson (1975) note that, "By most standards, May's study has only covered the initial phase of psychotherapy, and therefore cannot be used to assess the efficacy of long-term psychotherapy." In fact, in the Camarillo study, patients received an average of only 46 hours (over 6-12 months) of psychotherapy compared with an average of 70 sessions (over 20 months) in the Karon et al. (1969; 1970; 1972; 1975a; 1975b) Michigan State Psychotherapy Project, which found psychoanalytic psychotherapy to be more effective than medication in producing long-term clinical improvement in schizophrenics. Yet, Karon & VandenBos (1972) have noted that:

> If this study had confined itself to short term effects (six months) and included only the inexperienced therapists (even under supervision), it would have been necessary

> to conclude that psychotherapy was of no significant benefit to the patients as compared to medication. However, if it had been confined to the experienced therapists, the benefit was discernable even at six months (p. 12).

Greenblatt and Leavitt (May 1968), Rosen (1969), and Wexler (Gunderson & Mosher, 1975) comment that perhaps the relative ineffectiveness of psychotherapy in the May project reflects the limited prior training and experience of the project psychotherapists. Moreover, since the project therapists were supervised ". . . by a treatment supervisor experienced in the particular treatment that was being given and who believed in its efficacy," Wexler (Gunderson & Mosher, 1975) and Hamilton (1968) raise the issues of the variability in supervisor experience in, and attitude toward, the psychotherapeutic treatment of schizophrenia. Hamilton expresses the following concerns about the research methodology:

> 'Believed in the efficacy of the particular treatment that he supervised.' The phrase in quotes is mentioned to point up some possible serious contradictions. Firstly, while a positive attitude is thought to be an important aspect of the supervisor, I could find no mention of what the <u>therapists'</u> in this regard were. Secondly, I was impressed that none of the supervising psychoanalysts commenting in the last chapter mentioned any conviction or bias in favor of <u>intensive</u> psychotherapy for acute schizophrenia, and Dr. May himself describes the therapy as 'ego-supportive and reality defining.' Regarding his own personal conviction, Dr. Fine, one of the supervising

analysts, is explicit: 'I am not generally in favor of psychoanalysis or formal psychotherapy in the treatment of acute schizophrenia. The supervision that I administered to the psychiatric residents was what I too would call psychotherapeutic management.'

Another supervisor, Dr. Feldman, comments along a similar vein, urging 'proper 24-hour psychotherapeutic management' over psychotherapy: 'repeated brief contacts with the psychiatrist and ancillary personnel are much more beneficial with the acutely psychotic patient at this stage than any attempt to establish a psychotherapeutic relationship.'

. . . Dr. Leavitt is quite clear: 'It has always (italics mine) been my impression that psychotherapy with such severely ill schizophrenic patients is of restricted value, the principal indication being for research interest, and the principal beneficiaries being that limited number of patients treated by a small group of unusual therapists.'

I cite these statements, sentiments that would probably be shared by the majority of the psychoanalytic community, to point up the difficulty that plagues all research in psychotherapy, essentially the problem of standardization.

The statements raise the possibility of a contradiction between research design and methodology as carried out. I would gather, from the author's definition of psychotherapy as well as other statements throughout the book, that he would agree that the attitude of the therapist is a significant factor influencing outcome (in my experience in psychotherapy with schizophrenics, it is crucial), and more data on that aspect of treatment would have been welcome.

Other questions come to mind as the result of the supervisors' comments. It is possible that some of the 'psychotherapy' patients received in actuality 'psychotherapeutic management'? (p. 731-732).

The Michigan State Psychotherapy Project (Karon et al., 1969, 1970, 1972, 1975a, 1975b) was designed to evaluate the effectiveness of intensive individual psychotherapy for hospitalized schizophrenic patients, comparing two types of psychoanalytic psychotherapy--one without adjunctive medication and one using medication adjunctively--and usual hospital treatment with medication.

Patients for the study were selected from admissions to the Detroit Psychiatric Institute:

> The selection of patients in our study was made by independent research personnel in sets of three for comparable severity and then random assigned to the three treatment groups. Assignment to individual therapists was on a rotation basis, determined by compatability with the therapists' schedules, and with the necessity of adequate training (without such training, our study would have been pointless). . . . Evaluation for selection was solely in terms of meeting the selection criteria. Selection was made by the same criteria and the same research personnel throughout.

The selection criteria were: clearly schizophrenic symptomatology, no organic pathology, and acute onset. By the end of the project the investigators realized that few if any of their patients were truly acute (at least one-third had been hospitalized previously, which had not been divulged by the relatives in the screening interviews).

Thirty-six clearly schizophrenic patients, primarily poor, inner-city Black, chronic and severely impaired, were randomly assigned to one of the three treatment groups:

Group A--An "active" psychoanalytic psychotherapy without adjunctive medication (Karon, 1963, 1976; Karon & Rosberg, 1958a, 1958b; Karon & VandenBos, 1977, 1981; Rosberg & Karon, 1958, 1959). Patients were seen for intensive individual psychotherapy sessions five times a week until discharge and usually once a week thereafter. The senior author (psychologist) treated four patients and supervised five trainees (three graduate students in clinical psychology and two psychiatric residents) who treated eight patients.

Group B--An "ego-analytic" psychoanalytic psychotherapy using adjunctive medication (100-600 mgs. chloropromazine or equivalent daily, generally decreased or eliminated at discharge). Patients were seen three times a week for at least 20 sessions and eventually reduced to one session per week. An experienced therapist (psychiatrist) treated four patients and supervised five trainees (three residents and two graduate students) who treated eight patients.

Group C--The "hospital control" or comparison group[7] of 12 patients receiving "usual hospital treatment" from psychiatric residents with medication (300-600 mgs. chloropromazine or equivalent daily). Patients who were not improved to the point of discharge on medication after a few weeks were transferred from this short-term municipal hospital to a state hospital for continued hospitalization.

All patients were evaluated before treatment began and after 6, 12, and 20 months (end of treatment) by research personnel not connected with treatment who were "blind" to which treatment group the patient belonged to.

The measures of the effectiveness of psychotherapy were divided into four categories: (1) length of hospitalization, (2) clinical evaluation of functioning (CSI), (3) direct measures of the thought disorder, and (4) projective tests.

The psychological test battery included intellectual tests; the Thorndike-Gallup Vocabulary Test (TGV), the Porteus Mazes (PM), the Wechsler Adult Intelligence Scale (WAIS), and the Feldman-Drasgow

---

[7]Karon & VandenBos (1972) point out that "The control group was not a 'no-treatment' group. Additional hours of individual psychotherapy can only be justified if they produce greater change than currently available mass treatment (i.e., medication)."

Visual-Verbal Test (VVT) measure of the schizophrenic thought disorder, and projective tests; the Rorschach Inkblots and the Thematic Apperception Test (TAT).

An intensive psychiatric interview, the Clinical Status Interview (CSI), was conducted by a psychiatrist experienced with the kind of patients being studied, but unconnected with the treatment in any way. The CSI was recorded, edited only for reference to the specific treatment received, and blind rated by research psychologists on the following 11 criteria of mental health: ability to take care of self, ability to work, sexual adjustment, social adjustment, absence of hallucinations and delusions, relative freedom from anxiety and depression, amount of affect, variety and spontaneity of affect, satisfaction with life and self, achievement of capabilities, and benign rather than malevolent effect on others.

> The resulting quantitative measure was found empirically to be both reliable and valid, and represents the most carefully blind and yet relevant criteria to be used in any research on treatment with schizophrenics (Karon & VandenBos, 1978, p. 481; see also Karon & O'Grady, 1970).

Hospitalization data were recorded during the treatment phase (20 months) and a follow-up phase (20-44 months), with information collected from regional state, metropolitan, and private hospitals.

The results of the comparisons between patients receiving psychotherapy and patients receiving "usual

hospital treatment"--medication and usual hospital programs, without psychotherapy--showed significantly less time spent in the hospital, improved overall functioning (CSI), and decreased thought disorder (VVT, WAIS, PM) in the patients who received intensive psychotherapy compared with patients who received routine hospital and post-hospitalization treatment.

A more specific five group analysis of the data separating out Group A and Group B patients, and patients treated by experienced versus inexperienced therapists was also reported.

Inexperienced therapists providing psychoanalytic psychotherapy with adjunctive medication were the most effective in getting their patients discharged. However, on the overall clinical status evaluation these same patients were not significantly different from the hospital comparisons. Patients of the inexperienced therapists using adjunctive medication spent about as much time hospitalized over the follow-up as the comparison group.

Patients of the inexperienced therapists not using medication showed a comparable length of hospitalization to the hospital comparison patients during the treatment phase of the project, but showed a marked long-term reduction in hospitalization over the two

year follow-up compared with patients who had received usual hospital treatment.

Patients of the supervisor and trainees in Group A (active psychoanalytic psychotherapy without medication) showed the most striking improvement on the VVT, the most direct measure of the schizophrenic thought disorder; significantly greater than Group B or the comparison patients.

The patients of the experienced therapists did significantly better in the long run than patients of the inexperienced therapists, showing a more balanced overall improvement, and much less time spent in the hospital than the comparison patients.

Karon and VandenBos report that the two best predictors of outcome or long-term adjustment were the Clinical Status Interview (CSI) and the Visual-Verbal Test (VVT) measure of the schizophrenic thought disorder; and improvement on these two measures best predicted long-term adjustment. Moreover, "The long-term (follow-up) hospitalization data thus seems to reflect the change in the thought disorder during therapy (c.f., the 20 month VVT data), rather than the short-term hospitalization data."

The findings of the Michigan State Psychotherapy Project provide evidence for the effectiveness of intensive psychoanalytic psychotherapy of

schizophrenia. Karon and VandenBos (1978) summarize the basic findings of the project:

> Psychotherapy is more effective than medication, particularly in the long run, in decreasing thought disorder, improving overall clinical status, and decreasing hospitalization.
>
> Medication as an adjunct to psychotherapy makes behavioral control easier, but slows underlying change (i.e., improvement in thought disorder) and, hence, medication is preferable as a temporary rather than permanent adjunct.
>
> Follow-up hospitalization data show a marked long-term advantage of psychotherapy over medication in the patient's ability to stay out of the hospital.
>
> This long-term advantage is apparently mediated by the greater decrease in thought disorder, i.e., the improved ability of the patient to think realistically when he wants to do so.
>
> Treatment by psychotherapy costs less than treatment by medication in the long run (i.e., over four years: Karon & VandenBos, 1975a, b; 1976).

May and Tuma (1975) are generally critical of the design and results of the Michigan State Psychotherapy Project, pointing out criticisms of unrandomized patient assignment to therapists, small n, preferences for statistical procedures, and absence of therapist-centered analyses. They acknowledge that "The other reported differences between experienced and inexperienced therapists are not impressive, at best to be interpreted as weakly positive," but ignore the

major comparison between patients who received psychotherapy and those who received medication without psychotherapy.

Feinsilver and Gunderson (1975) comment that the Michigan State Psychotherapy Project findings are seriously weakened by the uncontrolled variables of drugs, hospital setting and transfer, and concluded that "It would seem that this study lends credibility to the idea of 'gifted specialist' and casts doubt upon the positive interaction of drugs and psychotherapy."

Karon and VandenBos (1975a, b) have responded to the methodological criticisms of May & Tuma (1975). Regarding the issue of how the hospital transfer of the comparison group affected outcome findings, Karon and VandenBos report:

> That such a transfer did not work to the marked detriment of the patients seems to be reflected in the fact that our comparison group (medication only) did not spend any more time in the hospital during the first year of treatment than did the medication only group in May's study; our worst group in terms of hospitalization spent no more time in the hospital than his best group, despite the fact that data from the two studies suggests that our patients were sicker (1975a, p. 144).

Responding to the criticism raised about the "uncontrolled variable of drug use," Karon and VandenBos state:

> It was noted that three patients in the non-medication group received medication

> upon the demand of the ward staff as an alternative to mechanical restraints. However, two of these cases do not appear in the final data (analysis including the two living patients which were excluded have been run; their inclusion does not materially alter the findings). Medication for these patients was rare and typically for very brief periods of time (in no case more than two weeks during twenty months of treatment) and in response to the distress of the ward staff (p. 13).

A major strength of the Michigan State Psychotherapy Project is that the investigators utilized sensitive measures of thought disorder to directly evaluate the process and outcome of psychoanalytic treatment of schizophrenia. The technical model for the modified parameters of psychoanalytic psychotherapy, psychodynamics in schizophrenia, emphasis upon the thought disorder and affect, and assessment procedures were all operationally and logically related to a unifying psychological understanding of schizophrenic disorders.

The emphasis upon the direct evaluation of the thought disorder in schizophrenia is based upon Bleuler's classical observation that the thought disorder is the primary psychological symptom of schizophrenia that accounts for the remaining fundamental and the accessory symptoms. The severity of the thought disorder, being the major symptom of the core pathology, should predict the severity of the psychosis.

Cancro (1969a, 1969b) studied 51 schizophrenics who were unmedicated throughout the period of testing and examination (to avoid the masking effect of drugs upon the severity of clinical signs). He found that the severity of the thought disorder was directly related to the severity of the schizophrenic illness, and that the formal signs of thought disorder were the best predictor of outcome. Furthermore, Cancro reported that:

> The significant intercorrelations between the measures of premorbid object relations and the presenting signs of the illness support the hypothesis that there is a consistency of impairment across ego functions. Object relations, thought, and affect tend to show impairment in combination and not separately" (1969a, p. 546).

Wynne & Singer (1963) and Lidz (1973) have also emphasized the significance of the thought disorder in the etiology and dynamics of schizophrenic disorders.

The emphasis upon the prognostic importance of changes in the thought disorder is also supported by empirical research on the intellectual functioning of schizophrenics, summarized by Rabin and Wender (in Bellak, 1969), who conclude:

> The bulk of the evidence, reviewed here, and of earlier studies points to a reduction in intellectual functioning following the onset of schizophrenia. The loss, however, is reversible. All in all, we have learned that schizophrenics manifest comparably lower intelligence long before the onset of the disorder, that further impairment of a reversible nature tends to occur upon hospitalization and that the change in the course

> of impairment is probably related to the overall clinical picture and, possible, to motivational factors in the testing situation (p. 208).

A significant feature of the Michigan State Psychotherapy Project, compared with other psychotherapy outcome research with schizophrenics, was the attempt to make the specified psychotherapies homogeneous experimental variables.

The finding in the Rogers et al. project of a significant relationship between decrease in schizophrenic pathology and accurate empathy; the finding in the Grinspoon et al. project of a significant relationship between clinical improvement and therapist focus on anger; the therapist benign-pathogenesis variable (VandenBos & Karon, 1971) in the Michigan State Psychotherapy Project; and the methodological criticism of "psychotherapeutic management" versus psychotherapy in the May et al. project, evaluated together, underscore the conclusion that psychotherapy is not a homogeneous experimental variable in psychotherapy outcome research.

As noted by King & Goldstein (1979):

> In most of these studies psychotherapy is regarded as a homogeneous process. The diversity in the psychotherapy process found both within and across studies may account for some of the variance in findings and renders even less equivocal findings difficult to interpret. Heterogeneity in the nature of psychotherapy derives from variability in (1) attributes of the therapists;

> (2) the formal model, theory, or techniques of therapy; and (3) implementation of the therapeutic model in therapy interactions (p. 118).

Section Conclusions

The results from the Michigan State Psychotherapy Project, along with supportive findings reported in the Boston and Wisconsin projects, have empirically demonstrated evidence for the feasibility and efficacy of the psychotherapeutic treatment of schizophrenia.

However, both critics and proponents of the psychotherapeutic treatment of schizophrenic disorders have concluded that, at present, the availability of psychotherapy for schizophrenics is so limited as to have only "heuristic value" for the treatment of only a very small number of fortunate patients, and for theoretical and clinical research purposes.

It remains, therefore, for the proponents of the psychotherapeutic treatment of schizophrenic disorders, to continue to develop brief and effective psychotherapeutic techniques (e.g., Davanloo, 1980; Karon & VandenBos, 1981), and to develop programmatic treatment approaches based upon these psychotherapeutic principles in order to maximize the availability and effectiveness of psychotherapeutic treatment for the

sizeable population of schizophrenic individuals[8] who might benefit from such treatment. This treatment goal is one of the most challenging tasks in mental health for the decades ahead, but one which is feasible largely because of the increasing interest in the psychosocial treatment of schizophrenia and because of the increase in professional practitioners since World War II.

Broadening and Divergent Psychosocial Treatment Approaches

In 1970 the National Institute of Mental Health Center for Studies of Schizophrenia and the Behavioral Intervention Section of the Clinical Research Branch sponsored a national conference on schizophrenia which targeted evaluation of psychosocial treatment as an area of highest research priority.

Gunderson (1977) and Mosher (Gunderson and Mosher, 1975) were two of the organizers of the conference. In an article reviewing the studies of drug

---

[8]Population studies report figures ranging from 1.0 per 1000 to 9.5 per 1000. (In Bellak, 1969, p. 104.) The Task Panel Reports submitted to The President's Commission on Mental Health (1978) estimate the incidence of schizophrenia at 0.5 to 3.0 percent; manic-depressive psychosis at 0.3 percent, and cite research findings which indicate that "two out of every five persons with psychoses and one out of every five with schizophrenia have never received treatment." (p. 16, v. II.) Moreover, approximately two million people in the United States would be diagnosed as schizophrenic; about 100,000 new cases every year (p. 19).

and psychosocial treatment of schizophrenia since 1970, Gunderson summarized the following conclusions drawn from the research:

1. Use of drugs is not ethically necessary for care of all schizophrenic patients. It seems especially likely that good premorbid patients may recover without these measures.

2. The effectiveness and necessity for drugs will depend on the nature of the psychosocial context in which they are given. This includes in particular the attitudes and morale of the treatment staff within institutions and of the family after discharge.

3. Relatively inexpensive psychosocial aftercare can assist patients in their social adjustment.

4. Milieu therapies can render relatively powerful effects on outcome (p. 13).

A number of controlled outcome studies have evaluated the effectiveness of Aftercare and Day Treatment/Patient-Hospitalization programs. Effectiveness of these psychosocial treatment approaches has been evaluated in terms of the following (Test & Stein, 1978) outcome variables: (1) time spent out of the hospital, (2) relapse-readmission rates, (3) psychiatric symptomatology, (4) psychosocial adjustment and functioning, and (5) client satisfaction.

Test and Stein (1978) cite the following six factors to account for the steady shift since 1955 from

maintaining patients in mental hospitals to maintaining "patients" in the community:

> (1) The availability of effective psychotropic drugs.
> (2) The post-World War II explosion in the number of mental health professionals in all disciplines.
> (3) Mental health principles intrinsic to the community psychiatry movement, specifically the doctrine of treatment near home.
> (4) Legal actions in the courts and through legislation to protect the civil rights of mental patients.
> (5) Economic motives for reducing or shifting the cost of care for these patients.
> (6) Research results that demonstrated quite conclusively that hospital treatment is relatively ineffective in helping patients establish a sustained community adjustment after discharge from the hospital (p. 350).

However, the problem that has resulted from this shift away from institutionalization has become one of how to effectively provide treatment for these individuals returning to the community, who are generally found to be leading impoverished and minimally coping existences; with high recidivism, unemployment (Anthony, Cohen & Vitalo, 1978); and poor attendance and length of stay in aftercare and day treatment/partial hospitalization programs.

Stein and Test make the critical observation that:

> The presence of large numbers of patients in the community necessitated the development of treatment modalities for them; community treatment programs thus began to be implemented on a widespread basis. Unfortunately,

> most such programs were neither well grounded in a theoretical framework nor based on evidence of demonstrated effectiveness (p. 350). [Underlining mine-M.A.T.]

Aftercare and Day Treatment/
Partial Hospitalization

Sheldon (1964) reported an early study undertaken to evaluate whether aftercare would significantly reduce hospital readmission. Eighty-three affective disordered and schizophrenic women with an age range of 20-59 years were randomly assigned to either aftercare or to their general practitioner (no aftercare) following discharge.

Aftercare patients were randomly assigned to either a day center or to an out-patient clinic. Patients were followed-up for a six-month evaluation period, based upon published statistics which showed that 50-70% of patients who relapsed do so within six months.

Aftercare patients were found to have a significantly lower hospital readmission rate than patients who did not receive aftercare. Patients who attended aftercare regularly showed a significantly lower readmission rate than patients with poor attendance. Aftercare was associated with a longer time spent under care during the six-month follow-up, but showed a shorter subsequent hospitalization time.

Unfortunately, Sheldon does not describe the aftercare treatment provided, although he does refer to "a primary therapeutic relationship" provided in treatment.

Wilder, Levin, and Zwerling (1966) reported the results of a two-year (after admission) follow-up evaluation of acute psychotic patients treated in a day hospital.

Acute patients admitted to the Bronx Municipal Hospital Center were randomly assigned to either a weekday day program, or to 24-hour inpatient service. There were no differences between the two patients' groups in age, sex, race, religion, marital status, or diagnosis. Approximately two-thirds of assigned patients were "accepted" by the day hospital; one-half of the "rejected" patients were acute or chronic organic patients.

Treatment staffs for both services were described as comparable in training and experience; both utilized medication and somatic treatment as necessary. The day hospital census was 25-30 patients; the inpatient service of four wards was 100 patients. Wilder et al. describes each treatment service:

> Day hospital therapy is planned at three levels: individual, family and group. Psychiatric residents see their patients individually a minimum of twice each week and see them together with the family at least

> once each week. A social worker, usually with the treating doctor, makes an evening home visit during the first two weeks of hospitalization.
>
> Perhaps the most distinctive aspect of the therapeutic regimen of the day hospital is that it reflects the utilization of group processes for treatment. Patients are assigned upon admission to one of three activity groups of 8-10 patients. Each group has a group doctor, a nurse acting as activity leader and an aide--all wearing ordinary street clothes. Small group cohesiveness is further fostered by one-hour morning group discussions and a moderately structured daily group activity program. A 'therapeutic community' orientation is fostered by weekly community meetings and a patient government.
>
> Unlike the day hospital, the inpatient service is subjected to a tremendous pressure of admissions and the attendant dispositional problems. Many patients are quickly discharged back into the community and at least one-third are transferred to the state hospitals. Patients who are kept for longer treatment are usually seen in individual therapy; there is little family or group treatment. Although there are weekly ward meetings, scheduled activities are less frequent and tend to be along the more traditional occupational therapy and recreational therapy models . . . (p. 1096).

Evaluation was made by means of an interview schedule conducted by a trained research assistant with the patient and family member interviewed together and separately. Interviews were obtained for 92% of the patients; full ratings for about three-fifths of the study population.

The results showed no significant differences in rehospitalization rates between the two treatment

services; however, the interval between discharge and first admission was significantly longer for the day hospital patients. The authors comment that the briefer period of inpatient treatment may account for this earlier readmission in the inpatient-treated groups, or the difference may reflect gains achieved by the day hospital patients who had continued to reside in the community during treatment.

Interview ratings showed no significant differences on psychiatric status between patient and family or between treatment groups. Inpatient service patients rated their family adjustment significantly higher than did the day hospital patients. Both patients and their families said that they preferred day hospital to 24-hour inpatient service. Both patient groups showed considerable social constriction and poor work performance, and frequent rehospitalizations.

Guy, Gross, Hogarty and Dennis (1969) reported a controlled evaluation of day hospital effectiveness comparing a day hospital (drugs plus milieu) to an outpatient clinic (drugs alone).

The sample of 137 patients were screened for age (18-65), patient motivation and family cooperation, antisocial behavior, overt suicidal behavior, severe mental retardation, severe brain damage, alcohol or

drug addiction, and medical conditions which would interfere with treatment.

Following assessment, patients were randomly assigned to either the day center or outpatient clinic treatment groups. The day center treatment utilized chemotherapy, group psychotherapy, rehabilitation, and recreational therapies. Unforseen exigencies created a third group of patients accepted for day hospital treatment, but unrandomized and therefore not part of the experimental group.

Assessment was carried out pre-treatment by an independent assessment team (psychiatrist, psychologist, social worker) to control for therapist bias. Evaluation was based upon the Brief Psychiatric Rating Scale (BPRS), Springfield Symptom Index, and three clinical global judgments of psychiatric status and improvement. Reassessment was made at termination; the point of termination was a clinical decision made by the therapist.

Results are based upon complete evaluations from 92 out of 137 patients (67%). The authors report that nearly 20% of the patients dropped out/refused treatment, or were disruptive and unacceptable for day center; these patients were found to be significantly more severely disturbed on 23 out of 29 psychiatric criterion measures.

The authors describe the patient sample as intermediate between outpatients and inpatients in severity of illness:

> Characteristically, patients admitted to the BPDC were white, female, married, and living in a conjugal home. Their psychiatric history was lengthy, including prior experience with psychotherapy and short hospitalization. Disruption of the family during the patient's developmental years was common as was their prior use of community psychiatric facilities (p. 330).

The results of the data analyses showed significant overall group differences on two global measures: the day center experimental group showed significantly greater symptom reduction than the other groups on the Global Severity of Illness measure, and significantly greater improvement on the Global Judgment of Degree of Improvement measure than the outpatient drug-alone group.

Analysis of the data by diagnostic category showed significantly greater improvement for schizophrenic patients as compared to non-schizophrenic patients; the day center experimental group schizophrenics showed significantly greater improvement on Suspiciousness, Unusual Thought Content, and Hostility. Schizophrenics in both the day center experimental group and the outpatient group showed significant improvement on Emotional Withdrawal.

Outpatient drug treatment showed a significantly shorter length of treatment; however, when therapeutic

outcome versus length of treatment were compared, patients treated more than three months at the day center showed significantly greater improvement than day center patients treated less than three months.

Rehospitalization data showed no differences between the three groups in the number of patients rehospitalized within one year of termination of treatment; however, both day center groups showed significantly briefer rehospitalization than the outpatient treated group.

The authors found that certain sociodemographic variables predicted significantly greater improvement on specific schizophrenic symptoms in both treatment groups:

> Married patients who live in conjugal homes exhibited overall greater symptom reduction than those from non-conjugal homes on the schizophrenic symptoms of Hallucinations, Conceptual Disorganization, Blunted Affect, and Unusual Thought Content. Similarly, those who were more than 20 years of age at the time of their first episode and had less than one month of previous hospitalization appear to gain greater benefit from either treatment.
>
> On the other hand, patients who were under 20 at the time of their first episode and have experienced longer periods of hospitalization show significant worsening of symptoms such as Projection and Rage under day hospital treatment. The stimulation and intensity of interaction in milieu therapy may have a negative effect on these symptoms, an effect that is not apparent when drugs are used alone.

> Of interest is the worsening of sexual problems among day hospital patients without previous psychotic episodes. It would seem that such patients become aware of their difficulties in this area only after an experience in the day hospital where group discussions bring this topic into focus.
>
> In the present study, marked schizo-affective features were observed among the schizophrenic population. The symptom constellation which was significantly reduced among day hospital schizophrenics reflected improvement in communication and accessibility. These patients were less hostile, less withdrawn, less suspicious, and more cooperative. As this constellation of improvement was not observed among the outpatient clinic schizophrenics, it seems reasonable to attribute the difference to the milieu component of the day hospital regime (p. 330).

Herz, Endicott, Spitzer, and Mesnikoff (1971) reported a controlled study of day versus inpatient hospitalization.

Patients were selected for the study by the senior author who screened all newly admitted patients (424) to the inpatient service; alone, and with their families. Screening criteria were that the patient not be "too ill" or "too healthy" for day care; family cooperativeness; and no physical illness. Ninety patients, representing 22% of all new admissions, met the criteria and were then randomly assigned to either day or inpatient hospitalization groups; by coincidence, each treatment group contained 45 patients. The average length of inpatient stay prior to assignment was approximately three days.

The authors describe the day center and in-patient treatment:

> Both day patients and inpatients were treated on the same 55-bed inpatient ward, which has an open-door policy except for a closed ten-bed intensive care unit. Patients in both groups were treated by the same staff and participated together in the same activities during the day. The ward program is group oriented, with a strong emphasis on activities of patients.
>
> A full range of psychiatric treatments was utilized, including individual psychotherapy; group, family, milieu, and somatic therapy; and vocational rehabilitation. If it was deemed appropriate, patients were followed, after discharge from either day or inpatient hospitalization, as outpatients (p. 1372-1373).

Evaluation was made initially, at two weeks, four weeks, and five months after the last patient entered the study; the follow-up period varied from 21-143 weeks, with an average of slightly less than two years for patients in both groups.

Psychopathology and role functioning were evaluated with the Psychiatric Status Schedule (PSS) and the Psychiatric Evaluation Form (PEF). The PSS utilizes a structured interview and an inventory of 321 items describing psychopathology and impaired role functioning which yield symptom scales and role-functioning scales. The PSS was completed on admission and at four weeks by research interviewers not connected with treatment. The PEF consists of rating scales of psychopathology, role functioning, and overall severity of

illness. The PEF was completed by the treating psychiatric resident or psychology intern on admission and at two and four weeks. Research interviewers used the PEF in the long-term follow-up evaluation.

Herz et al. state that, "In terms of broad dimensions of psychopathology" the study group of patients was comparable to the entire group of patients including those excluded for being "too ill" and "too healthy;" however, they also report that, "The differences between the study group and the two groups excluded from the study were often statistically significant ($p < .05$), but the magnitude of the differences was never large."

Evaluation at two and four weeks was made on 75-82% of the patients because of various difficulties. Significant differences appeared at four-week follow-up: the day patients showed significant improvement over the inpatients on the PEF scales of Agitation-Excitement, Suicide-Self-Mutilation, Grandiosity, and Suspicion-Persecution. On the PSS, only one scale showed a difference between the two groups: the day patients showed significantly more improvement than the inpatients on the Inappropriate Affect, Appearance, or Behavior scale.

At the long-term evaluation, the only differences found between the groups were that the day patients

showed significant improvement on Daily Routine-Leisure Time Impairment and House-Keeper-Role Impairment. The authors show by percentages that at every point in time compared, the inpatients showed a higher readmission rate than the day patients; moreover, at every cross section evaluation more of the day patients than inpatients were in the community--however, these differences in percentage rates are not reported with significance levels.

Caffey, Galbrecht, and Klett (1971) in a study of the effectiveness of brief hospitalization and aftercare in the treatment of schizophrenia compared 201 schizophrenic males randomly assigned to one of three treatment groups: (A) standard hospital care with discharge at physician's discretion and normal VA care (e.g., referral to social and psychiatric resources), (B) accelerated hospital care limited to 21 days and psychiatric and social work treatment by the same staff for one year on an outpatient basis, and (C) standard hospital treatment followed by the aftercare program given Group B.

Consecutive admissions to 14 VA hospitals were screened for age (60 years or under), alcoholism, medical conditions which could delay discharge, recent hospitalization, availability of a "home" following discharge, means of self-support, and potential for

destructiveness. Patients ranged in age from 19-55, with a mean profile of 37 years old, married, and living in a residential section of a middle-class neighborhood with a population area of 25,000-100,000.

Patients in all three groups were primarily treated with chlorpromazine (Thorazine), trifluoperazine (Stelazine), or thioridazine (Mellaril), alone or in combination. Groups were fairly comparable in medication dosage; dosage was somewhat reduced during the outpatient phase.

Inpatient psychotherapy for all patients consisted primarily of individual therapy, usually of a supportive nature, or individual therapy with conjunctive group therapy. The frequency of individual therapy varied from daily to once or twice monthly.

Patients in Group A (standard hospital care) and Group C (standard hospital treatment followed by the aftercare program given Group B) who were readmitted were found to be patients who had been hospitalized for a significantly shorter time than nonreadmitted patients; and patients in Groups A and C combined who had been hospitalized for 30 days or less had significantly more readmissions than patients hospitalized for a longer time.

Comparing Group B (shortened and more intensive discharge--directed treatment, with family involvement)

to usual hospital care: the IMPS ratings showed significant improvement over the initial three week period for both brief and longer stay groups on the IMPS. Group B showed significantly less pathological disturbance on two variables (Retardation and Motor Disturbance). Excluding Group B patients who required more than 21 days of hospitalization from the analysis, Caffey et al. reported that the remaining "successful" Group B patients showed significantly less Paranoid Projection on the IMPS than patients in Groups A and C combined.

Group B patients were found to manifest more pathological disturbance on the IMPS than the longer stay groups at the time of discharge (Paranoid Projection, Perceptual Distortion, Grandiose Expansiveness, and Conceptual Disorganization). Six month comparisons of the three treatment groups showed no significant differences. At 12 months, Group B showed significantly less Grandiose Expansiveness.

On the KAS community adjustment evaluations there were only two significant findings: Group C was engaged in significantly more free-time activities at six months; and was significantly more negativistic than either Group A or Group B at 12 months. Group therapy varied from once to three times weekly. There were no differences between the experimental groups on frequency of therapy contacts.

Outpatient follow-up care with psychiatric and social work contacts were scheduled for one year for patients in Groups B and C. Approximately one-third of the patients in Groups B and C were seen an average of once or twice weekly for the first three or four months following discharge, and then monthly thereafter. The average number of home visits to these patients was around 18 (with a range of 1-45).

Evaluation of the effectiveness of the three treatment programs was based upon the Inpatient Multi-dimensional Psychiatric Scale (IMPS) and the Katz Adjustment Scales (KAS). The IMPS is scored for ten syndromes defining psychosis. Psychologist-psychiatrist rating teams interviewed and rated all patients on the IMPS within three days after admission and at three weeks, six months, and 12 months after admission or at the time of discharge. The KAS evaluates community adjustment in terms of vocational and recreational activities and social interaction as reported by the patient and separately by a family member. The KAS was completed at six and 12 months after discharge.

The results generally supported the effectiveness of aftercare services. No differences were found between the groups on hospital readmission within one year after admission; and there was no difference in

the length of time spend out of the hospital prior to first readmission.

Hogarty, Goldberg, and the Collaborative Study Group (1973); Hogarty, Goldberg, Schooler, Ulrich; the Collaborative Study Group (1974); and Goldberg, Schooler, Hogarty, and Roper (1977) have published the results of research on "Drug and Sociotherapy in the Aftercare of Schizophrenic Patients": one and two year relapse rates and prediction of relapse.

The collaborative Outpatient Study in Schizophrenia was designed as ". . . a multiclinic attempt to provide evicence on how two modes of treatment (drug and sociotherapy) interact in the prevention of relapse and enhancement of community adjustment over a considerable period of time. With three clinic samples adhering to a common protocol of study, replication of results is made possible."

Hospitalized schizophrenic patients were selected for the study utilizing the following criteria:

> (1) age 18-55; (2) a primary hospital diagnosis of schizophrenia confirmed by the research psychiatrist; (3) currently hospitalized for less than two years; (4) no evidence of organic brain syndrome; (5) intelligence quotient above 70; (6) no history of unmanageable drinking or drug abuse; (7) drug-free intervals; (8) have received phenothiazine as an inpatient and have no medical contraindications for chlorpromazine therapy; (9) live within commuting distance of the clinic; (10) provide a 'significant other' for rating purposes and

> supervision of medication; (11) appear at the clinic within 21 days of discharge, and (12) receive no other ataractic other than study medication during the course of the investigation.
>
> Furthermore, to test the effects of MRT [Major Role Therapy] only wage earners and homemakers are included, with students excluded by design.

Patients meeting the selection criteria were consecutively discharged over an 18-month period to one of the three outpatient clinics:

> They were randomly assigned at intake to major role therapy (MRT): a sociotherapy consisting of intensive counseling. All patients were maintained with drug therapy during the first two months with medication gradually shifted to chlopromazine (Thorazine) exclusively. At two months following intake, patients were again randomly assigned on a doubleblind basis to identical looking 100-mg or 50-mg tablets of chlorpromazine or placebo.
>
> The study design initially specified that 15 male and 15 female patients at each clinic be randomly assigned to each of four treatments at the two month period: chlorpromazine alone, placebo alone, placebo and MRT, chlorpromazine and MRT. The desired 360 patients were then to be treated for a minimum of two years and for as long as three years (1973, p. 55).

The study ultimately included 374 patients, with the specified number of patients exceeded at two of the three clinics, and fewer than the desired 15 male patients per treatment group retained because of exclusions for chronic alcoholism, transiency, or both. MRT

and non-MRT patients were seen an average of twice monthly.

Evaluation of personal adjustment, social adjustment, and role performance was assessed at 6, 12, 18, and 24 months following hospital discharge, using ratings completed by the psychiatrist (Brief Psychiatric Rating Scale-BPRS, Inpatient Multidimensional Psychiatric Scale, and Springfield Symptom Index B-SSI), the social worker (the Major Role Adjustment Inventory and Casework Evaluation Schedule specifically designed for this study), the patient (the symptom checklist), and the relative (Katz Adjustment Scales, Family Distress Scale).

The results at 24 months showed that chlorpromazine is significantly more effective than placebo in forestalling relapse: on the average, chlorpromazine-treated patients survived 17 months in the community while placebo-treated patients survived 10 months, 80% of placebo-treated patients had relapsed compared to 48% of drug-treated patients. The authors defined relapse as ". . . clinical deterioration of such magnitude that rehospitalization is imminent; about 75% of relapse patients were actually rehospitalized."

The size of the drug/placebo difference is significantly greater for women than for men; by 24 months 63% of male patients taking chlorpromazine have relapsed compared to 37% of female patients on the drug.

Major Role Therapy itself showed no significant effect on forestalling relapse over 24 months; however, MRT showed a significant effect after six months among patients who had survived in the community six months after hospital discharge. It was concluded that the drug/MRT effects were additive rather than interactive.

Significant treatment effects began to show at 6 and 12 months, but were more pronounced at 18 months and sustained and further developed at 24 months. Analysis of the various ratings of personal and social adjustment showed no extensive main effect of chlorpromazine or consistent main effect of MRT.

The consistent interaction found between drug treatment and MRT was that:

> (1) among drug treated patients, those who do receive MRT adjust better; (2) among placebo-treated patients, those who do not receive MRT adjust better; (3) the interaction between drug treatment and MRT applies more to men than women and indicates that men receiving placebo and no MRT are the better adjusted survivors and; (4) drug treatment is more effective than the placebo for women, but placebo treatment is more effective than the drug for men (p. 612, 1974).

The investigators concluded that:

> The interactive effect of drug and sociotherapy takes at least 18 months to emerge, and two years before the influence of sociotherapy and drug treatment is uniformly demonstrated from the point of view of relatives, patients and therapists. If treatment objectives extend beyond the prevention of relapse, then our results suggest that schizophrenic patients must be continued in

> treatment well beyond a single year following hospital discharge. Likewise, controlled evaluations of either drug or psychotherapeutic aftercare treatments of schizophrenic patients would be deficient in design if limited to less than an 18-month period of treatment and observation. It is entirely possible, of course, that other drugs or routes of administration, or other forms of non-somatic treatment offered by greater or lesser trained professionals could produce similar or more dramatic effects earlier than 18 to 24 months (1974, p. 615).

Washburn, Vannicelli, Longabaugh, and Scheff (1976) compared psychiatric day treatment and inpatient hospitalization.

Ninety-three female patients between the ages of 16-72 (Mean 32.9), predominantly middle-class, newly admitted to McLean Hospital with a primary diagnosis of schizophrenia (50%), affective psychosis (12%), personality disorder (20%), or borderline personality (18%), were obtained from a larger hospital sample of 165 patients who met the criteria for randomization. The 93 patients who agreed to participate in the study were not found to be significantly different from the larger population in terms of age, chronicity, marital status, proximity of family residence from the hospital, education, socioeconomic status, and religious affiliation.

Following two to six weeks of inpatient evaluation, 59 of the patients were randomly assigned to

inpatient service (30 patients) or to the day center (29 patients). The remaining 34 patients were included in a day center control group representing a group of "usual day hospital patients." There were no differences between the randomized inpatient and day center groups on demographic or baseline pathology criteria.

The specific study criteria were that patients not be so suicidal, homicidal, or incapable of forming a treatment alliance as to preclude treatment in the day setting; and ability to finance treatment over the two years of the study.

Treatment effectiveness was evaluated on dimensions of psychopathology and social adjustment and treatment costs. Baseline measures of mental status and family and community functioning were obtained prior to randomization.

Psychopathology was evaluated using the Psychiatric Status Schedule (PSS), the Psychiatric Evaluation Form (PEF), and the Dynamic Assessment Scale (DAS).

The PSS is a mental status interview which assesses symptomatology, role functioning, efficiency and conduct of leisure time activities and daily routine, quality of interpersonal relationships, use of drugs and alcohol, and illegal or other antisocial activity. The PSS provides five summary scales: Subjective Distress, Behavioral Disturbance, Impulse

Control Disturbance, Reality Testing Disturbance, Summary Role, and a Total score. Both a subject form and an informant form of the PSS were administered by trained interviewers at six month intervals.

The PEF provides seven summary scales: Disorganization, Subjective Distress, Anti-social Behavior, Withdrawal, Grandiosity, Role Performance, and Overall Summary. The PEF was administered every two months by trained interviewers.

The DAS, adapted from the Camarillo Dynamic Assessment Scales, was designed to measure intrapsychic change in the patient as perceived by the therapist (e.g., ego capacity, tolerance for emotional contacts, attitude toward personal relationships, object relations-object choice, sense of personal identity role in life, insight, and motivation). The DAS was completed by the patient's therapist and/or case manager at six month intervals.

Social adjustment was evaluated using the Family Adjustment Questionnaire, the Community Adjustment Questionnaire, the Burden Evaluation Line, and the number of roles attempted by the patient. The Family Adjustment Questionnaire rates the patient's involvement in family functions, ability to relate with family members, and ability to conform to family expectations. Parallel forms were administered to the patient and to

the informant by the clinical interviewer at six month intervals. The Community Adjustment Questionnaire rates the extent to which the patient participated in community activities and the quality of participation. Parallel forms were administered to the patient and informant every six months. The Burden Evaluation Line is a rating completed by the interviewer at six month intervals of the extent to which the patient's illness has imposed a burden on the family.

The results of the data analysis showed that across treatment groups, Global Mental Status, Impulse Control, Family Adjustment Questionnaire, and Subjective Distress all showed significant improvement at all four comparison periods; community adjustment, role functioning, global mental status (PEF), number of roles attempted, and burden showed significant differences baseline to overall post-test.

Comparing the day center experimental and inpatient groups on the measures of psychopathology, subjective distress was the only measure which showed a significant difference between the two groups.

On the measures of social adjustment, the day center group showed significantly more improvement on community adjustment than did the inpatient group; however, by 18 months the inpatient group had caught up with the day center patients.

As expected, total direct charges were significantly lower for the day group reflecting the lower cost of operating and staffing an 8-hour versus a 24-hour facility.

Day center patient families reported significantly less burden than did inpatient families at one year after admission to the study; and at termination of the study, day center families were significantly more satisfied with the treatment than were the inpatient families.

Group Versus Individual Approaches

In a review of controlled research on drug and psychosocial treatment of schizophrenia, Gunderson (1977) comments on the findings from studies of group therapy:

> These studies demonstrate uniform utility for nonintensive group therapy in the aftercare of both acute and chronic schizophrenics. This utility seems largely to be in the form of improving social, interpersonal behavior. Had outcome measures been limited to assessments of symptoms, this area of effectiveness for group therapy would not have been apparent in several studies (p. 13).

Levene, Patterson, Murphey, Overbeck, and Veach (1970) evaluated 31 diagnosed schizophrenic patients on the following criteria: living with a family member, on phenothiazines, no evidence of childhood autism or

schizophrenia, no evidence of organic brain syndrome, epilepsy, gross mental deficiency (IQ < 70), or alcohol or any addiction; and the presence on admission of two or more of the following symptoms: thinking or speech disturbance, catatonic motor behavior, paranoid ideation, hallucinations, delusional thinking other than paranoid, blunted or inappropriate affect, and disturbance of behavior and interpersonal relationships.

Each of two psychiatric residents saw patients in either monthly individual appointments (15-30 minutes duration) or monthly in an hour long group composed of five to seven patients. The investigators state that "the sessions were devoted to a review of current status and adjustment, and to renewal of medications."

Community adjustment and social behavior of patients not rehospitalized was assessed using the Katz-Lyerly social adjustment inventories, administered to the patients and to their relatives at the beginning of the study and at the end of one year.

Patients were also independently rated on the Brief Psychiatric Rating Scale (BPRS) by two psychiatrists in a joint inverview with the patient at the beginning of the study and at one year. The relatives, patients, and residents were also asked to rate the consistency of medication taking during the year.

The results showed that 13 out of the 31 patients (41.9%) were rehospitalized within the year; three patients dropped out; and 15 (48.3%) remained in the treatment program for the entire year. Nine of the 13 patients rehospitalized attended four or less follow-up appointments.

No significant difference was found between individual and group-treated patients in rehospitalization rates. No differences were found between the individual and group treated patients on measures of adjustment and pathology; and initial measures did not predict rehospitalization. There were no differences between patients of the two residents.

Levene et al. concluded that neither method of aftercare treatment showed impressive results; and both were inadequate for about half the sample in community maintenance or further improvement.

O'Brien, Hamm, Ray, Pierce, Luborsky and Mintz (1972) compared the relative effectiveness of group and individual therapy for schizophrenic aftercare patients.

One hundred newly discharged and clearly schizophrenic patients from a state hospital referred to a mental health clinic were initially evaluated by two members of the research team who made independent observations and assigned a prognosis rating to each patient. The mean number of hospitalizations for the

sample was two; the mean length of the last hospitalization was 15.4 months.

The initial evaluation was based upon the Overall-Gorham Brief Psychiatric Rating Scale (BPRS), a social effectiveness scale designed for this population, the Zung self-rating depression scale filled out by the patient, and a supplemental mental status scale used by the outpatient clinic.

Prognosis was assigned on the basis of the prognostic factors described by Astrup and Vaillant: (1) absence of family history of hospitalization for schizophrenic-like illness, (2) non-schizoid developmental history, (3) confusion at the time of hospital admission, (4) absence of marked flattening of affect, (5) presence of depressive symptoms, (6) absence of low intelligence, (7) clear precipitating factors leading to psychosis, (8) acute onset of psychosis, and (9) presence of a stable marriage.

Following the initial evaluation, patients were randomly assigned to group or to individual psychotherapy; 50 patients being assigned to each treatment. Sixteen therapists (psychiatrists, supervised medical students, and social workers) provided group and individual psychotherapy which was described as supportive therapy.

Follow-up ratings with the scales used at initial evaluation were made at 12 and 24 months after beginning outpatient treatment. The following criteria were used for the overall outcome evaluation at 24 months:

1. No rehospitalization, and improvement of at least 20% in both the Brief Psychiatric Rating Scale (BPRS) and the social effectiveness scale.

2. No rehospitalization and improvement (20%) in either social effectiveness or BPRS.

3. No rehospitalization and either worsening or no significant change (< 20%) on both scales.

4. Rehospitalization or a dropout with worsening or no change on the rating scales.

An independent observer reviewed attendance and drug continuation at each follow-up. The decision to rehospitalize was generally made by a hospital psychiatrist who did not know about the study.

The results showed that rehospitalization rates for individual and group therapy did not differ significantly at 12 or at 24 months. The overall outcome rating at 24 months showed that group therapy patients had improved significantly more on both the BPRS and Social Effectiveness Scale; while the individual therapy patients showed significant improvement only on the Social Effectiveness scale. O'Brien et al. concluded:

"Thus the major effect of group over individual psychotherapy as measured here was in clinically observed improvement."

Herz, Spitzer, Gibbon, Greenspan, and Reibel (1974) studied the relative efficacy of minimal individual contact versus group therapy, with equal therapist time allocated to each treatment.

One hundred forty-four aftercare patients were randomly assigned to either group (76) or individual (68) therapy; from this initial sample, 54 patients in each treatment were seen at least once in an individual screening appointment. Subsequently, 13 group and 9 individual patients dropped out. From the remaining treatment groups of 41 group and 45 individual patients; 7 group and 4 individual patients dropped out by the twelfth month end of treatment.

Therapists were first-year psychiatric residents randomly assigned to individual or group treatment. Residents were supervised weekly by a senior attending psychiatrist. The therapy was described as "supportive, reality-oriented psychotherapy with little if any emphasis on insight. In addition, there was an attempt to promote socialization and deal with interpersonal issues in the group."

Evaluations were made by the therapist after the initial interview and at 4, 7, and 11 months using

the Problem Appraisal Scales (PAS) and the Menninger Health-Sickness Rating Scale (HSR). The PAS rates 38 areas of disturbance, including signs and symptoms of manifest psychopathology, providing a scoring system of six broad dimensions of psychotherapy. The HSR provides a single rating of overall mental health.

Patients completed the Symptom Distress Check List (SCCL) at the same intervals as therapist evaluations were made. The SDCL is a self-rating of the intensity of a wide variety of subjective symptoms which are scored into five scales.

The results of treatment showed an equivalent readmission rate of 15% for both treatment groups, with a substantially higher rate for those who refused individual treatment initially.

In general, the therapist and patient ratings showed only small amounts of improvements, with no significant improvement in the level of psychopathology and role functioning. At four months the PAS showed more improvement for the individual patients than the group patients on four out of six scales; however, at the seven month evaluation, this difference decreased to only two scales of the PAS showing a significant difference in favor of individual treatment. By the final evaluation at 11 months, there were no significant

differences between the treatment groups on therapist or patient ratings.

The authors concluded that "although there were no differences in outcome measures between individual and group therapy, we nevertheless recommend that after-care programs shift to making much greater use of group therapy of a supportive, reality-oriented type accompanied by appropriate use of pharmacotherapy."

However, more objective conclusions can be made from the data reported. Herz et al. apparently neglect the significance of the finding that 68% of group patients remained in treatment for the 12 months compared to 76% of individual patients; furthermore, 32% of group patients dropped out of treatment by 12 months compared to 24% of individual patients, and if initial dropouts were included, the results would show that 49% of patients rejected group therapy treatment compared to 26% who dropped out of individual treatment.

The results for individual therapy appear to be even stronger since "two-thirds of the group patients were seen either weekly or biweekly" as compared to less frequency of contact for the individual patients ("Seventy-five percent of individual patients were seen either biweekly or monthly for sessions ranging from 15 to 30 minutes").

Finally, since most of the study patients were on psychotropic medication during the study, and no information was given as to whether a therapeutic goal was to decrease medication, it is interesting to speculate whether given the initial reduction on the PAS in Depression-anxiety, Disorganization, Social Impairment, and Grandiosity-externalization for the individual patients at four months, did pharmacotherapy not eventually effect a ceiling or retarding effect upon further improvement with psychotherapy (c.f., Karon & VandenBos, 1972; Paul, 1972; Rappaport, 1977; Goldstein, 1969, 1970; Goldberg et al., 1977).

Claghorn, Johnstone, Cook, and Itschner (1974) evaluated the effectiveness of group therapy and maintenance treatment of schizophrenics, reasoning that "psychotropic compounds alone cannot assist the outpatient in meeting the new and rigorous demands of daily living. Under such conditions, the schizophrenic might benefit from some form of psychotherapy, offered concurrently with pharmacotherapy."

Forty-nine male and female outpatients diagnosed as schizophrenic and referred for outpatient treatment following their first admission to a state hospital, and without any serious intercurrent medical problems, were randomly assigned in a double-blind manner to one of four treatment regimens:

> Each group received either thiothixene or chlorpromazine in conjunction with either weekly group therapy or no psychotherapy; duration of treatment was six months. Medication was prepared in identical-appearing capsules, containing either 50 mg of chlorpromazine or 5 mg of thiothixene (dose levels were judged comparable), and dosages were adjusted individually to a schedule of one or two capsules taken three times daily.
>
> A single psychotherapy group was formed for patients receiving the two drugs. Group procedures tended to be of a structured nature, with emphasis on the problems and tasks of daily living.
>
> The two medication groups (thiothixene and chlorpromazine) contained 13 and 9 patients, respectively; the thiothixene-group therapy sample contained 14 persons, while the chlorpromazine-group therapy had 13 (p. 362).

Patient evaluations were made pre-treatment and at monthly intervals thereafter. Evaluations were based on a global assessment of the degree of improvement rated by the psychiatrist, the Brief Psychiatric Rating Scale (BPRS), and the Interpersonal Test Battery--consisting of the Minnesota Multiphasic Personality Inventory (MMPI), the Interpersonal Check List (ICL), and the Thematic Apperception Test (TAT).

The investigators give the following explanation of the conceptual framework of the Interpersonal system and the Interpersonal Test Battery:

> Responses on each test are scored in relation to their position on a two-dimensional grid, with dominance-submission and affiliation-opposition as the dimensions. Each test is conceptualized as reflecting a

> 'level' of behavior: the MMPI represents the level of public behavior, the self-reported ICL, the level of conscious behavior, and the TAT the level of preconscious behavior; in addition, an 'intentionality' or motivational measure is derived from the Pd and Mf scales of the MMPI (p. 362).

The results showed significant improvement on the BPRS for all four groups; with no differences between the four study groups. Because of problems with patient cooperation, the sample of post-treatment Interpersonal Test Battery was reduced to 21 patients (43% of the total patient sample); the authors report that this subsample was not found to differ significantly from the remainder of the patient sample on pre-or post-treatment BPRS.

The investigators conclude that the results show "subtle but meaningful changes in emotional functioning due to concurrent group therapy." However, the results appear equivocal: for example, the drug-therapy group showed a significant shift on the ICL toward self-perceptions of themselves as less dominant and less affiliative following treatment. This group also showed a significant shift in TAT perceptions of others as more dominant and more affiliative following treatment. Claghorn et al. interpret these findings as indicating that these patients' "perception of the rest of the world as more healthy indicates a greater appreciation of their disability."

The findings in this study are limited by the six-month span of treatment, possible bias because the raters were the therapists, and 57% reduction in the post-treatment data sample.

Section Conclusions

The preceding review of controlled studies of aftercare and day treatment/partial hospitalization, and group versus individual therapy for psychotic patients generally, and schizophrenic patients in particular, supports a number of conclusions drawn from the research methodologies and outcome findings of the studies reviewed:

(1) Excluding a rather large and undefined group of patients who are judged "too ill" to be treated in aftercare and day treatment/partial hospitalization programs (Test & Stein, 1978), community based treatment approaches showed some advantages over hospital treatment in terms of fewer relapses, shorter hospital stay if rehospitalized, more improvement in psychosocial functioning and community adjustment, and slightly more improvement in symptomatology.

(2) The aftercare and day treatment/partial hospitalization studies reviewed made routine use of drugs in treatment; reduction in medication dosage in relation to evidence of symptomatic improvement did

not appear to be valued as a treatment process and outcome goal.

(3) Generally, supportive, therapeutic management, socialization-fostering therapies were preferred over psychoanalytic-psychodynamic intensive psychotherapies focused on dysfunctional intrapsychic anxiety conflicts, regression, transference distortions, and symbolic acting-out; utilizing "depth" interpretations of content, structure, defenses, and transference, to reduce anxiety and confusion and to develop trust, relatedness, insight, awareness, and reality testing functions within the corrective, or reconstructive emotional, experience of the therapeutic "transference" relationship.

(4) Almost all of the studies reviewed rely upon descriptive rating scales of symptomatology and social functioning by independent interviewers, staff, patients, and family members or significant other; psychometric and projective psychological testing are generally not utilized. In particular, direct measures of thought disorder and intellectual functioning are usually not a part of the evaluation methodology despite the centrality of cognitive dysfunction in the diagnosis and nosology of psychotic disorders.

(5) Generally, the treatment phase of these studies ranges from 12 months to 24 months; a number

of studies reported no significant findings at six months assessments.

(6) Most of the studies reported some difficulties encountered with patient dropout from treatment, attendance and length of stay in treatment, as well as patient cooperation with completing evaluations, and resultant incomplete study data. These difficulties underscore the realities in attempting to provide treatment, much less testing, with this generally disturbed, unmotivated, uncooperative, uncommunicative, terrified, and resistent patient population, and supports the conclusion that patient motivation is a primary process and outcome variable in psychosocial treatment with psychotic individuals.

THE DEVELOPMENT AND EVALUATION OF A PSYCHOANALYTICALLY ORIENTED DAY TREATMENT PROGRAM

Funding for the starting of three new day treatment programs for a tri-county community mental health system provided an opportunity for the development and evaluation of an experimental pilot study of psychoanalytically oriented day treatment at one of these centers, based upon a type of psychoanalytic psychotherapy described and evaluated in the Michigan State Psychotherapy Project (NIMH grant MH 08790) reported by Karon and VandenBos (1981).

Each of the three new day treatment programs was funded by the Michigan Department of Mental Health to provide day treatment programming for ten full-time or 20 half-time clients per week. The programs were initially funded for two day treatment therapists and one aide/van driver. Each of the three new day treatment programs became a unit of an existing small rural community mental health center.

Day Treatment Program; Milieu; Day Center Facilities

The experimental psychoanalytically oriented day treatment program was specifically designed to

provide severely dysfunctional chronic aftercare clients with meaningful and psychotherapeutically corrective or reconstructive, developmental experiences in three broad areas of functioning: (1) cognitive, (2) emotional, and (3) interpersonal, that are pathognomonic of psychotic ego regression and chronic high anxiety-arousal in functional psychoses.

The experimental day treatment program integrated psychoanalytically oriented group psychotherapy, adjunctive individual psychoanalytic psychotherapy when indicated, movement therapy, dynamically oriented art therapy (Billig, 1970; Naumberg, 1950, 1953, 1966), activities of daily living (ADL) skill building, and periodic discussion groups on such relevant issues as communication skills, assertiveness training, human sexuality, and reality testing.

The day treatment program was developed for two groups of ten half-time clients meeting on alternating weekdays. The day program typically began with clients arriving at the center on their own or transported by the agency van. The morning began with an unstructured arrival time during which clients could have coffee, read the newspaper, chat, or help staff set up for the day. The staff could form an initial impression of the mood of the clients during this time. Within a half hour of the clients arriving at the center, clients and

staff met for a morning meeting to jointly plan the day's schedule and shared responsibilities, and handle business and individual concerns--which might be referred for discussion in group therapy.

Following the morning meeting, the group spent an hour in movement-music therapy responsive to the pervasive mood of the clients (e.g., passive/active, loud/soft, individual or interactive). This was followed by a break period, and group psychotherapy that continued to lunch, which might be prepared jointly by clients and staff.

Following lunch were large time periods in the afternoon for art therapy or projects, informal discussions, and scheduled individual psychotherapy appointments. The day's schedule ended with an afternoon meeting intended to provide cohesiveness and closure for the group. Each of the two client groups had educational or recreational field trips scheduled on alternating Fridays.

The important milieu characteristics associated with psychosocial treatment outcome have been discussed by Mosher and Gunderson (Bellak, 1979): they note that Bullard [1940] made the early suggestion of "an environment in which the patient may be sick and unpunished for it."

The facilities of the day center consisted of a large classroom-like day room with conference tables and chairs, bulletin boards on the walls, clients' plants at the windows, an adjacent kitchen, and a smaller group room furnished like a family living room.

Psychoanalytic Treatment of Psychotic Disorders: Theory and Practice

The psychoanalytically oriented treatment approach developed for the experimental day treatment program was generally based upon clinical research on the etiology, psychodynamics, and treatment of psychotic disorders (e.g., Arieti, 1974, 1977; Bateson et al., 1956; Bellak, 1969, 1979; Burton, 1961; Doucet and Laurin, 1969; Erikson, 1963, 1968; Fromm-Reichmann, 1950, 1959; Fairbairn, 1952; Freud, 1900; Gunderson and Mosher, 1975; Guntrip, 1968; Hill, 1974; Kernberg, 1975, 1976; Lidz, 1973; Rosen, 1953; Rosenfeld, 1965; Searles, 1965; Sullivan, 1953, 1962; and Wynne and Singer, 1963), and specifically upon an active intensive psychoanalytic psychotherapy of schizophrenia (Karon, 1958, 1960, 1963, 1964, 1976; Karon and Rosberg, 1958a, 1958b; Karon and VandenBos, 1977, 1981; and Rosberg and Karon, 1958, 1959) emphasizing object relations structural theory, oral dynamics and ego regression in psychosis, counter-transference analysis in understanding the delusional transference fantasy, and transference,

defense, and so-called "direct" interpretations of latent symbolic-symptom content in thought, affect, gesture, and behavior.

As noted by Karon (1963, 1976):

> In fact, schizophrenics are a widely varied group of human beings. What they have in common is that they are using rather drastic techniques of adjustment. Insofar as they have anything in common, they can be characterized by Bleuler's primary symptoms: autism, a withdrawal from people; the thought disorder, an inability to think logically when they want to; and, an apparent absence of affect or inappropriate affect. They may also hallucinate, have delusions, and show a wide variety of other symptoms which Bleuler called secondary, but which call attention to themselves by the severity with which one's life is impaired. All of these may be understood as attempts to deal with terror (anxiety seems too mild a term) of a chronic kind. Human beings do not tolerate chronic terror well.
>
> Unfortunately, so-called schizophrenic symptoms, or defenses against terror, have a tendency to make the problem worse. Thus, for example, withdrawal from people reduces one's immediate fear of people, but it makes it harder to overcome the fear of people, or the thought disorder, or the apparent inappropriateness of one's affect by decreasing corrective experience. Similarly, the thought disorder and/or inappropriate affect and/or delusions and hallucinations make it difficult to relate to people. Those people who have tended to use any of these in attenuated form as characteristic adjustive mechanisms are more likely to use them dramatically in the so-called schizophrenic "break." In psychoanalytic terms, they are more likely to use regression as a defense. Nonetheless, it is clear that schizophrenia is a human potentiality. All of us, under enough stress of the right kind, would develop schizophrenic symptoms [e.g., "battlefield" psychoses].

> But most of the patients who break down under the stresses of normal life have been prepared for such a breakdown by their childhood. The patient has suffered from a series of subtle and unsubtle rejections all his life which lead to the formation of a set of fantasies, conscious and unconscious, which then influence how later experience is perceived and the development of further fantasies, which eventually, of course, lead to a way of understanding the world which is intolerable (Karon and Rosberg, 1958a, 1958b; Rosberg and Karon, 1958, 1959).

The active psychoanalytic psychotherapy referenced above was specifically adapted for treatment in the group environment of the day treatment milieu. The day treatment staff worked together in male-female co-therapist dyads in the therapy groups to utilize the transference potentials of multiple therapy in an intentionally fostered environment designed to provide regressive and progressive developmentally corrective, or reconstructive in the structural sense, interpersonal learning experiences (c.f., Berke, 1979; Mosher and Menn, 1978).

The therapeutic focus of the adapted group treatment approach was on individual psychoanalytic psychotherapy in a group context, over a more usual group process approach (therapeutic focus upon the individual rather than group process has been compared by Powdermaker and Frank, 1953; Yalom, 1970; and Rubinstein [Cancro et al., 1974]).

The individual focus in group psychotherapy seems theoretically and clinically consistent with the withdrawal and autism in psychosis, and the psychotic's underlying propensity for intensive (symbiotic) dyadic transference relatedness, and identification and splitting processes (Kernberg, 1975; Mahler, 1971).

Therefore, priority was given in the treatment approach to protection and nurturance (Karon, 1963; Karon and VandenBos, 1981; Rogers et al., 1967), to resistance, transference, repression, undoing and acting-out, and the resolution of symbolic dissociation and intrapsychic conflict ("insight"), over the enhancement of social functioning per se. Fromm-Reichmann (1950), Karon (1963, 1976), Brody and Redlich (1952), and Sullivan (1962) have directly suggested that the therapeutic intervention with psychotics must be focused upon the reduction of anxiety-terror to allow for the re-establishment of interpersonal trust and <u>contingent</u> reality testing.

The group context has been reported to lower resistance to intensive psychotherapy in schizophrenics (Brody and Redlich, 1952). The staff experience with the experimental day treatment groups suggested that intensive psychoanalytic psychotherapy in a group setting allowed for a "vicarious" observational participation, if not more direct individual verbal

participation in group, for all group clients, but especially for those clients in group who were initially or intermittently severely autistic, delusional and/or hallucinating, and uncommunicative; who might nevertheless unwittingly evidence a nod, gesture, facial expression, or other manifest reation to what another person was saying or feeling--evidently based upon a persisting capacity for identification, and therefore evidence of the potential for relatedness and internalization of therapeutic cognitive, emotional, and interpersonal learning experiences.

Group psychotherapy was scheduled daily for each of the two separate day treatment groups scheduled on alternate weekdays. The duration of group therapy was approximately 1½ hours daily. In addition, some 30% of day center clients received one-half to two hours of adjunctive individual psychotherapy per week; initially with only the writer, who had a 20-25 hour per week caseload of individual aftercare clients; after six months of training, the other day center staff members began working individually with day center clients.

The decision to provide some clients with regularly scheduled adjunctive individual psychotherapy (staff were generally available to clients for individual time on an as-needed basis anyway), was based upon several well-considered imperatives: the client being

"at risk" of decompensation, suicide or assaultiveness; the client being overly withdrawn and terrified in the group setting and needing to develop a protective relationship fostered by the therapist; unyielding resistance or disruptiveness in group; and finally, if the client was processing in group therapy at a significantly faster pace than the other clients and was ready for transfer to aftercare for continuation in individual treatment.

Therapists

The experimental day treatment staff consisted of a female occupational therapist who was initially inexperienced in the psychotherapeutic treatment of psychotics, but had previous experience with a wide range of patient populations in close, supportive, and facilitating therapeutic relationship; a female social work technician with a psychodynamic orientation and previous experience in community mental health programs with aftercare clients; and the writer, a graduate student in clinical psychology working full-time as aftercare therapist/day treatment therapist, with four years of training in the psychoanalytic psychotherapy of psychoses supervised by Professor Bertram P. Karon, Department of Psychology, Michigan State University. Four months into the program, additional funds were

allocated to hire a male social worker with previous aftercare experience.

The staff could be described as enthusiastic, optimistic, cooperative, committed, energetic, tenacious, and nurturant. Three of the four staff members had completed coursework with Dr. Karon. The staff developed therapeutic interventions with clients built upon acceptance, concern, protection, nurturance, reassurance, understanding and insight, reparation and resolution, and reality testing. The staff met together daily after client hours for case review, ongoing training and processing, and development of all components of the experimental day treatment program. Staff morale was generally strong although the nature of the responsibilities were demanding and draining.

Clients

The experimental day treatment program and the two colateral comparison day treatment programs began services with chronic aftercare clients already residing within agency catchment areas in Adult Foster Care (AFC) boarding homes, or living with families or alone, and newly discharged patients from state hospitals and community psychiatric units referred for day treatment following discharge and community placement.

Clients referred for day treatment were interviewed by the day treatment staff, and on the basis of diagnosis, chronicity, and age, were assigned to one of the two treatment groups at each program (e.g., "high-functioning" and "low-functioning").

A total of 36 clients attended the experimental day treatment program over the program span of 18 months. An additional six clients were interviewed but did not follow through, dropped out after the first day or were referred to another agency (e.g., programs for the mentally retarded). A total of 17 clients were assigned to day treatment Group I, and 19 clients were assigned to Group II over 18 months.

Group I averaged 12 clients over the 18 months of the experimental day treatment program. Group I clients had a mean age of 28 years. Group I clients were primarily younger chronic psychiatric patients with histories of several psychiatric hospitalizations, psychotropic medications for several years or longer, and previous day treatment and dependent residential living (special training schools, half-way house, and AFC boarding homes).

The following diagnostic composition of Group I clients shown in Table 1 is based upon a consensus of psychiatric hospital records, community mental health

records, psychiatric medication reviews, and day treatment staff assessment.

TABLE 1.--Diagnostic Categories of Total Sample of Day Treatment Group I (N=17) over 18 Months.

Schizophrenia	
acute type	(1) male
catatonic type	(1) male
disorganized type	(1) female
paranoid type	(3) male
	(3) female
undifferentiated/simple type with mild mental retardation	(2) female
Paranoia with explosive features	(1) female
Schizoaffective Psychosis	(1) female
Organic Brain Syndrome assocated with psychosis	(1) female (3) males
	n=17

The severity of impairment in these chronic aftercare clients is reflected in the fact that none were employed or attending school when they entered the program, and 13 (77%) were residing in AFC homes; two lived with their families, and two lived alone in close dependence upon their families. Stein and Test (1978) loosely define the characteristics of the "chronic psychiatric patient" as high vulnerability to stress, deficiencies in coping skills, extreme dependency,

difficulty with working in the competitive job market, and difficulty with interpersonal relationships.

Group II averaged ten clients with a mean age of 50 years. Group II included more chronic or debilitated psychiatric patients with very lengthy hospitalization (up to 30 years in several cases) and psychiatric histories, ECT treatments, maintenance medication for many years, and generally poor prognosis. Eighteen of the 19 Group II clients resided in Adult Foster Care (AFC) boarding homes. Three clients in day treatment Group II were seen in adjunctive individual psychotherapy.

The diagnostic composition of Group II clients is shown in Table 2.

TABLE 2.--Diagnostic Categories of Total Sample of Day Treatment Group II (n=19) over 18 Months.

Schizophrenia	
undifferentiated type	(4) female (1) male
paranoid type	(2) female (2) male
simple type with mental retardation	(1) male
Schizoaffective Psychosis	(2) female (1) male
Organic Brain Syndrome	(1) female (1) male
Psychosis with Epilepsy	(1) male

TABLE 2.--Continued

Alcoholic Deterioration Syndrome	(1) male
Adjustment Reaction of Adult Life (terminal illness)[1]	(1) female
Hysterical Borderline Syndrome	(1) female
	n=19

[1]cerebral neoplasm

Psychotropic Medication

Aftercare clients were typically referred for day treatment already maintained on conventional to high doses of neuroleptic drugs as routinely prescribed by state hospital and community mental health medication oriented psychiatrists.

During the 18-month course of the experimental day treatment program, a consistent therapeutic goal was for client medication to be lowered in relation to evidence of symptomatic improvement, and more importantly, in response to client distress, side effects, and expressed willingness to manage a reduction in dosage or complete termination of medication. The results of outcome research reviewed by Gunderson (1977) support the position that drugs may be unnecessary in an intensive psychosocial treatment milieu.

For lack of administrative authority, reduction in medication dosage was not strictly controlled, and therefore, could not be evaluated as an outcome variable.

EVALUATION

The formal hypotheses of this study of psychoanalytically oriented day treatment are based upon the treatment goals stated before the inception of the program in a program proposal to Community Mental Health administration.

Treatment goals were formulated from a review of the theoretical and empirical research on treatment of psychosis generally, and schizophrenia in particular.

The global treatment goal was to reduce psychoticism. More specifically, the primary psychotherapeutic treatment goals were to:

(1) Reduce irrational-illogical thinking and delusional and hallucinatory distortions of reality testing.

(2) Reduce the level of anxiety-arousal (terror).

(3) Increase self-esteem and self-concept.

(4) Develop insight and awareness of feelings, motivations, and conflicts.

(5) Increase social functioning and relatedness; reduce autism, withdrawal, and isolation; reduce psychotic behavior via interpersonal corrective emotional learning experiences.

(6) Decrease or eliminate the need for drugs.

(7) Reduce the incidence of relapse-regression and rehospitalization.

Hypotheses

The following process and outcome hypotheses are based upon the treatment goals stated above:

Hypotheses I

Thought Disorder--It is proposed that given the specific conditions of psychoanalytically oriented day treatment, clients will show a decrease in thought disorder, and an increase in reality testing and ego strength.

Hypothesis I will be tested with the Visual-Verbal Test (VVT) measure of thought disorder, and with the following measures from the Minnesota Multiphasic Personality Inventory (MMPI); L, F, K, Paranoia, Schizophrenia, Psychotic Triad, Psychotic Index, Psychotic Score, and Ego Strength scale.

Hypothesis II

Affect--It is proposed that clients will evidence an increase in appropriate affect, awareness of affective reactions, and improved control of affect accompanied by a decrease in anxiety.

Hypothesis II will be tested with the following measures from the MMPI: Hypochondriasis, Depression, Hysteria, Psychopathic Deviate, Psychasthenia, Hypomania, Anxiety Factor, Internalization Ratio, and Manifest Anxiety scale.

Hypothesis III

Object Relations/Interpersonal Behavior--It is proposed that clients will show a reduction in withdrawal, suspiciousness, and insecurity-sensitivity, with an increase in self-acceptance, social functioning, and relatedness.

Hypothesis III will be tested with the following measures from the MMPI: Psychopathic Deviate, Masculinity-Femininity, Paranoia, Schizophrenia, Hypomania, and Social Introversion; and the Day Therapy Data Base (DTDB) behavioral ratings of clients.

Hypothesis IV

Client-Motivation for Treatment; Program Effectiveness--Client motivation to remain in treatment and the effectiveness of psychoanalytically oriented day treatment will be shown in client length of stay in treatment and frequency of attendance.

Hypothesis V

Ability to Function Out of the Hospital--The treatment effects upon the ability to function outside of the hospital will be shown in rehospitalization rate and length of rehospitalization data.

METHODOLOGY

The psychological evaluation of psychoanalytic psychotherapy process-outcome variables proposed in Hypotheses I, II, and III (Thought, Affect, and Object Relations/Interpersonal Behavior) was based upon repeated measures on the same clients. These measures are not only outcome measures, but are also process measures in the technical sense that changes in these psychological functions are hypothesized to be the fundamental elements of psychological change produced by psychoanalytic psychotherapy (Karon and VandenBos, 1981).

Psychological testing was initiated with the clients in day treatment Group I; these younger and less chronic clients were expected to show change earlier than clients in day treatment Group II. The decision to limit the assessment of treatment outcome to the Group I clients was based upon realistic limitation on staff time and resources for a larger study.

Comparative MMPI and VVT data were ultimately not made available from the two comparison day treatment programs because systematic client testing at regular intervals was not completed (eight MMPI's were obtained

from one program for one time interval, but retest MMPI's were not available because, according to program staff, tests had gotten misplaced or had not been dated, or had not been completed for a particular client).

Therefore, it proved to be impossible to obtain the hoped for psychological test data for an experimental design evaluating psychoanalytically oriented day treatment with two comparison day treatment programs. Thus, Group I clients serve as their own controls for a test-retest evaluation of outcome, testing differences against the null hypothesis of no change. The absence of comparison groups does not allow for the rigorous exclusion of alternative explanations for findings such as spontaneous changes with time.

It was finally possible to obtain demographic and length of stay and frequency of program attendance data for comparison of the three concurrent day treatment programs. It was ultimately not possible to obtain consent for access to rehospitalization data for the two comparison programs (these data were initially promised, but the information could only be retrieved by access to clients' names, which would require individual consent from each client; consequently, these data were not made available).

The overall demographic data for all recorded clients attending the psychoanalytically oriented day

treatment program and the two comparison day treatment programs over an 18 months study period are presented in Table 3.

TABLE 3.--Comparison of Three Day Treatment Program Client Populations on Demographic Variables.

Demographic Variables	Center 1 No.	%	Center 2 No.	%	Center 3 No.	%	Statistical Findings
n=	36		51		69		
Sex							
Male	18	50	25	49	29	42	x^2=.86
Female	18	50	26	51	40	58	p <.65 NS
Age							
Mean	37.4		36		40.8		F = 1.3949
SD	14.5		17.4		16.6		p <.25 NS
Marital Status							
Single	29	81	30	59	38	55	
Married	2	6	6	12	7	10	
Widowed			4	8	6	9	x^2=10.08
Separated					2	3	p <.26 NS
Divorced	5	14	11	22	16	23	
Education							
Mean	10.8		9.8[a,b]		9.8		F = 1.733
SD	3.2		3.2		2.5		p <.27 NS

[a]Three cases missing (1.9% total subjects).

[b]Includes 7 clients with academic years of special education.

As shown in Table 3, statistical comparisons (F, X^2) of demographic variables (age, sex, education, and marital status) show no significant differences between the three day treatment program client populations on these important demographic variables.

However, it was noted that although Department of Mental Health data coding does not specify the number of years of special education versus mainstream education, a Community Mental Health "Evaluation Report" (February 8, 1979) at 15 months, recorded seven clients (14%) at one of the comparison centers (Center 2) coded for special education, but no clients at the other two centers coded for special education. In fact, four clients (11%) in the experimental day treatment program were known to have attended special education or institutional training. The difference between the experimental program and the comparison program on the special education variable does not appear to be significant.

Therefore, the homogeneity of demographic variable variance between the three day center client populations suggests that the three day treatment programs can reasonably be compared for evaluation of length of stay and frequency of program attendance as process-outcome measures of the relative effectiveness of the three treatment programs.

Measures

The psychological test battery combined an objective psychometric assessment of psychopathology, the Minnesota Multiphasic Personality Inventory (MMPI); a projective instrument, the Rorschach Inkblot Test;[9] and a direct measure of thought disorder, the Visual-Verbal Test (VVT).

The MMPI is the most carefully constructed and investigated inventory measure of various dimensions of psychopathology available, and is included in the "Core Battery" recommended in the "Report of the Clinical Research Branch Psychotherapy Measures Project (Waskow and Parloff, NIMH, 1975). In that report, Dahlstrom notes:

> Most therapy studies incorporate a simple pretreatment, posttreatment evaluation series. A number of studies employing the MMPI suggest that it may be profitable to administer the test more often if an extended treatment regime is planned. There is evidence that some treatment efforts induce greater disturbance in the course of producing ultimate remission and that risks of suicide or other acting-out behavior deleterious to the patient or client shift from stage to stage in treatment.

---

[9]Unfortunately, the Rorschach testing had to be abandoned because approximately three months after the initial testing of all clients, the unscored Rorschach protocols disappeared from the agency front office and were never recovered.

> Periodic retesting indicates that the MMPI provides sets of scores that vary meaningfully over a lengthy series of administrations and that are not merely random fluctuations in scale levels and patterns. Experimental studies employing periodic reexamination by the MMPI also suggest that the variations do directly covary with important behavioral features through periods of stress and that scores return to baseline with remission (p. 21).

Form R of the MMPI (using only the first 400 critical items) was administered individually in order to facilitate these clients' ability to complete the lengthy inventory. Form R item numbers were appropriately converted for scoring of special research scales. Statistical analyses of MMPI data are based on uncorrected raw scores. There was some unavoidable item attenuation on the Taylor Anxiety (TA) and Barron Ego Strength (ES) scales, which are composed of selected items from the full MMPI. The following special research scales, with computational formulas, were also utilized to assess the dependent variables of thought, affect, and interpersonal relations: Psychotic Triad (PT=Pa+Pt+Sc); Goldberg Psychotic Index (PI=[L+Pa+Sc]-[Hy+Pt]); Psychotic Score (PS=Pa+Sc+Ma); Welsh Anxiety Index (AI=[1.33D+1.00Pt]-[.66Hs+.66Hy]); and Welsh Internalization Ratio (IR=Hs+D+Pt/Hy+Pd+Ma).

Group I pre-treatment MMPI's were obtained within the first month of the program as referrals were obtained (Time-1) for 11 clients.

Approximately six months later (T-2), eight MMPI's were obtained from the 11 clients who completed an MMPI at T-1. Two female clients who were struggling with highly ambivalent object relations and related paranoid dynamics refused to retake the MMPI at T-2; and a catatonic male client completed an unscorable MMPI at T-2. Additionally, at T-2, a new male client completed an initial MMPI.

At approximately 12 months (T-3), eight clients completed a third MMPI. A male client with a diagnosis of psychosis associated with eplipsy (OBS) was rehospitalized by his foster care homeowner for a relatively minor behavioral outburst at home and was subsequently transferred to a residential rehabilitation center without completing the MMPI at T-3. The two female clients who had refused to retake the MMPI at T-2 quit the day treatment program; one transferred to a sheltered workshop for the mentally retarded, the other client continued to be seen sporadically on an outpatient basis. The new male admission at T-2 (a paranoid schizophrenic) was rehospitalized by the same foster care operator of the epileptic client already noted, supposedly for persistent homicidal threats and gestures; no further testing was obtained for this client. Additionally, four new referrals to the program at approximately T-3

completed an initial MMPI, but MMPI testing was suspended after Time-3.

The Visual-Verbal Test (VVT) is a concept formation task which was specifically designed to measure the thought disorder in schizophrenia (Bleuler's primary symptom of schizophrenia). The test authors (Feldman and Drasgow, 1951) found no overlap in scores between normals and hospitalized schizophrenics. The VVT was also found to be uncorrelated with I.Q. in normal subjects. The 42 items of the VVT were split into odd- and even-numbered forms to counter possible practice effects in retesting. Odd-even reliability has been established by the test authors (Spearman-Brown r=.86 for chronic schizophrenic sample). Karon and VandenBos (1972) found that the odd-even items of the VVT provide good parallel forms of the test.

The VVT was initially administered to all nine clients in Group I at eight months (T-1, and was readministered to the same nine clients at 15 months (T-2).

Finally, clients in both experimental day treatment groups were rated consensually by the day treatment staff at three-month intervals using a Day Therapy Data Base (DTDB) behavioral rating scale. The DTDB was adapted by the agency from the Activity Therapy Data Base (Michigan Department of Mental Health T862, 8-74), and modified with item deletions and additions and an

expanded rating scale. The item deletions and additions were made by the day treatment staff on the basis of relevance to salient symptomatic features of psychoses, and meaningful criteria for behavioral assessments.

The DTDB rates five main areas of observable behavior:

(1) Social Skills (e.g., effectiveness of relating to peers; appropriateness of verbalizations).
(2) Behavior (e.g., overly dependent; hostile; depressed).
(3) Task-Oriented and/or Performance Skills (e.g., motivation; frustration tolerance; work quality).
(4) Sensory-Motor Performance (e.g., posture and ambulation; body image and awareness).
(5) Activities of Daily Living (e.g., personal hygiene; eating habits; commitment to program).

Each of the 37 items on the DTDB is rated on an 8-point scale: 1-No Problem--8-Extreme Problem. Group I DTDB ratings were made initially (n=11), at three months (n=12), at six months (n=12), at nine months (n=11), and at 12 months (n=10).

As can be seen, most of the client assessment measures end at 12 months even though, as described, the experimental day treatment program continued for an 18 month period.

Reserving more detailed explanation of what happened for the discussion section, it will only be noted here that at 15 months, the day treatment staff

received an abrupt administrative directive to change the focus of the program from psychoanalytic psychotherapy to "rehabilitation," and to discontinue test assessment of clients.

Statistical Analysis

Hypotheses I, II and III: The dependent variables (VVT, MMPI, DTDB) have been tested for significance by analysis of variance, and t-test.

Hypothesis IV: The dependent variables (length of stay, frequency of attendance) have been tested for significance by analysis of covariance, correcting for the effects of age, sex, education, and marital status when appropriate, and t-tests.

RESULTS

The measures of the effectiveness of psychoanalytically oriented day treatment were: (1) length of stay in treatment and frequency of program attendance, (2) the MMPI, (3) the VVT, and (4) the DTDB.

Comparisons, by analyses of covariance, of the three concurrent day treatment programs on average length of stay and frequency of program attendance with demographic variables is shown in Table 4.

Table 4 presents the relationships between demographic variables sex, age, marital status, and education on outcome variables of DAYS, MONTHS, and DAYS PER MONTH for the three day treatment programs.

Comparison of the three day treatment groups for DAYS shows a significant difference ($p < .001$), with a near significant effect of marital status ($p < .07$) on DAYS attended.

Average MONTHS attended also shows a significant difference between the three treatment groups ($p < .003$), with a significant effect of marital status ($p < .05$), and age as a significant covariate ($p < .03$) on MONTHS attended.

TABLE 4.--DAYS, MONTHS, and DAYS PER MONTH by SEX, MARITAL STATUS, AND GROUP with AGE and EDUCATION.

DAYS

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif. of F
Covariates	5620.286	2	2810.143	1.104	.335
Age	3292.912	1	3292.912	1.294	.257
Educ	879.074	1	879.074	.345	.558
Main Effects	91686.531	6	15281.088	6.004	.001
Sex	285.366	1	285.366	.112	.738
M Stat	18494.548	3	6164.849	2.422	.069
Group	53533.699	2	26768.849	10.517	.001
2-Way Interactions	16974.933	9	1886.104	.741	.871
Sex M Stat	2411.521	3	803.974	.316	.814
Sex Group	2689.858	2	1344.929	.528	.591
M Stat Group	8503.961	4	2125.990	.835	.505
3-Way Interactions	1288.421	3	429.474	.169	.917
Sex MStat Group	1288.421	3	429.474	.169	.917
Explained	115570.171	20	5776.509	2.270	.003
Residual	335961.136	132	2545.160		
TOTAL	451531.307	152	2970.601		

MONTHS

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif. of F
Covariates	229.729	2	114.864	3.655	.029
Age	150.404	1	150.404	4.786	.030
Educ	24.923	1	24.923	.793	.375
Main Effects	631.541	6	138.590	4.410	.001
Sex	4.405	1	4.405	.140	.709
M Stat	246.436	3	82.145	2.614	.054
Group	391.922	2	195.961	6.236	.003
2-Way Interactions	218.894	9	24.322	.774	.641
Sex M Stat	16.229	3	5.410	.172	.915
Sex Group	36.536	2	18.268	.581	.561
M Stat Group	156.169	4	39.042	1.242	.296
3-Way Interactions	74.417	3	24.806	.789	.502
Sex MStat Group	74.417	3	24.806	.789	.502
Explained	1354.581	20	67.729	2.155	.005
Residual	4148.256	132	31.426		
TOTAL	5502.837	152	36.203		

DAYS PER MONTH

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif. of F
Covariates	9.561	2	4.760	.780	.461
Age	2.937	1	2.937	.479	.490
Educ	3.882	1	3.882	.633	.428
Main Effects	243.648	6	40.608	6.625	.001
Sex	19.223	1	19.223	3.136	.079
M Stat	53.591	3	17.864	2.914	.037
Group	146.768	2	73.084	11.922	.001
2-Way Interactions	50.997	9	5.666	.924	.506
Sex M Stat	6.530	3	2.177	.355	.786
Sex Group	3.345	2	1.672	.273	.762
M Stat Group	29.821	4	7.455	1.216	.307
3-Way Interactions	9.661	3	3.220	.525	.666
Sex MStat Group	9.661	3	3.220	.525	.666
Explained	313.867	20	15.693	2.560	.001
Residual	809.150	132	6.130		
TOTAL	1123.018	152	7.388		

156 cases were processed.
3 cases (1.9 PCT) were missing.

DAYS PER MONTH shows a significant group difference (P <.001), with a significant effect of marital status (p <.04), and a near significant effect of sex (p <.08) on DAYS PER MONTH attended. Raw cell means for DAYS, MONTHS, AND DAYS PER MONTH by group and demographic variables are contained in Appendix B.

More specific comparisons of length of stay and frequency of program attendance by treatment program are shown in Table 5 which shows the actual means for each group and the results of t-tests.

TABLE 5.--Comparisons of Three Day Treatment Program Populations: Total DAYS, MONTHS, and DAYS PER MONTH Attended Over 18 Months.

	Center 1 n=36		Center 2 n=51		Center 3 n=69		
	Mean	SD	Mean	SD	Mean	SD	P
Days	94.19	63.11	45.12	47.52			p < .000
			45.12	47.52	44.19	44.72	p < .914
	94.19	63.11			44.19	44.72	p < .000
Months	11.22	6.15	6.29	5.16			p < .000
			6.29	5.16	7.41	5.94	p < .277
	11.22	6.15			7.41	5.94	p < .003
Days/Month	7.81	2.08	5.93	2.81			p < .001
			5.93	2.81	4.96	2.45	p < .045
	7.81	2.08			4.96	2.45	p < .000

t-test

As shown in Table 5, over the 18 months of day treatment evaluated by program, clients at the

psychoanalytically oriented program (Center 1) continued in day treatment significantly more DAYS ($p < .000$), MONTHS ($p < .000$), and DAYS PER MONTH ($p < .001$) than clients in the two comparison day treatment programs (Center 2 and Center 3). There were no significant differences in DAYS ($p < .91$) or MONTHS ($p < .28$) attended between the two comparison programs, but there appeared to be a significant difference in average DAYS PER MONTH ($p < .05$) between the two comparison programs.

The differences evident in the total numbers of clients seen over 18 months at each of the programs (Center 1, n=36; Center 2, n=51; Center 3, n=69) shows more client attrition and turnover at the two comparison day treatment programs.

Psychological process-outcome evaluations of treatment were made on Group I clients in psychoanalytically oriented day treatment. Comparable evaluations were not made at the two comparison day treatment programs. Therefore, psychological evaluations of Group I clients are based on clients serving as their own controls for test-retest evaluation of psychoanalytically oriented day treatment.

MMPI testing was completed for the core group of clients in day treatment Group I at pre-treatment, six months and 12 months (continued evaluations planned for six month intervals were not made because of termination

of the program and evaluations at approximately 15 months).

Table 6 presents pre-treatment (Time-1), six month (Time-2), and 12 month (Time-3) MMPI scores for the core sample of Group I male and female clients who completed retest MMPI's at six and 12 month assessments (subject attrition from pre-treatment sample was noted in the methodology and will be considered further in the discussion of findings).

As shown in Table 6, the MMPI findings are not striking. For the core sample of Group I male and female clients who completed MMPI retesting at six and 12 months, only two MMPI scales at six months showed a reduction from pre-treatment scores that even approached significance: the L (Lie) scale ($p < .07$) and the Hs (Hypochondriasis) scale ($p < .07$). The 12 month MMPI scores suggest a regression from the changes apparent at six months; the 12 month scores show no significant changes from pre-treatment scores on any scale.

Pre-treatment (Time-1), six month (Time-2), and 12 month (Time-3) MMPI scores for the male subsample of Group I clients who completed at least two test-retest MMPI's are shown in Table 7.

As shown in Table 7, for males at six months, two MMPI scores showed a significant increase; the Pa (Paranoia) scale ($p < .02$) and the PI (Psychotic Index)

TABLE 6.--Comparison of Pre-Treatment, 6-Months and 12-Months MMPI Scores for Day Treatment Group I n=8 (males=4, females=4).

Scale	Pre-Treatment Time-1	6 Months Time-2	12 Months Time-3
L	6.75/6.63#	4.75 p < .072	5.25
F	18/18.63	17.63	17.75
K	11/11.13	10.75	12.25
Hs	10.63/9.75	9.5 p < .065	9.13
D	25/24.25	22.7	24.38
Hy	19.13/17.88	18.75	20.13
Pd	21.88/21.5	22.13	21.88
Mf	28.75/28.88	30.25	31.38
Pa	14.75/15	16.1	15.75
Pt	21.25/19.75	21.5	20.75
Sc	29.25/29	30.5	30.5
Ma	22.63/22.88	21.88	22.38
Si	32.88/32.13	34.38	30.63
ES	23.13/23.5	23.88	23.25
TA	19/18.13	17.5	17.38
PT	66.63/66.88	68.5	68.63
PS	65.25/63.75	68.13	68.88
PI	10.38/13	11.13	11.13
IR	.88/.86	.86	.86
AI	34.87/34.64	33.12	33.86

paired t statistics

#The first figure consists of Time-1 clients who also took the MMPI at six months (Time-2); the second figure at Time-1 is the mean for all clients who also took the MMPI at Time-3.

TABLE 7.--COMPARISON OF PRE-TREATMENT, SIX MONTHS AND 12 MONTHS MMPI SCORES FOR DAY TREATMENT GROUP I MALES, n=4.

Scale	Pre-Treatment Time-1	6 Months Time-2		12 Months Time-3
L	5/4.75[#]	2.75	$p < .10$	5.5
F	18.5/19.75	18.25		16.5
K	9.5/9.75	7.5		11.25
Hs	9.5/7.75	8		8.5
D	22/20.5	20.75		23.25
Hy	17/14.5	14.75		18.75
Pd	20.25/19.5	20.5		19.5
Mf	27.5/27.75	28.75		29.75
Pa	12.25/12.75	15.75	$p < .02$	14
Pt	20.5/17.5	22.75		20.5
Sc	26.75/26.25	32.75		29.5
Ma	21.5/22	24		24.5
Si	33/31.5	32		27.75
ES	23.25/24	22.75		23
TA	18.75/16.75	17.75		16.75
PT	60.5/61	72.5		68
PS	59.5/56.5	71.25		64
PI	6.5/11.75	13.75	$p < .002$	9.75
IR	.87/.82	.88		.86
AI	32.27/31.82	35.34		33.44

paired t statistic

#Clients at Time-1 and Time-2/Clients at Time-1 and Time-3.

score ($p < .002$). Along with these two significant score elevations, it can be noted that the L (Lie) scale

showed a decreasing trend ($p < .10$). At 12 months, there were no significant changes from pre-treatment scores apparent for the male subsample.

Pre-treatment (Time-1), six month (Time-2), and 12 month (Time-3) MMPI scores for the female subsample of Group I clients who completed at least two test-re-test MMPI's are shown in Table 8.

As shown in Table 8 for females at six months, three MMPI scales showed significant changes from pre-treatment scores; the Pt (Psychasthenia) scale showed a significant decrease ($p < .04$), the ES (Ego Strength) scale showed a significant increase ($p < .02$), and the TA (Taylor Anxiety) scale showed a significant decrease ($p < .001$).

Comparison of difference (change) scores on the MMPI between males and females for pre-treatment to six months, six months to 12 months, and pre-treatment to 12 months is shown in Table 9.

As shown in Table 9, females showed significantly more change (increase) on the K scale than males ($p < .03$) pre-treatment to six months, and a trend toward more change (decrease) than males on the Ma (Hypomanic) scale ($p < .08$) and TA (Taylor Anxiety) scale ($p < .07$) at six months.

TABLE 8.--Comparison of Pre-Treatment, 6 Months and 12 Months MMPI Scores for Day Treatment Group I Females, n=4.

Scale	Pre-Treatment	6 Months		12 Months
L	8.5	6.75		6
F	17.5	17		19
K	12.5	14		13.25
Hs	11.75	11		9.75
D	28	24.75		25.5
Hy	21.25	22.75		21.5
Pd	23.5	23.75		24.25
Mf	30	31.75		33
Pa	17.25	16.5		17.5
Pt	22	20.25	$p < .04$	21
Sc	31.75	28.25		31.5
Ma	23.75	19.75		20.25
Si	32.75	36.75	$p < .07$	33.5
ES	23	25.5	$p < .02$	23.5
TA	19.5	16.25	$p < .001$	18
PT	72.75	64.5		69.25
PS	71	65		70
PI	14.25	8.5		12.5
IR	.90	.85		.86
AI	37.46	30.90		34.29

paired t statistic

TABLE 9.--Comparisons Between Male and Female Change Scores T1-T2, T2-T3, and T1-T3.

	t value (male-female)		
Scale	T1-T2	T2-T3	T1-T3
L	.25	-2.09	-1.61
F	-.04	.28	.59
K	-3.13 $p < .026$	-1.41	-.25
Hs	.70	-.66	-1.18
D	-.68	.03	-1.63
Hy	1.14	-1.00	-.95
Pd	0.00	-.04	.19
Mf	.18	.09	.35
Pa	-1.32	.26	-.20
Pt	-1.16	-.35	-.86
Sc	-1.31	.58	-.39
Ma	-2.24 $p < .065$	-.80	-1.20
Si	1.41	-1.41	.92
ES	1.81	.46	.30
TA	-2.09 $p < .081$	.02	-.40
PT	.32	-.02	.20
PS	-1.49	.53	-.30
PI	-1.53	1.00	.02
IR	- .59	-	-.14
AI	- .66	-.24	-.24

pooled or separate variance estimate for significance level.

Comparisons for six months to 12 months, and pre-treatment to 12 months showed no significant findings at these comparisons.

The Visual-Verbal Test (VVT), a direct measure of thought disorder, findings for males and females, and male and female subgroups, are shown in Table 10.

TABLE 10.--Comparison of VVT Scores at 8 Months (T-1) and 15 Months (T-2) for Total Sample, and by Sex.

Time	n	Mean # Errors	SD	St'd Error	t	df	2-tail
1	9	11.22	4.97	1.66	2.67	8	p< .03
2	9	7.56	4.83	1.61			
1-2		3.67	4.12	1.37			

r=.65 p .060

Time	Sex	n	Mean # Errors	SD	St'd Error	t	df	2-tail
1	M	4	10.50	6.61	3.30			
	F	5	11.80	3.96	1.77	-.35	4.68	p<.74 NS
2	M	4	8.50	6.14	3.07			
	F	5	6.80	4.09	1.83	.48	5.03	p<.65 NS
1-2	M	4	-2.00	3.16	1.58			
	F	5	-5.00	4.64	2.07	1.15	6.9	p<.29 NS

Separate variance estimate for t-tests.

Initial VVT testing was made during the eighth month of the treatment program with retesting scheduled for approximately six months later. The VVT findings show a significant reduction in thought disorder ($p < .03$) within the evaluation interval during the latter half of the treatment program, at a time period when serious

external problems were already disrupting the operation of the program.

The VVT data do not show a significant difference between males and females on the VVT at Time-1 ($p < .74$), Time-2 ($p < .65$), or in difference (change) scores from Time-1 to Time-2 ($p < .29$).

Table 11 presents analyses of variance for the DTDB behavioral ratings of Group I clients made at pre-treatment, and at three month intervals thereafter for a total of 12 months, by subtest score, sex, and test (Time-1 - Time 5). The subtests are: Score 1--social skills, Score 2--problem behavior, Score 3--task oriented/performance skills, Score 4--sensory-motor, and Score 5--activities of daily living skills.

The DTDB behavioral ratings show a significant change over testing on subtest scores 1, 2, and 3, but not on subtest scores 4 and 5 over 12 months. Sex shows a significant effect on subtests 3, 4, and 5, but not on subtests 1 and 2. More specific directionality of outcome findings on the DTDB ratings are presented in Table 12.

Comparisons of DTDB ratings from pre-treatment to 3 months, 6 months, 9 months, and 12 months by subtest score, and total sum score, and sex, are shown in Table 12.

TABLE 11.--DTDB Analysis of Variance: Score 1 to Score 5 by Subject, Sex, and Test (T-1 to T-5) over 12 Months.

EFFECT ... TEST

Univariate F-Tests With (4, 47) D. F.

Variate	Hypothesis Sum of Sq.	Error Sum of Sq.	Hypothesis Mean Sq.	Error Mean Sq.	F	Signif. of F
Score 1	818.45012	1457.59011	204.61253	31.01256	6.59773	.00027
Score 2	5543.65571	7727.48797	1385.91393	164.41464	8.42938	.00003
Score 3	1672.30771	7199.16355	418.07693	153.17369	2.72943	.04009
Score 4	463.51268	4465.76893	115.87817	95.01636	1.21956	.31522
Score 5	262.48177	2046.69495	65.62044	43.54670	1.50690	.21543

EFFECT ... SEX

Univariate F-Tests With (1, 47) D. F.

Variate	Hypothesis Sum of Sq.	Error Sum of Sq.	Hypothesis Mean Sq.	Error Mean Sq.	F	Signif. of F
Score 1	.14845	1457.59011	.14845	31.01256	.00479	.94513
Score 2	.40349	7727.48797	.40349	164.41464	.00245	.96070
Score 3	673.39666	7199.16355	673.39666	153.17369	4.39629	.04142
Score 4	633.47311	4465.76893	633.47311	95.01636	6.66699	.01300
Score 5	357.80441	2046.69495	357.80441	43.54670	8.21657	.00619

TABLE 12.--Comparisons of DTDB Ratings Pre-Treatment to 3, 6, 9, and 12 Months by Subtest Score, with Sex.

ESTIMATES FOR SCORE 1

SEX D. F.	Coeff.	Standard Error	T-Value	Signif. of T	Lower .95 Conf. Lim.	Upper .95 Conf. Lim.
1	-.09073	.77206	-.11751	.90696	-1.64391	1.46248

TEST D. F.	Coeff.	Standard Error	T-Value	Signif. of T	Lower .95 Conf. Lim.	Upper .95 Conf. Lim.
1	7.15385	2.18430	3.27512	.00199	2.75960	11.54809
2	10.05273	2.28643	4.39669	.00006	5.45303	14.65243
3	9.92571	2.50313	3.96532	.00025	4.89006	14.96137
4	4.05071	2.50313	1.61826	.11230	-.98494	9.08637

ESTIMATES FOR SCORE 2

SEX D. F.	Coeff.	Standard Error	T-Value	Signif. of T	Lower .95 Conf. Lim.	Upper .95 Conf. Lim.
1	-.32097	1.77767	-.18056	.85749	-3.89718	3.25525

TEST D. F.	Coeff.	Standard Error	T-Value	Signif. of T	Lower .95 Conf. Lim.	Upper .95 Conf. Lim.
1	14.53846	5.02937	2.89071	.00580	4.42067	24.65625
2	22.93697	5.26452	4.35689	.00007	12.34611	33.52783
3	25.29262	5.76349	4.38842	.00006	13.69797	36.88726
4	1.54262	5.76349	.26765	.79014	-10.05203	13.13726

ESTIMATES FOR SCORE 3

SEX D. F.	Coeff.	Standard Error	T-Value	Signif. of T	Lower .95 Conf. Lim.	Upper .95 Conf. Lim.
1	3.43266	1.71583	2.00059	.05123	-.01914	6.88446

TEST D. F.	Coeff.	Standard Error	T-Value	Signif. of T	Lower .95 Conf. Lim.	Upper .95 Conf. Lim.
1	11.92309	4.85440	2.45614	.01779	2.15729	21.68887
2	12.95025	5.08137	2.54857	.01414	2.72785	23.17265
3	14.46597	5.56298	2.60040	.01241	3.27471	25.65724
4	5.34097	5.56298	.96009	.34192	-5.85029	16.53224

ESTIMATES FOR SCORE 4

SEX D. F.	Coeff.	Standard Error	T-Value	Signif. of T	Lower .95 Conf. Lim.	Upper .95 Conf. Lim.
1	3.48293	1.35139	2.57729	.01316	.76428	6.20158

TEST D. F.	Coeff.	Standard Error	T-Value	Signif. of T	Lower .95 Conf. Lim.	Upper .95 Conf. Lim.
1	5.92308	3.82334	1.54919	.12804	-1.76848	13.61464
2	6.24810	4.00210	1.56120	.12518	-1.80309	14.29929
3	8.02753	4.38142	1.83218	.07327	- .78674	16.84180
4	7.15253	4.38142	1.63247	.10926	-1.66174	15.96680

ESTIMATES FOR SCORE 5

SEX D. F.	Coeff.	Standard Error	T-Value	Signif. of T	Lower .95 Conf. Lim.	Upper .95 Conf. Lim.
1	2.61586	.91487	2.85927	.00631	.77538	4.45634

TEST D. F.	Coeff.	Standard Error	T-Value	Signif. of T	Lower .95 Conf. Lim.	Upper .95 Conf. Lim.
1	2.53846	2.58834	.98073	.33175	-2.66860	7.74553
2	3.94235	2.70936	1.45509	.15229	-1.50818	9.39288
3	7.07622	2.96615	2.38566	.02113	1.10910	13.04334
4	2.82622	2.96615	.95282	.34555	-3.14090	8.79334

ESTIMATES FOR TOTAL SCORE

SEX D. F.	Coeff.	Standard Error	T-Value	Signif. of T	Lower .95 Conf. Lim.	Upper .95 Conf. Lim.
1	9.74557	4.60324	2.11711	.03946	.49014	19.00099

TEST D. F.	Coeff.	Standard Error	T-Value	Signif. of T	Lower .95 Conf. Lim.	Upper .95 Conf. Lim.
1	42.07692	13.13420	3.20362	.00241	15.66884	68.48500
2	56.00786	13.74780	4.07395	.00017	28.36605	83.64967
3	68.90613	14.52126	4.74519	.00002	39.70919	98.10308
4	20.96120	15.05128	1.39265	.17014	-9.30144	51.22383

As shown in Table 12, the DTDB ratings subtest scores 1 (social skills), 2 (problem behavior), 3 (task-oriented/performance skills) showed significant improvement at 3, 6, 9, and 12 month comparisons with pre-treatment ratings. Scores 4 (sensory motor performance) and 5 (activities of daily living skills) showed a significant improvement over pre-treatment ratings only at the 9 month comparison. Total sum scores on DTDB ratings showed significant improvement at 3, 6, and 9 months, but not at 12 month comparison with pre-treatment.

Comparisons by sex found that females were rated significantly better overall than males on scores 3, 4, and 5; sex differences on total sum scores just missed significance.

DISCUSSION

Process-Outcome Evaluation of Psychoanalytically Oriented Day Treatment

Thought Disorder

Hypothesis I proposed that given the specific conditions of psychoanlytic psychotherapy in day treatment, clients would show evidence of decrease in thought disorder, associated with improved reality testing and ego strength.

The process-outcome measures of the effects of psychoanalytically oriented day treatment on reduction in thought disorder were based upon the Visual-Verbal Test (VVT), a direct measure of thought disorder, and the following MMPI scales: L, F, K, Pa, Sc, and special research scales; Barron Ego Strength (ES), Goldberg Psychotic Index (PI), Psychotic Score (PS), and Psychotic Triad (PT).

The VVT, the direct measure of thought disorder, showed a significant reduction in thought disorder for males and females at an evaluation interval (8-15 months) late into the treatment program, even though the operation of the program was already seriously disrupted. The VVT was previously found to be very

sensitive to the effects of psychotherapeutic treatment upon the thought disorder in schizophrenia (Karon and VandenBos, 1981).

The findings on the indirect measures of thought disorder based upon the MMPI (L, F, K, Pa, Sc, PT, PI, PS, and ES) were not striking; however, at six months, male and female clients did show a trend ($p < .07$) toward reduction on the Lie (L) scale (i.e., denial of illness and need for help, repression, deception).

At six months, females showed a significant increase on the Ego Strength scale, and significantly more change (increase) on the K scale (which has been associated with improved ego strength) than males. Males showed a trend toward reduction on the Lie (L) scale accompanied by a significant increase on the Paranoia (Pa) scale, and the Psychotic Index (PI=[L+Pa+Sc]-[Hy+Pt]). The other MMPI scores operationalized to evaluate changes in the thought disorder were not significant at six month comparison with pre-treatment.

At 12 months, there were no significant changes from pre-treatment evident on the MMPI for males and females, or male and female subsamples.

The increase on Pa and PI for males at six months suggest a transitory increase in psychoticism for males during this period of treatment. These findings for males could be explained by several

different possibilities: (1) reduction on the Lie scale, indicating less denial of illness and need for help, associated with increased (more truthful) endorsement of pathological items on the MMPI; (2) process characteristics of the psychotherapeutic treatment of psychotics (e.g., Kayton, 1975; Karon and VandenBos, 1981). For example, Karon and VandenBos have observed that:

> A careful systematic attempt to understand a paranoid system in detail will reveal that it changes from week to week and even from day to day, especially when it undergoes mutual scrutiny by a patient and an interested psychotherapist. The paranoid system does not quite fit reality, and therefore enormous repair work is continuously being done by the patient to make it fit. The work gets frenetic when there is a therapist who continually brings the inconsistencies with reality to the patient's attention in a sympathetic way (p. 60);

and (3) uncontrolled external factors reflecting the "intransigency of the environment" (Campbell and Stanley, 1963). The most critical uncontrolled external factors affecting the day treatment program were the internal problems at the board and care homes where the clients resided, and the tenuous and ambivalent relationship of these homes to the mental health system. These issues will be considered more fully in a later section of the discussion.

Dahlstrom (Waskow and Parloff, 1975) notes that "experimental studies employing periodic reexamination

by the MMPI also suggest that the variations do directly covary with important behavioral features through periods of stress . . .."

Affect

Hypothesis II proposed that clients would show an increase in appropriate affect, awareness of affective reactions, and improved control of affect accomplished by a decrease in anxiety and confusion.

The process-outcome measures of affective functioning (e.g., anxiety, anger-hostility, depression) were based upon the following MMPI scales: Hs, D, Hy, Pd, Pt, and Ma; and special research scales, Taylor Anxiety (TA) scale, Welsch Anxiety Index (AI), and Welsh Internalization Ratio (IR).

At six months, for males and females, only the Hypochondriasis scale (i.e., somatization, displacement) showed a reduction that even approached significance ($p < .065$). Females showed a significant reduction on two measures of anxiety; the Psychasthenia (Pt) scale (e.g., obsessions, phobias, anxiety, doubt, guilt) and the Taylor Manifest Anxiety Scale. The remaining MMPI measures operationalized to evaluate changes in affective functioning were not significant (D, Hy, Pd, Ma, AI, and IR).

At 12 months, there were no significant changes from pre-treatment scores evident on the MMPI for males and females, and male and female subsamples.

The improvement in affective functioning shown in the reduction in somatic complaints and preoccupations for males and females, and the decrease in anxiety for females, apparent at six month evaluation but not at 12 months, suggests a transitory change in affect. However, it should be noted that the only measures of affective functioning are based on the MMPI.

Object Relations/Inter-
Personal Behavior

Hypothesis III proposed that clients would show a reduction in withdrawal, suspiciousness-mistrust, and insecurity-sensitivity, with an increase in self-acceptance, social functioning, and relatedness.

The process-outcome measures of object relations/interpersonal behavior were based on the following MMPI scales: Pd, Mf, Pa, Sc, Ma, and Si; and ratings of clients based upon the Day Therapy Data Base (DTDB) ratings of observable behavior: (1) social skills, (2) problem behavior, (3) task-oriented and/or performance skills, (4) sensory-motor performance, and (5) activities of daily living skills.

The MMPI findings provide no evidence of improvement in interpersonal functioning at either six

month or 12 month comparisons with pre-treatment. In fact, the six month findings for males suggested a transitory increase in paranoia. Females showed a trend toward increase on the Social Introversion (Si) scale (i.e., introversion-extroversion, and a trend toward more change (reduction) than males on the Hypomanic (Ma) scale at six month comparison).

The DTDB therapist ratings of clients' observable behavior showed a significant improvement on ratings of social skills, problem behavior, and task-oriented/performance skills at 3, 6, 9, and 12 month comparisons with pre-treatment ratings. Ratings of sensory-motor performance and activities of daily living showed a significant improvement only at the nine month comparison. Total sum DTDB score showed significant client improvement at 3, 6, and 9 months, but not at 12 months.

Again, the MMPI findings are not striking, although the DTDB findings show improvement in interpersonal functioning.

Some Comments on the MMPI

It is noteworthy that none of the study hypotheses are supported when tested by the MMPI, although the other process-outcome measures (VVT, DTDB behavioral ratings, length of stay in treatment and program

attendance) seem to be consistent with one another and supportive of the treatment hypotheses. Other investigators have also reported a lack of discernable findings when the MMPI is applied to the study of schizophrenia. For example, Rogers, Gendlin, Kiesler, and Truax (1967) also reported a lack of significant findings on MMPI measures in the Wisconsin psychotherapy with schizophrenics project, although the therapy group in general did show a slightly better discharge rate 12 months after the termination of treatment, and follow-up data indicated that the therapy patients were more successful in maintaining themselves outside of the hospital. By contrast, measures based on the TAT showed evidence of greater constructive personality change in the therapy patients than in the control patients. Lest critics of the effectiveness of psychotherapy for schizophrenics endorse the lack of supportive findings based on the MMPI as authoritative, it should be noted that Haier, Rosenthal, and Wender (1978) reported that "on the basis of the MMPI data, there are no overall personality differences between the index and control groups" in a study of MMPI assessment of psychopathology in a sample of adopted away offspring of schizophrenics and matched controls.

It is possible that the MMPI may not be sensitive enough to the process-outcome changes in psychotics

that can result from psychotherapeutic treatment or that these changes may become significant on the MMPI with more time. In any case, the phrasing of some MMPI items would appear to be biased against improvement or recovery since, to answer the item truthfully, a client must still endorse a pathological item that may no longer be valid. For example:

33. I have had very peculiar and strange experiences.
41. I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going."
156. I have had periods in which I carried on activities without knowing later what I had been doing.
194. I have had attacks in which I could not control my movements or speech but in which I knew what was going on around me.
251. I have had blank spells in which my activities were interrupted and I did not know what was going on around me.
278. I have often felt that strangers were looking at me critically.
291. At one or more times in my life I felt that someone was making me do things by hypnotizing me.
323. I have had very peculiar and strange experiences.
352. I have been afraid of things or people that I knew could not hurt me.

Seven of the above items comprise nine percent $(\frac{7}{78})$ of the Schizophrenia scale of the MMPI.

The 12 month findings, or more appropriately, the lack of findings on the MMPI at 12 months, were disappointing and suggested a regression from the changes evident at six months comparison with pre-treatment.

In a report of clinical status change over 20 months of treatment in the Michigan State Psychotherapy Project (Karon and VandenBos, 1970), these investigators reported a similar regression in their outcome findings at the 12 month assessment:

> It is not known whether this up-down-up pattern of patient change is, in fact, the pattern typically made by patients over time, but a strong case could be made for such a pattern of change in patient functioning. Kiesler, Klein, and Mathieu (1965, 1967) found similar up-down patterns of functioning of schizophrenic patients, both within individual sessions and over the course of treatment. The patients make some gains and then feel safe enough to look into other areas of their functioning. The resulting uncovering results in a lowered level of functioning, but one that is higher than before treatment began, from which new gains can be made.

Karon and VandenBos (1981) also noted that the Detroit Riots occurred just before their 12 month assessments were made, given that nearly all their study patients were Black, inner-city residents being treated by white therapists.

It is interesting that similar disruptive countertherapeutic environmental variables ultimately led to the termination of the experimental day treatment program being evaluated, and the rehospitalization of six Group I clients from one particular boarding home within ten months.

Sex Differences

In evaluating the apparent sex differences found on MMPI process-outcome measures, caution is advised by the small sample size. However, in a study of unmedicated schizophrenics in psychotherapeutic treatment, Zahn, Carpenter, and McGlashan (1981) also found "puzzling sex differences" on measures of ANS functioning in improved schizophrenics. Improved male and female patients showed changes in opposite directions on some autonomic variables; males declined in reactivity and females increased in ANS reactivity from admission to discharge. Zahn et al. concluded that "there is evidence that the psychosis may have affected male and female patients in different ways" rather than sex differences in stable "trait" phenomena.

Client Motivation for Continuation (and Maintenance) in Treatment; Program Effectiveness

Hypothesis IV proposed that client motivation to continue in treatment and the effectiveness of psychoanalytically oriented day treatment would be shown in client length of stay and frequency of attendance statistics.

Demographic and attendance summary data were obtained for the three concurrent day treatment programs. The three program models of day treatment compared were:

Center 1--psychoanalytically oriented, Center 2--Educational-Behavioral, and Center 3--Educational-Behavioral-Counseling. Program treatment philosophies contained in a Community Mental Health "Evaluation Report" (February 8, 1979) are presented in Appendix C.

Comparison of the three day treatment program statistics on total DAYS, MONTHS, and DAYS PER MONTH of continuation in treatment clearly showed that psychoanalytically oriented day treatment was superior to the two comparison day treatment programs in motivating and maintaining clients in day treatment over time.

The critical importance of length of stay in treatment, and to a lesser extent, frequency of attendance, as process and outcome variables in psychosocial treatment of psychotic patients is supported by previous research suggesting that length of stay in treatment and frequency of attendance are positively related to outcome (Beard et al., 1978; Glick and Hargreaves, 1979; Goldberg et al., 1977; Guy et al., 1969; Hogarty et al., 1973, 1974; Kirk, 1976; Karon and VandenBos, 1975; Levene et al., 1970; McCranie and Mizell, 1978; Rubins, 1976; Shattan et al., 1966; Sheldon, 1964; and Wilder et al., 1966). Sue, McKinney, and Allen (1976) reported that of the 13,450 clients referred to aftercare services in 19 mental health facilities, 40% terminated treatment after one session.

The variables of length of stay and frequency of attendance in psychosocial treatment would seem to have central relevance to the symptomatology of psychosis in general, and schizophrenia in particular (e.g., autism, ambivalence, apathy, negativism, hostility, withdrawal, mistrust, suspiciousness, and disturbances of self-concept, volition, and motivation) and, therefore, to the primary process in the psychotherapeutic treatment of psychotic individuals; namely, the establishment of relatedness.

As noted by Mosher and Keith (1980): "However, schizophrenia is defined, most persons who receive this diagnosis have extraordinary difficulty in establishing and maintaining human relationships" (p. 10). As in all intensive psychotherapies, the central difficulties in positive human relationships are manifested in the psychotherapeutic relationship, which provides a modality for understanding, experiencing, and resolving these difficulties through corrective psychotherapeutic communication between client and therapist(s).

Ability to Function Out of the Hospital

Hypothesis V proposed that the effects of psychoanalytically oriented day treatment on client ability to function outside of the hospital (community survival)

would be shown in rehospitalization rate and length of rehospitalization data.

As discussed previously, rehospitalization data were ultimately not made available for the two comparison day treatment programs; consequently, it is not possible to draw any rigorous conclusions. Nonetheless, rehospitalization data were recorded for clients in psychoanalytically oriented day treatment as one measure of client and program functioning.

Of the total of 36 clients who attended experimental day treatment Group I and Group II over 18 months, the rehospitalization rate for Group I clients (n=17) was eight rehospitalizations over 18 months; the rehospitalization rate for Group II clients over 18 months was four rehospitalizations. This differential rehospitalization rate between younger and older chronic schizophrenic patients would seem to be consistent with findings of long-term follow-up studies on the course of schizophrenia (e.g., Bleuler, 1976; Ciompi, 1980). The overall rehospitalization rate for the experimental day treatment program was 12 rehospitalizations (12/36=33%) over 18 months. It is noteworthy that of the eight rehospitalizations for Group I clients, six of the seven clients rehospitalized in Group I (n=17 over 18 months) were all rehospitalized from the same boarding home

typically for behavioral altercations rather than psychotic decompensation requiring rehospitalization.

These rehospitalization figures compare favorably with rehospitalization base rates reported by Anthony, Cohen, and Vitalo (1978) in their review of outcome studies. Their recidivism percentages were estimated to be 30 to 40% at one year, and 65 to 70% at three to five years.

Length of rehospitalization proved not to be a reliable measure because: (1) clients were usually transported from the state hospital to the day center for continuation in day treatment at the client's request; and (2) length of rehospitalization was typically due to the client not being allowed to return to the boarding home, and lengthy wait pending the availability of a new home for placement rather than psychotic decompensation requiring a term of rehospitalization.

The Demise of the Experimental Day Treatment Program

Confidence in psychotherapeutic day treatment was built within the first six months of the experimental program by staff efforts to develop working alliances with clients, boarding home operators, families, and staff of collateral agencies such as emergency services, inpatient facilities, social services, social security, and physician practitioners.

Initially, skepticism and pessimism were expressed within the mental health system when the psychoanalytically oriented day treatment program was first proposed and began treatment.

Client satisfaction, the program operating over capacity, attendance and rehospitalization figures, and monthly meetings with boarding home operators, all provided evidence of the effectiveness of the treatment approach. There was increasing interest and support coming from within the mental health system; site visits and staff consultations with other agencies, additional funding for the program, and a presentation by the staff at a regional partial hospitalization conference.

Ironically, as such "good press" often encourages, for mixed reasons and often with paradoxical results, the day treatment staff were informed that an effort was being made within the system to place the most difficult clients within the agency catchment area so that they could attend the program.

The catalyst for the emergence of the real issues related to the treatment of psychotic patients within institutions--of a distinctly political character (i.e., power issues)--occurred after six months beginning with a series of recurrent confrontations between one of the boarding home operators and the clients residing in this home.

At four months into the program, a regressed female hebephrenic client had left this home late at night and hitch-hiked on the freeway back to the state hospital, approximately 80 miles away, from which she had been discharged to this home. Three months later, a rather immature and attention-seeking male was returned to the state hospital from this home for a behavioral disturbance in the home, not a psychotic decompensation requiring rehospitalization. At ten months, a difficult paranoid client was also returned to the state hospital for persistent homicidal threats and gestures. Three more female clients and a retarded male (who was not a day center client) were also returned to the state hospital from this home.

In total, over the 18 months of the program, six of the seven day center clients rehospitalized were all from this one particular boarding home (the seventh being a male with OBS following a car accident, who had a tendency to wander off at night).

It seems worth mentioning that the clients returned to the state hospital from this particular boarding home were not so decompensated that they could not request to be, and were, transported from the local state hospital to the day center two to three days per week so that they could continue in the program (with the exception of the male who made homicidal threats;

he asked to continue in the program, but was deemed "too dangerous" by the hospital personnel).

Half of the clients returned to the state hospital from this boarding home were not allowed to return to the home. This turnover in clients placed in this home and referred to the day treatment program accounted for most of the turnover in the day center census, apart from day center clients referred from day treatment to outpatient aftercare for continuation in biweekly individual psychotherapy.

The state hospital admitting office finally informed this boarding home operator that legally, involuntary rehospitalization was determined on the basis of suicidal or homicidal threat to life, not behavioral difficulties or no longer wanting to put up with a particular client resident in the home. It was reported that in one incident, in order to circumvent this technicality, this AFC operator allegedly dropped off the offending client in the hospital parking lot and drove away.

As would be expected from these clients, after the first two rehospitalizations, the other residents in the home expressed their fears that they would be the next to go, and would no longer be able to continue in the program. They were allegedly told by this operator that "Mental Health" had nothing to do with the way she

ran her home; they were told not to discuss what went on in the home with the mental health staff, although she persistently pressured clients about what was said at the day center. This particular home operator had once commented to the writer that her fantasy was to run her own mental hospital.

It was alleged that this home operator manipulated client medication in accordance with her decision that the clients needed more medication. There were several incidents on record in which she had argued with the CHM psychiatrist about increasing medication dosages even though he had insisted that the dosage was already at the upper limits of safety. Like other boarding home operators, she began taking some of the clients to a general practitioner for medication.

There were other alleged incidents involving boarding home operators, such as persistent threats of rehospitalization for disciplinary purposes, physically threatening clients, religious pressures to accept the fundamentalist beliefs of the home operator, and instructing clients in what they should and should not feel about their family members, as well as very idiosyncratic "interpretations" by homeowners to clients based on their prying into, and sometimes challenging, what was said in group or individual psychotherapy at the day center. These reported incidents involving

board and care homes would not surprise any therapist who has worked directly with such clients in the mental health system.

In response to the repeated complaints of the difficulties in managing and transporting clients made by the one particular AFC homeowner, and threats by her to shut down her home, the agency pursued a constructive attempt with a liaison from the state hospital to secure a double payment contract for this home with the Department of Mental Health matching funds with Social Services and Social Security payments.

However, when this AFC operator persisted with covert threats to not encourage clients to attend day treatment or medication clinic, the agency director and larger administrative system decided to file a complaint with Social Services on behalf of the clients (this was not the first complaint filed against a boarding home by Mental Health on behalf of clients' welfare. It would be instructive if these complaints could be reviewed by some legislative task force on the treatment of mental patients in the community).

The ensuing battle between this homeowner and Community Mental Health involving the Department of Social Services had a very ironic resolution. By one of those familiar but always inexplicable twists of administrative politics, the day treatment staff were

first told that the administration would handle the problems with this homeowner, and to continue the operation of the program as smoothly as possible; to being informed that the problems at that home were probably due to the clients becoming "too upset" by psychotherapy. It had been decided that the day treatment staff should discontinue intensive psychotherapy and redirect the program to "social work-rehabilitation" by the agency director.

Apparently, in order to enforce the change in policy, non-day treatment staff entered group therapy and tape recorded sessions. All individual sessions with clients were to be tape recorded and reviewed by the agency director. One does not need extensive experience in group psychotherapy or psychotherapy with psychotics to understand how these sudden and dramatic changes were probably perceived by the clients. In fact, it would be hard to imagine a more effective and covert way of sabotaging therapeutic trust and security with these clients.

The shared stress and sense of obliquity for the clients and day treatment staff was managed in the best interests of the clients. It was hoped that the period of treatment would have some lasting benefits. The day center staff and other staff members gradually

resigned from the agency in relation to this administrative scapegoating.

In retrospect, it is tempting to speculate about the role of politics and Kleinian dynamics (Klein, 1957) in these series of events resulting in the termination of an experimental day treatment program. Again, this is another instance of "the tendency for administrative decisions to be made on political rather than evidential bases" (Karon and VandenBos, 1981).

Dommermuth and Bucher (1974) have discussed the problems of program development within the Community Mental Health system:

> All too often trainees of other types [alternative models of treatment] are later hired to administrate and plan these innovative attempts, a situation for which their chances of survival are slim. The positions often require responses of a political nature that are beyond the capabilities of these young professionals. Furthermore, they are often asked to act using conceptual armamentarium they do not fully understand, such as the sharp delineation of mental health care for a specific catchment area using public health concepts of primary, secondary, and tertiary treatment.
>
> The consequences of such involvement is often undesirable and unanticipated for both the mental health staff members and the community needing their services. It can result in value shifts that restrict freedom in terms of treatment choices and the autonomy of the young professionals involved. It may eventually lead to a stress on political skills to the relative neglect of service skills. Lastly, it is conceivable that such practices may perpetuate differential treatment patterns,

> an evil most community mental health practitioners hope to eliminate (p. 156).

Obstacles for Psychotherapeutic Day Treatment

The most serious and persistent obstacles encountered in attempting to provide psychotherapeutic day treatment for chronic aftercare clients were:

(1) The strong resistance within Community Mental Health to providing psychotherapy for psychotic patients, based upon rigid institutional adherence to an exclusively organic-medication model of functional psychoses that excludes other models and methods of treatment. As noted by Mosher (Gunderson and Mosher, 1975), "Psychotherapy cannot operate independently of the institution's prevailing value system(s)." There appeared to be a rigidified institutional insistence upon chronic high "maintenance" levels of medication for clients, and stubborn resistance to the evidence that psychotropic medication can be reduced in relation to symptomatic improvement (e.g., Karon and VandenBos, 1981) or may not even be necessary in an active psychosocial treatment program (e.g., Gunderson, 1977, 1979), in addition to the more well-known evidence of significant subgroups of medication non-responders, and the serious long-term effects and symptomatic side effects of chronic maintenance medication.

(2) The second most serious obstacle to treatment process and outcome was the ambivalent and tenuous cooperation of the boarding home operators. In general, the AFC operators were supportive of clients spending day hours at the center. However, ambivalence and jealousy about the therapeutic relationship of the clients to the day center appeared to have led some operators to place clients in the covert bind of having to express preferences and gratitudes to the operator. More overtly, AFC operators might intrude into psychotherapeutic process and question or contradict the interventions of the therapists or, worse, attempt to make dynamic "interpretations" to clients themselves.

There was also a general resistance, based upon previous experience with clients receiving only medication and having medication increased for management, to the lowering of medication in response to evidence of symptomatic improvement. The impression of medication seemingly conveyed by the AFC operators was that medication should be increased in response to client "upset" (the "more the better" notion). Several incidents were seen in which day center clients were taken to private general practitioners because the CHM psychiatrist refused to comply with the wishes of the AFC operator; and of situations in which the AFC operators allegedly

increased medication dosages themselves in response to client "upset."

(3) The third major problem encountered in attempting to provide psychotherapeutic day treatment had to do with the handling and resolution of client anger in any treatment of psychosis, and the testing of the credibility and durability of the "holding environment."

In the Boston psychotherapy research project (Grinspoon, Ewalt, and Shader, 1972) positive outcome was found to be significantly related to therapist focus on anger. However, those unfamiliar with the psychotherapeutic treatment and recovery of psychotic patients may continue to regard the emergence of affect in a formerly blunted and withdrawn "good patient" who causes no problems, as a sign of symptomatic worsening or to unreasonably "form the erroneous impression that the psychological treatment damages the patient" (Benedetti [Laurin and Doucet, 1969]).

Unfortunately, the average board and care home for psychiatric patients, like it or not, is, typically and unfortunately, not managed with the level of skills, patience or goals exemplified by a Jackie Schiff (1970).

The typical board and care home is, realistically, a business enterprise, not a treatment facility. The average home operator, in our experience, is a

divorced or widowed woman supporting herself. Properly cared for discharged psychiatric patients who are not living with their families is not an easy way to make a living. She need have no particular skill or experience in working with severely disturbed clients, but is paid to feed and house them. Since there is a severe shortage of openings and homes, client slots for placement are at a premium. If a resident in the home becomes a problem, the most expedient solution is to medicate, threaten or return the resident to the hospital with the intention of obtaining cooperation or replacement with a more compliant and less problematic resident (c.f., Van Patten and Spar, 1979).

By contrast, the results that have been reported in studies of residential treatment facilities staffed by professional and trained paraprofessional staffs (e.g., Berke, 1979; Mosher and Menn, 1978) are very encouraging and could suggest that residential treatment facilities may be more effective and cost efficient than the present situation of subsidizing both Community Mental Health centers, programs and staffs, and residential board and care homes. It may even be found, as our experience suggested, that the marked differences in orientation towards the clients and long-term goals in these two client settings (the board and care home versus a psychotherapeutic day treatment program) may

be damaging to the clients, based on contradictory messages, expectations, and goals; which ultimately would be counter-therapeutic for the clients. Most therapists do not reward clients for being passive-dependent internalizers of real feelings or "good helpers," or regressed "babies" we can take care of; and if we did, we would not help them. What is needed is a living facility with similar therapeutic values.

The aftercare and day treatment services observed by the writer in five local CMH centers, if representative, raise serious questions about the quality of "treatment" that is being provided to aftercare clients who are typically being "treated" by bachelor level staff with minimal or irrelevant formal training or adequate supervision in any particular treatment modality or model of psychosis. The paradox that the most terrified and "sick" patients are typically being treated by the least trained and experienced therapists seems incomprehensible.

Flaws in this Study

The major weaknesses of this study are small sample size of subjects in treatment, subject attrition, and lack of contrast group test data. The design of the study was initially within the parameters of a quasi-experimental time-series control group design

(Campbell and Stanley, 1963). Client assignment to the three treatment groups, however, was not randomized, but was based on hospital discharge and community placement availability variables that were not controlled.

Program comparison data were available for only demographic and length of stay in treatment data. The study lacked treatment measures for the two comparison treatment groups. Therefore, although the changes seem significant, it cannot be concluded rigorously that any changes found in the experimental treatment group are better or worse than changes which may have been found had the same assessments been made for the two comparison groups; or that such changes are not due to extraneous variables such as the passage of time. As noted by Campbell and Stanley (1963):

> Where controls are lacking in a quasi-experiment, one must, in interpreting the results, consider in detail the likelihood of uncontrolled factors accounting for the results. The more implausible this becomes, the more 'valid' the experiment.
>
> The more numerous and independent the ways in which the experimental effect is demonstrated, the less numerous and less plausible any singular rival invalidating hypothesis becomes (p. 36).

Testings and ratings were made by the therapists, which contains a possible bias (c.f., Rogers et al., 1967). On one measure (VVT), the initial test was at approximately Time-2 for the other measures. Also,

unfortunately, one of the intended measures (Rorschach) had to be abandoned after baseline testing because the data disappeared. Complete planned evaluations at approximately six month intervals for two years were not possible because of external problems that caused subject attrition, and finally, the abrupt termination of the experimental day treatment program and evaluation, at 15 months.

Conclusion

The study presented was an attempt to evaluate the effectiveness of an experimental trial of psychoanalytically oriented psychotherapeutic day treatment for chronic psychiatric patients. It provides evidence of increased attendance and length of stay in treatment, and of a decrease in thought disorder and of a behavioral improvement, although the latter two findings lack a comparison group.

Evaluation of differential treatment outcomes in this study was made tenuous by the mixed diagnostic categories of the client sample, and by the small sample size. Nevertheless, the following clinical observations are presented for consideration.

(1) Psychoanalytically oriented psychotherapeutic day treatment focused on the establishment of relatedness and the reduction of anxiety seemed appropriate for these chronic psychiatric

patients generally, across diagnostic categories, with the following more specific observations;

(2) Generally, positive treatment effects seemed to be positively related to client intelligence and motivation for recovery, and negatively related to age and chronicity.

(3) Clients with primary or secondary diagnoses of Organic Brain Syndrome or Minimal Brain Dysfunction had the most difficulty with psychotherapeutic treatment; these clients tended to be emotionally labile, unreflective, impulsive, and to have fixed perseverative behavioral patterns and poor tolerance of stress and frustration. Half of the clients rehospitalized for behavioral altercations had secondary diagnoses of organic brain syndrome.

(4) Clients with treatment histories of ECT and/or lengthy hospitalization seemed to be least motivated for psychotherapeutic treatment; these clients were typically obsequious and avoided or denied any negative affect in themselves or others.

(5) Emotionally reactive clients (e.g., schizoaffective, hebephrenic) seemed to be comparatively more involved in therapeutic process, and showed more overt symptomatic improvement than affectively blunted, paranoid, and withdrawn clients.

(6) The autism of these chronic clients was manifested in the relative lack of group cohesiveness or process. There was minimal interaction between the clients. Most of the client's interaction was directed towards the staff.

(7) "Acting-out" in these clients typically took the form of an infantile temper tantrum, attention seeking, or rebelliousness-stubbornness. It is possible that this regressive "acting-out" versus

> more malignant acting-out (assaultiveness, self-destructive acts, sexual aggressiveness) was fostered by the therapeutic regression in a psychoanalytically oriented treatment milieu.

While psychotherapeutic treatment of psychotic individuals in the present study, and in the broader psychotherapeutic and psychosocial treatment outcome research literature, has shown evidence of significant improvement in functioning within six months of treatment on outcome measures, the effectiveness of these treatments has previously been shown to be adversely affected by drugs, institutional opposition, and counter-therapeutic resistance to treatment from the patient's environmental figures.

Thus, the attempt to provide psychotherapeutic treatment for aftercare clients, as in this psychotherapeutic model of day treatment within the Community Mental Health system (an institutional system in which the prevailing model of treatment for aftercare clients is an organic-medication model as opposed to psychotherapy for non-psychotic and non-aftercare clients) is encumbered, and possibly not viable, because such attempts are in fundamental opposition to the dominant attitudes toward the management of these particular clients within the mental health system and community placement programs.

There continues to be an urgent need for research on treatment approaches for mental illness that can lead to the development of theory and rational practice of mass treatment for the considerable proportion of the population that requires such treatment (e.g., The President's Commission on Mental Health Task Panel Reports [1978]). Meanwhile, as noted by Stein and Test (1978) in their review of community treatment of chronic psychiatric patients, community treatment programs have been implemented on a widespread basis; but "unfortunately, most such programs were neither well grounded in a theoretical framework nor based on evidence of demonstrated effectiveness." Even worse, as emphasized by Dommermuth and Bucher (1974), "People in the lower strata of our society have the greatest need for these services and receive the least and, at times, possible damaging, care."

SUMMARY

A psychoanalytically oriented day treatment program was developed and evaluated over 18 months. It was hypothesized that chronic psychiatric patients in psychotherapeutic day treatment would show improvement on process-outcome measures of psychological change: Thought (cognition), Affect, and Object Relations/Interpersonal Behavior, which were conceptualized as fundamental elements of change produced by psychotherapeutic treatment. In addition, evaluation of treatment was to be based upon length of stay in psychotherapy, and frequency of attendance, which were related to program effectiveness and motivational variables in psychotherapeutic treatment of such clients.

The experimental psychoanalytically oriented day treatment program was compared with two comparable and concurrent day treatment programs on demographic variables, and length of stay and frequency of program attendance statistics. Comparison process-outcome test measures of psychological change and rehospitalization data, although originally planned, were ultimately not made available from these two comparison day treatment programs.

Overall, clients in psychoanalytically oriented day treatment attended significantly more DAYS, MONTHS, and DAYS PER MONTH, than clients at the two comparison programs.

The total rehospitalization rate for clients in psychoanalytically oriented day treatment was 12 rehospitalizations over 18 months (12/36=33%); the rehospitalization rate for Group I clients, who were also evaluated on process-outcome measures, was eight rehospitalizations (8/17=47%); the rehospitalization rate for Group II clients, who were older, poorer prognosis and more chronic psychiatric patients not evaluated on process-outcome measures as part of the study, was four rehospitalizations (4/19=21%) over the 18 months of the program. These rehospitalization figures compare favorably with available published base rate figures for comparable patients in treatment.

Experimental Group I male and female clients showed a marked and statistically significant improvement in thought disorder at 15 months on the Feldman-Drasgow Visual-Verbal Test, the most direct measure of psychotic thought disorder.

A near significant reduction on the Lie scale and the Hypochondriasis scale of the MMPI was found for the total group at six months. Males showed a significant increase on the Paranoia scale and the Goldberg

Psychotic Index at six months, accompanied by a trend toward reduction on the Lie scale. Females showed a significant reduction on two MMPI measures of anxiety; the Taylor Manifest Anxiety scale and the Psychasthenia scale; with a significant increase on the Barron Ego Strength scale, at six months. But the 12 month MMPI data suggested a regression in the MMPI scores; there were no significant changes from pre-treatment scores evident for the total sample, or male and female subgroups, at the 12 month comparison. The equivocal MMPI findings for males compared with females, and the overall lack of findings based on the MMPI were considered in relation to psychotherapeutic process variables, uncontrolled disruptive environmental variables which may have interfered with the treatment, and the lack of sensitivity of the MMPI to process-outcome changes produced by psychotherapeituc treatment of chronic psychiatric patients.

The Day Therapy Data Base staff ratings of observable client behavior showed significant improvement on ratings of social skills, problem behavior, and task-oriented/performance skills at 3, 6, 9, and 12 month ratings; ratings of sensory-motor performance and activities of daily living skills showed a significant improvement only on the nine month ratings.

REFERENCES

REFERENCES

Alexander, F. Fundamentals of psychoanalysis. New York, 1963.

Alexander, F. Psychosomatic medicine: Its principles and applications. New York: Norton, 1950.

Alpert, M., and Friedhoff, A.J. An un-dopamine hypothesis of schizophrenia. Schizophrenia Bulletin, 1980, 6(3), 387-390.

Anthony, W.A., Cohen, M.R., and Vitalo, R. The measurement of rehabilitation outcome. Schizophrenia Bulletin, 1978, 4(3), 365-383.

Appenzeller, O. The autonomic nervous system. (2nd ed., rev.). Amsterdam: North-Holland, 1976.

Arieti, S. Interpretation of schizophrenia. (2nd ed.) New York: Basic Books, 1974.

Arieti, S. Psychotherapy of severe depression. American Journal of Psychiatry, 1977, 134(9), 864-867.

Arnold, M.B. (ed.). The nature of emotion. Baltimore: Penguin Books, 1968.

Bak, R.C. Masochism in paranoia. Psychoanalytic Quarterly, 1946, 15, 285-301.

Baldessarini, R.J., and Lipinski, J.F. Risks versus benefits of antipsychotic drugs. New England Journal of Medicine, 1973, 289, 427-428.

Bassuk, E., and Gerson, S. Deinstitutionalization and mental health services. Scientific American, 1978, 238(2), 46-53.

Bateson, G., Jackson, D., Haley, J., and Weakland, J. Toward a theory of schizophrenia. Behavioral Science, 1956, 1, 251-264.

Beard, J.H., Malamud, T.J., and Rossman, E. Psychiatric rehabilitation and long-term rehospitalization rates: the findings of two research studies. Schizophrenia Bulletin, 1978, 4, 622-635.

Bellak, L., and Loeb, L. (eds.). The schizophrenic syndrome. New York: Grune & Stratton, 1969.

Bellak, L. (ed.). Disorders of the schizophrenic syndrome. New York: Basic Books, 1979.

Bemporad, J., and Pinsker, H. Schizophrenia: the manifest symptomatology. In S. Arieti (ed.) American handbook of psychiatry. New York: Basic Books, 1975.

Benedetti, G. The handling of psychotic regression in individual psychotherapy. In P. Doucet and C. Laurin (eds.). Problems of psychosis: International colloquium on psychosis. Amsterdam: Excerpta Medica, 1971.

Berger, P.A., and Rexroth, K. Tardive dyskinesia: clinical, biological, and pharmacological perspectives. Schizophrenia Bulletin, 1980, 6(1), 102-116.

Berke, J.H. I haven't had to go mad here. London: Penguin Books, 1979.

Billig, O. Structures of schizophrenic forms of expression. Psychiatric Quarterly, 1970, 44(2), 187-221.

Bion, W.R. Notes on the theory of schizophrenia. International Journal of Psychoanalysis, 1954, 35, 113-118.

Birley, J.L.T., and Brown, G.W. Crises and life changes preceding the onset or relapse of acute schizophrenia: clinical aspects. British Journal of Psychiatry, 1970, 116, 327-333.

Bleuler, M. The offspring of schizophrenics. In R. Cancro (ed.), Annual review of the schizophrenic syndrome 1974-5. New York: Brunner/Mazel, 1976.

Bockoven, J.S., and Solomon, H.C. Comparison of two five-year follow-up studies: 1947-1952 and 1967-1972. American Journal of Psychiatry, 1975, 132, 796-801.

Bookhammer, R.S., Meyers, R.W., Schober, C.C., and Piotrowski, A.Z. A five-year follow-up study of schizophrenics treated by Rosen's "direct analysis": compared with controls. American Journal of Psychiatry, 1966, 123, 602-604.

Bowers, M.B. Biochemical processes in schizophrenia. Schizophrenia Bulletin, 1980, 6(3), 393-403.

Brandwin, M., Van Houten, W., and Ne, D. The continuing care clinic: outpatient treatment of the chronically ill. Psychiatry, 1976, 39, 102-117.

Brody, E.B., and Redlich, F.C. (eds.). Psychotherapy with schizophrenics. New York: International Universities Press, 1952.

Brody, M. Observations on direct analysis. New York: Vantage, 1959.

Brown, G.W., and Birley, J.L.T. Crisis and life changes and the onset of schizophrenia. Journal of Health and Social Behavior, 1968, 9, 203-214.

Bullard, D.M. (ed.). Psychoanalysis of psychotherapy. Selected papers of Frieda Fromm-Reichmann. Chicago: University of Chicago Press, 1959.

Burton, A. (ed.). Psychotherapy of the psychoses. New York: Basic Books, 1961.

Buss, A.H., and Lang, P.J. Psychological deficit in schizophrenia: I. Affect, reinforcement, and concept attainment. Journal of Abnormal Psychology, 1965, 70(1), 2-24.

Caffey, E.M., Galbrecht, C.R., and Klett, C.J. Brief hospitalization and aftercare in the treatment of schizophrenia. Archives of General Psychiatry, 1971, 24, 81-86.

Cameron, N. Personality development and psychopathology. Boston: Houghton Mifflin, 1963.

Campbell, D.T., and Stanley, J.C. Experimental and quasi-experimental designs for research. Chicago: Rand McNally, 1963.

Cancro, R. Thought disorder and schizophrenia. Diseases of the Nervous System, 1968, 29, 846-849.

Cancro, R. Clinical prediction of outcome in schizophrenia. Comprehensive Psychiatry, 1969, 10, 349-354.

Cancro, R. Prospective prediction of hospital stay in schizophrenia. Archives of General Psychiatry, 1969, 20, 541-546.

Cancro, R., Fox, N., and Shapiro, L.E. Strategic intervention in schizophrenia. New York: Behavioral Publications, 1974.

Cannon, W.B. Bodily changes in pain, hunger, fear and rage (2nd ed.). New York: Appleton, 1920.

Carpenter, W.T., McGlashan, T.H., and Strauss, J.S. The treatment of acute schizophrenia without drugs: an investigation of some current assumptions. American Journal of Psychiatry, 1977, 134(1), 14-20.

Carrington, P. Dreams and schizophrenia. Archives of General Psychiatry, 1972, 26, 343-350.

Chapman, L.J. Recent advances in the study of schizophrenic cognition. Schizophrenia Bulletin, 1979, 5(4), 568-580.

Chiland, C. (ed.). Long-term treatments of psychotic states. New York: Human Sciences Press, 1977.

Ciompi, L. Catamnestic long-term study of the course of life and aging of schizophrenics. Schizophrenia Bulletin, 1980, 6(4), 606-618.

Claghorn, J.L., Johnstone, E.E., Cook, T.H., and Itschner, L. Group therapy and maintenance treatment of schizophrenics. Archives of General Psychiatry, 1974, 31, 361-365.

Cole, J.O. A lack of controls. International Journal of Psychiatry, 1967, 4(2), 129-131.

Cousins, N. Anatomy of an illness. New York: Norton, 1979.

Crane, G.E. Clinical psychopharmacology in its 20th year. Science, 1973, 181, 124-128.

Dahlstrom, W.G., Welsh, G.S., and Dahlstrom, L.E. An MMPI handbook. Minneapolis: University of Minnesota, 1972.

Davanloo, H. (ed.). Short-term dynamic psychotherapy. New York: Jason Aronson, 1980.

Davis, J.M. Overview: maintenance therapy in psychiatry. I. schizophrenics. American Journal of Psychiatry, 1975, 133, 1237-1245.

Davis, J.M., Gosenfeld, L., and Tsai, C.C. Maintenance antipsychotic drugs do prevent relapse: a reply to Tobias and MacDonald. Psychological Bulletin, 1976, 83, 431-447.

Docherty, J.P., Van Kammen, D.P., Siris, S.G., and Marder, S.R. Stages of onset of schizophrenic psychosis. American Journal of Psychiatry, 1978, 135(4), 420-426.

Dommermuth, P.R., and Bucher, R. The psychotherapist in community mental health. In Roman, P.M., and Trice, H.M. (ed.s). The sociology of psychotherapy. New York: Jason Aronson, 1974.

Duffy, E. Activation and behavior. New York: Wiley, 1962.

Eissler, K.R. Notes upon defects of ego structure in schizophrenia. International Journal of Psychoanalysis, 1954, 35, 141-146.

English, O.S., Hampe, W.W., Bacon, C.L., and Settlage, C.F. Direct analysis of schizophrenia. Grune and Stratton, 1961.

Erikson, E.H. Childhood and society (2nd ed.). New York: Norton, 1963.

Erikson, E.H. Identity youth and crisis. New York: Norton, 1968.

Fairbairn, W.R.D. Object-relations theory of the personality. New York: Basic Books, 1952.

Farley, I.J., Price, K.S., McCullough, E., Deck, J.H.N., Hordynski, W., and Hornykiewicz, O. Norepinephrine in chronic paranoid schizophrenia: above-normal levels in limbic forebrain. Science, 1978, 200(28), 456-458.

Fenichel, O. The psychoanalytic theory of neurosis. New York: Norton, 1945.

Fenz, W.D., and Velner, J. Physiological concomitants of behavioral indices in schizophrenia. Journal of Abnormal Psychology, 1970, 76(1), 27-35.

Frankenhaeuser, M. Experimental approaches to the study of catecholamines and emotion. In L. Levy (ed.). Emotions--their parameters and measurement. New York: Raven Press, 1975.

Freud, A. The ego and the mechanisms of defense (rev. ed.). New York: International Universities Press, 1966.

Freud, S. Some points for a comparative study of organic and hysterical motor paralyses. Standard Edition, Vol. I. London: Hogarth Press, 1968 (originally published, 1893).

Freud, S. The neuro-psychoses of defense. Standard Edition, Vol. III. London: Hogarth Press, 1968 (Originally published, 1894).

Freud, S. The interpretation of dreams. New York: Avon Books, 1965 (originally published, 1900).

Freud, S. On psychotherapy. In Therapy and technique. P. Rieff (ed.). New York: Collier Books, 1963 (originally published, 1904).

Freud, S. The unconscious. In Collected Papers, Vol. IV. London: Hogarth Press, 1946 (originally published, 1915).

Freud, S. The problem of anxiety. New York: Norton, 1936.

Fromm-Reichmann, F. Principles of intensive psychotherapy. Chicago: University of Chicago Press, 1950.

Ganntt, L., and Schmal, M.S. Art therapy. Rockville: NIMH, 1974.

Gardos, G., and Cole, J.O. Maintenance antipsychotic therapy: is the cure worse than the disease? American Journal of Psychiatry, 1976, 133(1), 32-36.

Garmezy, N. Children at risk: the search for the antecedents of schizophrenia. Part I. Conceptual models and research methods. Schizophrenia Bulletin, 1974, 8, 14-90.

Gellhorn, E., and Loofbourrow, G.N. Emotions and emotional disorders. New York: Hoeber Medical Division, 1963.

Giovacchini, P.L. Treatment of primitive mental states. New York: Jason Aronson, 1979.

Glatt, C.T., and Karon, B.P. A Rorschach validation study of the ego regression theory of psychopathology. Journal of Consulting and Clinical Psychology, 1974, 42, 569-576.

Goffman, E. Asylums: essays on the social situation of mental patients and other inmates. New York: Anchor Books, 1961.

Goldberg, S.C., Schooler, N.R., Hogarty, G.E., and Roper, M. Prediction of relapse in schizophrenic outpatients treated by drug and sociotherapy. Archives of General Psychiatry, 1977, 34, 171-184.

Goldman, A.E. A comparative-developmental approach to schizophrenia. Psychological Bulletin, 1962, 59, 57-69.

Goldstein, M.J., Judd, L.L., Rodnick, E.H., and LaPolla, A. Psychophysiological and behavioral effects of phenothiazine administration in acute schizophrenics as a function of premorbid status. Journal of Psychiatric Research, 1969, 6, 271-287.

Goldstein, M.J. Premorbid, adjustment, paranoid status, and patterns of response to phenothiazine in acute schizophrenia. Schizophrenia Bulletin, 1970, 1(3), 24-37.

Goldstein, M.J., and Rodnick, E.H. The family's contribution to the etiology of schizophrenia: current status. Schizophrenia Bulletin, 1975, 14, 48-62.

Greenwald, H. (ed.). Active Psychotherapy. New York: Atherton, 1967.

Grinspoon, L., Ewalt, J.R., and Shader, R.I. Schizophrenia, pharmacotherapy, and psychotherapy. Baltimore: Williams and Wilkins, 1972.

Groen, J.J. The measurement of emotion and arousal in the clinical physiological laboratory and in medical practice. In L. Levy (ed.). Emotions--their parameters and measurement. New York: Raven Press, 1975.

Gruber, L. Group techniques for acutely psychotic inpatients. Group, 2(1), 31-39.

Gruzelier, J.H. Bilateral asymmetry of skin conductance orienting activity and levels in schizophrenis. Biological Psychology, 1973, 1, 21-41.

Gunderson, J.G. Drugs and psychosocial treatment of schizophrenia revisited. Journal of Continuing Education in Psychiatry, 1977, 12, 25-40.

Gunderson, J.G. The current metaphychology of schizophrenia. In J.G. Gunderson and L.R. Mosher (eds.). Psychotherapy of schizophrenia. New York: Jason Aronson, 1975.

Guntrip, H. Schizoid phenomena, object relations and the self. London: Hogarth Press, 1968.

Guy, W., Gross, M., Hogarty, G., and Dennis, H. A controlled evaluation of day hospital effectiveness. Archives of General Psychiatry, 1969, 20, 329-338.

Haier, R.J., Rosenthal, D., and Wender, P.H. MMPI assessment of psychopathology in the adopted-away offspring of schizophrenics. Archives of General Psychiatry, 1978, 35, 171-175.

Hamilton, L.A. May's conclusions are found to be generally confirmed by clinical experience. International Journal of Psychiatry, 1969, 8(4), 730-733.

Heller, K. Review of Rogers et al.'s 'the therapeutic relationship and its impact: a study of psychotherapy with schizophrenics.' Psychiatry, 1969, 32(3), 348-350.

Herz, M.I., Endicott, J., Spitzer, R.L., and Mesnikoff, A. Day versus inpatient hospitalization--a controlled study. American Journal of Psychiatry, 1971, 127, 1371-1382.

Herz, M.I., Spitzer, R.L., Gibbon, M., Greerspan, K., and Reibel, S. Individual vs. group aftercare treatment. American Journal of Psychiatry, 1974, 313, 808-812.

Hill, L.B. Psychotherapeutic intervention in schizophrenia. Chicago: University of Chicago Press, 1974.

Hogarty, G.E., Goldberg, S.C., and the Collaborative Study Group. Drug and sociotherapy in the aftercare of schizophrenic patients: one year relapse rates. Archives of General Psychiatry, 1973, 28, 54-64.

Hogarty, G.E., Goldberg, S.C., Schooler, N.R., and Ulrich, R.F. Drug and sociotherapy in the aftercare of schizophrenic patients.II. Two year relapse rates. Archives of General Psychiatry, 1974, 31, 606-618.

Horowitz, M.J. Intrusive and repetitive thoughts after experimental stress: a summary. Archives of General Psychiatry, 1975, 32, 1457-1463.

Huttunen, M.O., and Niskanen, P. Prenatal loss of father and psychiatric disorders. Archives of General Psychiatry, 1978, 35, 429-431.

Jacob, T. Family interaction in disturbed and normal families: a methodological and substantive review. Psychological Bulletin, 1975, 82, 33-65.

Jacobs, S., and Meyers, J. Recent life events and acute schizophrenic psychoses: a controlled study. Journal of Nervous and Mental Disease, 1976, 162, 75-87.

Janis, I.L. Effects of fear arousal on attitude change: recent developments in theory and experimental research. In L. Berkowitz (ed.). Advances in experimental social psychology. New York: Academic Press, 1967.

Janowsky, D.S., El-Yousef, M.K., Davis, J.M., and Sekerke, H.J. Provocation of schizophrenic symptoms by intravenous administration of methylphenidate. Archives of General Psychiatry, 1973, 28, 185-191.

Janowsky, D.S., and Davis, J.M. Methylphenidate, dextroamphetamine, and levamfetamine. Effects on schizophrenic symptoms. Archives of General Psychiatry, 1976, 33, 304-308.

Karon, B.P. The psychoanalytic treatment of schizophrenia. In P.A. Magaro (ed.). The construction of madness. New York: Pergamon, 1976.

Karon, B.P. The resolution of acute schizophrenic reactions: a contribution to the development of non-classical psychotherapeutic techniques. Psychotherapy: Theory, Research, and Practice, 1963, 1, 27-43.

Karon, B.P., and VandenBos, G.R. Clinical status change over 20 months of treatment. A paper presented at the Society of Psychotherapy Research convention held in Chicago, Illinois, June 1970.

Karon, B.P., and VandenBos, G.R. Issues in current research on psychotherapy vs. medication in treatment of schizophrenics. Psychotherapy: Theory, Research, and Practice, 1975, 12(2), 143-148.

Karon, B.P., and VandenBos, G.R. Psychotherapeutic technique and the economically poor patient. Psychotherapy: Theory, Research, and Practice, 1977, 14, 169-180.

Karon, B.P., and VandenBos, G.R. Psychotherapy of schizophrenia: treatment of choice. New York: Jason Aronson, 1981.

Karon, B.P., and VandenBos, G.R. Psychotherapy with schizophrenics requires relevant training. Schizophrenia Bulletin, 1978 4(4), 480-483.

Karon, B.P., and VandenBos, G.R. The consequences of psychotherapy for schizophrenic patients. Psychotherapy: Theory, Research, and Practice, 1972, 9, 111-120.

Karon, B.P., and VandenBos, G.R. Thought disorder in schizophrenia, length of hospitalization, and clinical status ratings. The Journal of Clinical Psychology, 1974, 30, 264-266.

Kayton, L. Clinical features of improved schizophrenics. In J.G. Gunderson and L.R. Mosher (ed.). Psychotherapy of schizophrenia. New York: Jason Aronson, 1975.

Keith, S.J., Gunderson, J.G., Reifman, A., Buchsbaum, S., and Mosher, L.R. Special report: schizophrenia 1976. Schizophrenia Bulletin, 1976, 2(4), 509-565.

Kelly, D.H.W., and Walter, C.J.S. The relationship between clinical diagnosis and anxiety, assessed by forearm blood flow and other measurements. British Journal of Psychiatry, 1968, 114, 611-626.

Kelly, D., Brown, C.C., and Shaffer, J.W. A comparison of physiological and psychological measurements on anxious patients and normal controls. Psychophysiology, 1970, 6(4), 429-441.

Kernberg, O. Borderline conditions and pathological narcissism. New York: Jason Aronson, 1975.

Kernberg, O. Object relations theory and clinical psychoanalysis. New York: Jason Aronson, 1976.

Kernberg, P.F. Childhood schizophrenia and autism: a selective review. In L. Bellak (ed.). Disorders of the schizophrenic syndrome. New York: Basic Books, 1979.

Kety, S. Heredity and environment. In J.C. Shershow (ed.). Schizophrenia: science and practice. Cambridge: Harvard University Press, 1978.

Kielhoz, P. Psychopharmacology measurement of emotion in medical practice. In L. Levy (ed.). Emotions--their parameters and measurement. New York: Raven Press, 1975.

King, C.E., and Goldstein, M.J. Therapist ratings of achievement of objectives in psychotherapy with acute schizophrenics. Schizophrenia Bulletin, 1979, 5(1), 118-129.

Kirk, S.A. Effectiveness of community services for discharged mental hospital patients. American Journal of Orthopsychiatry, 1976, 46, 646-659.

Klein, M. Envy and gratitude and other works 1946-1963. New York: Delta, 1975.

Klein, N.S. Synopsis of Eugen Bleuler's dementia praecox or the group of schizophrenias. New York: International Universities Press, 1952.

Knight, R.P. Introjection, projection, and identification. Psychoanalytic Quarterly, 1940, 9, 334-341.

Lacey, J.I., and Smith, R.L. Conditioning and generalization of unconscious anxiety. Science, 1954, 120, 1045-1052.

Lacey, J.I., Smith, R.L., and Green, A. Use of conditioned autonomic responses in the study of anxiety. In C.F. Reed, I.E. Alexander, and S.S. Tomkins (eds.). Psychopathology: a source book. Cambridge: Harvard University Press, 1963.

Laing, R.D. The divided self. London: Tavistock, 1959.

Lang, P.J., and Buss, A.H. Psychological deficit in schizophrenia: II. interference and activation. Journal of Abnormal Psychology, 1965, 70(2), 77-106.

Langer, D.H., Brown, G.L., and Docherty, J.P. Dopamine receptor supersensitivity and schizophrenia: a review. Schizophrenia Bulletin, 1981, 7(2), 208-224.

Lapidus, L.B., and Schmolling, P. Anxiety, arousal, and schizophrenia: a theoretical integration. Psychological Bulletin, 1975, 82(5), 689-710.

LaTorre, R.A. The psychological assessment of gender identity and gender role in schizophrenia. Schizophrenia Bulletin, 1976, 2(2), 266-285.

Leff, J.P. Schizophrenia and sensitivity to the family environment. Schizophrenia Bulletin, 1976, 2(4), 566-574.

Leff, J.P., and Wing, J.K. Trial of maintenance therapy in schizophrenia. British Medical Journal, 1971, 3, 559-604.

Levene, H.I., Patterson, V., Murphey, B.G., Overbeck, A.L., and Veach, T.L. The aftercare of schizophrenics: an evaluation of group and individual approaches. Psychiatric Quarterly, 1970, 44, 296-304.

Lidz, T. The origin and treatment of schizophrenic disorders. New York: Basic Books, 1973.

Lidz, T. Reply to Kety et al. Schizophrenia Bulletin, 1977, 3(4), 522-526.

Lipton, E.L., Steinschneider, A., and Richmond, J.B. The autonomic nervous system in early life. The New England Journal of Medicine, 1965, 273(3), 147-153.

Livingston, G. The role of activity in the treatment of schizoid or schizophrenic patients. In H. Greenwald (ed.). Active psychotherapy. New York: Atherton Press, 1967.

McCranie, E.W., and Mizell, T.A. Aftercare for psychiatric patients: does it prevent rehospitalization? Hospital and Community Psychiatry, 1978, 29(9), 584-587.

McDonald, R.L. The role of emotional factors in obstretric complications: a review. Psychosomatic Review, 1968, 30, 222-237.

Magaro, P., and Vojtisek, J. Embedded figure performance of schizophrenics as a function of chronicity, premorbid adjustment, diagnosis and medication. Journal of Abnormal Psychology, 1971, 77, 184-191.

Mahler, M.S. Perturbances of symbiosis and individuation in the development of the psychotic ego. In P. Doucet and C. Laurin (eds.). Problems of psychosis: International Colloquium on Psychosis. Amsterdam: Excerpta Medica, 1971.

Malmo, R.B., and Shagass, C. Physiological studies of reaction to stress in anxiety states and early schizophrenia. Psychosomatic Medicine, 1949, 11, 9-24.

May, P.R.A. Treatment of schizophrenia. New York: Science House, 1968.

May, P.R.A., and Tuma, A.H. A follow-up study of the results of treatment. Archives of General Psychiatry, 1976a and b, 33, 474-478 and 481-486.

Mednick, S.A. A learning theory approach to research in schizophrenia. Psychological Bulletin, 1958, 55, 316-327.

Mednick, B.R. Breakdown in high-risk subjects: familial and early environmental factors. Journal of Abnormal Psycnology, 1973, 83(3), 469-475.

Mednick, S.A., and Schulsinger, F. Studies of children at high risk for schizophrenia. In S.R. Dean (ed.). Schizophrenia: the first ten Dean award lectures. New York: MSS Information, 1973.

Meyer, R.G., and Karon, B.P. The schizophrenogenic mother concept and the TAT. Psychiatry, 1967, 30, 173-179.

Mintz, J., O'Brien, C.P., and Luborsky, L. Predicting the outcome of psychotherapy for schizophrenics. Archives of General Psychiatry, 1976, 33, 1183-1186.

Mitchell, K.M. An analysis of the schizophrenogenic mother concept by means of the TAT. Journal of Abnormal Psychology, 1968, 73, 571-574.

Mitchell, K.M. Social class and the schizophrenogenic mother concept. Psychological Reports, 1969, 24, 463-469.

Mosher, L.R., and Keith, S.J. Psychosocial treatment: individual, group, family, and community support approaches. Schizophrenia Bulletin, 1980, 6(1), 10-41.

Mosher, L.R., and Menn, A.Z. The surrogate "family," an alternative to hospitalization. In J.C. Shershow (ed.). Schizophrenia: science and practice. Cambridge: Harvard University Press, 1978.

Mueller, W.J. Avenues to understanding: the dynamics of therapeutic interactions. New York: Appleton-Century-Crofts, 1973.

Munro, A. Some psychiatric non-sequelae of childhood bereavement. British Journal of Psychiatry, 1969, 115, 305-311.

Naumberg, M. Dynamically oriented art therapy: its principles and practices. New York: Grune & Stratton, 1968.

Naumberg, M. Psychoneurotic art: its function in psychotherapy. New York: Grune & Stratton, 1953.

Naumberg, M. Schizophrenic art: its meaning in psychotherapy. New York: Grune & Stratton, 1950.

Nichols, N. The relationship between degree of maternal pathogenicity and severity of ego impairment in schizophrenic offspring. Unpublished doctoral dissertation, University of Michigan, 1970.

O'Brien, C.P., Hamm, K.P., Ray, B.A., Pierce, J.F., Luborsky, L., and Mintz, J. Group vs. individual psychotherapy with schizophrenics: a controlled outcome study. Archives of General Psychiatry, 1972, 474-478.

Offenkrantz, W. Multiple somatic complaints as a precursor of schizophrenia. American Journal of Psychiatry, 1962, 119, 258-259.

Paul, G.L., and Lentz, R.J. Psychosocial treatment of chronic mental patients: milieu vs. social learning programs. Cambridge: Harvard University Press, 1977.

Paul, G.L., Tobias, L.L., and Holly, B.L. Maintenance psychotropic drugs in the presence of active treatment programs. Archives of General Psychiatry, 1972, 27, 106-115.

Powdermaker, F., and Frank, J. Group psychotherapy. Cambridge: Harvard University Press, 1953.

Rabin, A.I., and Winder, C.L. Psychological studies. In L. Bellak and L. Loeb (eds.). The schizophrenic syndrome. New York: Grune & Stratton, 1969.

Rabin, A.I., Doneson, S.L., and Jentons, R.L. Studies of psychological functions in schizophrenia. In L. Bellak (ed.). Disorders of the schizophrenic syndrome. New York: Basic Books, 1979.

Rappaport, M., Hopkins, H.K., Hall, K., Belleza, T., and Silverman, J. Are there schizophrenics for whom drugs may be unnecessary or contraindicated? International pharmacopsychiatry, 1978, 13, 100-111.

Raskin, D. Milieu therapy re-examined. Comprehensive Psychiatry, 1976, 17(6), 675-701.

Rieder, R.O. Children at risk. In L. Bellak (ed.). Disorders of the schizophrenic syndrome. New York: Basic Books, 1979.

Riskin, J., and Faunce, E.E. An evaluative review of family interaction research. Family Process, 1972, 11, 365-456.

Rogers, C.R., Gendlin, E.T., Kiesler, D.J., and Truax, C.B. The therapeutic relationship and its impact: a study of psychotherapy with schizophrenics. Madison: University of Wisconsin Press, 1967.

Rogler, L.H., and Hollingshead, A.B. Trapped: families and schizophrenia. New York: John Wiley & Sons, 1965.

Rosen, J.N. Direct analysis. New York: Grune & Stratton, 1953.

Rosen, J.N. Psychotherapy and schizophrenia. International Journal of Psychiatry, 1969, 8(4), 748-752.

Rosenfeld, H.A. Psychotic states: a psychoanalytic approach. New York: International Universities Press, 1965.

Rubins, J.L. Five-year results of psychoanalytic therapy and day care for acute schizophrenic patients. American Journal of Psychoanalysis, 1976, 36, 3-26.

Scheflen, A.E. A psychotherapy of schizophrenia. Illinois: Charles C. Thomas, 1961.

Schiff, J. All my children. New York: Evans, 1970.

Searles, H. Collected papers on schizophrenia and related subjects. New York: International Universities Press, 1965.

Selye, H. Stress and disease. In C.F. Reed, I.E. Alexander, and S.S. Tomkins (eds.). Psychopathology: a source book. Cambridge: Harvard University Press, 1963.

Selye, H. The stress of life (rev. ed.). New York: McGraw-Hill, 1976.

Shattan, S.P., Dcamp, L., Fujii, E., Foss, G.G., and Wolff, R.J. Group treatments of conditionally discharged patients in a mental health clinic. American Journal of Psychiatry, 1966, 122, 798-805.

Sheldon, A. An evaluation of psychiatric aftercare. British Journal of Psychiatry, 1964, 110, 662-667.

Shershow, J.C. Schizophrenia: science and practice. Cambridge: Harvard University Press, 1978.

Shields, J. Summary of genetic evidence. In D. Rosenthal and S. Kety (eds.). The transmission of schizophrenia. Oxford: Pergamon Press, 1968.

Shields, J., and Gottesman, I.I. Obstetric complications and twin studies of schizophrenia: clarifications and affirmations. Schizophrenia Bulletin, 1977, 3(3), 351-354.

Snyder, S.H. Amphetamine psychosis: a "model" schizophrenia mediated by catecholamines. American Journal of Psychiatry, 1973, 130(1), 61-67.

Snyder, S.H., Banerjee, S., Yamamura, H.I., and Greenberg, D. Drugs, neurotransmitters, and schizophrenia. Science, 1974, 184, 1243-1253.

Sontag, L.W. War and the fetal-maternal relationship. Marriage and family living, 1944, 6, 3-4.

Spadoni, A.J., and Smith, J.A. Milieu therapy in schizophrenia. Archives of General Psychiatry, 1969, 20, 547-551.

Spitz, R.A. Hospitalism: an inquiry into the genesis of psychiatric conditions in childhood. Psychoanalytic Study of the Child, 1945, 1, 53-74.

Spitz, R. The first year of life. New York: International Universities Press, 1965.

Spohn, H.E., Lacoursiere, R.B., Thompson, K., and Coyne, L. Phenothiazine effects on psychological and psychophysiological dysfunction in chronic schizophrenics. Archives of General Psychiatry, 1977, 34, 633-644.

Spohn, H.E., and Patterson, T. Recent studies of psychophysiology in schizophrenia. Schizophrenia Bulletin, 1979, 5(4), 581-611.

Steinberg, H.R., and Durell, J.A. A stressful social situation as a precipitant of schizophrenic symptoms: an epidemiologic study. British Journal of Psychiatry, 1968, 114, 1097-1105.

Sue, S., McKinney, H., and Allen, D.B. Predictors of the duration of therapy for clients in the community mental health system. Community Mental Health Journal, 1976, 12, 365-375.

Sullivan, H.S. Schizophrenia as a human process. New York: Norton, 1962.

Sullivan, H.S. The interpersonal theory of psychiatry. New York: Norton, 1953.

Tarrier, N., Vaughn, C., Lader, M.H., and Leff, J.P. Bodily reactions to people and events in schizophrenics. Archives of General Psychiatry, 1979, 36, 311-315.

Test, M.A., and Stein, L.I. Community treatment of the chronic patient: research review. Schizophrenia Bulletin, 1978, 4(3), 350-364.

Tompkins, S.S. Affect, imagery, consciousness (2 vols.). New York: Springer, 1963, 1964.

Trunell, T.L. The absent father's children's emotional disturbances. Archives of General Psychiatry, 1968, 19, 180-188.

Tuma, A.H., and May, P.R.A. Psychotherapy, drugs and therapist experience in the treatment of schizophrenia: a critique of the Michigan State Project. Psychotherapy: Theory, Research and Practice, 1975, 12(2), 138-142.

Vaillant, G.E. Prognosis and the course of schizophrenia. Schizophrenia Bulletin, 1978, 4(1), 20-24.

VandenBos, G.R., and Karon, B.P. A new therapist personality dimension related to therapeutic effectiveness. Journal of Personality Assessment, 1971, 35, 252-260.

Van Dyke, J.L., Rosenthal, D., and Rasmussen, P.V. Electrodermal functioning in adopted-away offspring of schizophrenics. Journal of Psychiatric Research, 1974, 10, 199-215.

Van Putten, T. Milieu therapy: contraindications? Archives of General Psychiatry, 1973, 29, 640-643.

Van Putten, T., and Spar, J. The board-and-care home: does it deserve a bad press? Hospital and Community Psychiatry, 1979, 30(7), 461-464.

Venables, P.H., and Wing, J.K. Level of arousal and the subclassification of schizophrenia. Archives of General Psychiatry, 1962, 7, 114-119.

Washburn, S., Vannicelli, M., Longabaugh, R., and Schoff, B.J. A controlled comparison evaluation of psychiatric day treatment and inpatient hospitalization. Journal of Clinical and Consulting Psychology, 1976, 44, 665-675.

Waskow, I.E., and Parloff, M.B. Psychotherapy change measures: report of the clinical research branch outcome measures project. Washington, D.C. U.S. Government Printing Office, 1975.

Whitaker, C. (ed.). Psychotherapy of chronic schizophrenic patients. Boston: Little, Brown & Co., 1958.

Wilder, J.F., Levin, G., and Zwerling, J. A two-year follow-up evaluation of acute psychotic patients treated in a day hospital. American Journal of Psychiatry, 1966, 112, 1095-1101.

Wohlberg, L.R. The technique of psychotherapy (3rd ed., 2 vols.). New York: Grune & Stratton, 1977.

Wynne, L.C., Cromwell, R.L., and Matthysse, S. (eds.). The nature of schizophrenia: new approaches to research and treatment. New York: John Wiley & Sons, 1978.

Wynne, L., and Singer, M. Thought disorder and family relations of schizophrenics. Archives of General Psychiatry, 1963, 191-206.

Wynne, L.C., Singer, M.T., and Toohey, M.L. Communication of the adoptive parents of schizophrenics. In J. Jorstad and E. Ugelstad (eds.). Schizophrenia 75: psychotherapy, family studies, research. Oslo: Universitetsforlaget, 1976.

Yalom, I.D. The theory and practice of group psychotherapy. New York: Basic Books, 1970.

Zetzel, E.R. The usefulness--and limitations--of the phenothiazines. International Journal of Psychiatry, 1967, 4(2), 138-139.

APPENDIX A

APPENDIX A

THEORETICAL INTEGRATION: PSYCHODYNAMIC AND NEUROPHYSIOLOGICAL COROLLARY MECHANISMS IN SCHIZOPHRENIA

Introduction

Clinical experience and experimental evidence suggests that comparatively high levels of anxiety are a pathognomonic finding in schizophrenic disorders (Kelly and Walter, 1968). Studies have demonstrated high correlations between measures of anxiety and physiological concomitants of anxiety in anxious versus less-anxious psychiatric patients and controls (Kelly and Walter, 1968; Kelly, Brown, and Shaffer, 1970).

Psychophysiological studies of high-risk offspring, preschizophrenics, and schizophrenics, compared with controls have consistently demonstrated abnormalities in indices of psychophysiological autonomic "arousal" in these subjects (Fenz and Velner, 1970; Garmezy, 1974; Gruzelier, 1973; Lang and Buss, 1965; Spohn and Patterson, 1979; Venables and Wing, 1962; and Zahn, Carpenter, and McGlashan, 1981).

A corollary relationship has been suggested between psychodynamic anxiety and psychophysiological

arousal (Groen, 1975; Kelly and Walter, 1968; Lapidus and Schmolling, 1975; and Mednick, 1958), which could support a psycho-somatic mechanism or process in schizophrenia.

The theory for, and evidence of, a psycho-somatic model in schizophrenia is presently unsystematized, although there exists scattered and preliminary empirical evidence that could support such an etiological hypothesis. It is the purpose of this paper to review evidence that could support the hypothesis of a psycho-somatic model in the etiology and functional dynamics of at least some schizophrenic psychotic reactions.

Psychodynamics: The Pathogenic Role of Anxiety in Schizophrenia

Clinical investigators (Arieti, 1974; A. Freud, 1966; Burton, 1961; Fairbairn, 1952; Fromm-Reichmann, 1950; Giovacchini, 1979; Gunderson and Mosher, 1975; Guntrip, 1968; Karon and VandenBos, 1981; the Kleinians [e.g., Rosenfeld, 1965]; Lidz, 1973; Mahler, 1971; Searles, 1965; and Sullivan, 1953, 1962; among many others) have long emphasized the dynamic relationship between maternal anxiety and infantile anxiety as a pathogenic or teratogenic developmental factor in the etiology of schizophrenic disorders.

Recently, it has been suggested that the pathogenic role of critical environmental variables may even include fetal development in utero in exposure to maternal stress and anxiety physiology as it impinges upon the fetus (Huttunen and Niskanen, 1978; Lipton, Steinschneider, and Richmond, 1965; McDonald, 1968; Sameroff [Garmezy, 1974]; and Sontag, 1944). This is an area of study that unfortunately has not received serious enough consideration or adequate attention in etiological investigations.

An ingenious retrospective epidemiological study using the Finnish population register (Huttunen and Niskanen, 1978) tested the role of maternal stress during pregnancy on offspring psychopathology. The study compared individuals whose fathers had died during their offspring's term in utero to a control group of individuals whose fathers had died during the first year of infancy. Death of husband was operationalized as one of the most intensive maternal stressors.

Huttunen and Niskanen (1978) report that:

> The number of diagnosed schizophrenics treated in psychiatric hospitals and the number of persons committing crimes were significantly higher in the index than in the control group. The incidence of alcoholism and personality disorders was relatively high in both groups. The index psychiatric cases had a low frequency of birth complications, whereas those of the control group were high.

> The results suggest that especially during months 3 to 5 and 9 to 10 of pregnancy, maternal stress may increase the risk of the child for psychiatric disorders, perhaps mediated through the "inborn temperament" of the child (p. 429).

The findings of Huttunen and Niskanen (1978) support the hypothesis of a direct biological effect of maternal stress (which could also be conceptualized as maternal anxiety physiology) during pregnancy upon fetal development and "inborn temperatment," as well as supporting the pathogenic role of the early infantile environment via the psychological transactional effects of maternal anxiety (review by Garmezy, 1974), depression (review by Garmezy, 1974), and loss of father (Munro, 1969; Trunell, 1968), upon the child's personality development and increased risk of subsequent psychopathology and stress vulnerability. Huttunen and Niskanen conclude that, "the finer differentiation of the in utero environment, maternal stress, and subsequent development bears on the interpretation of current studies of the genetics of psychiatric disorders, as well as ultimate concerns with prophylaxis."

In the well-known longitudinal high-risk project reported by Mednick and Schulsinger (1973), very similar uncontrolled, critical "pathogenic" environmental variables correlated with risk status, and

presumably unrelated to genetics, were found. B. Mednick (1973) reported that:

> (a) The mothers of the subjects in the breakdown group experienced more emotional stress during their pregnancies than did the mothers of the improved group.
>
> (b) The subjects in the breakdown group suffered loss of mother at an earlier age and tended significantly not to acquire a substitute mother [these children were raised in children's homes or by their fathers].
>
> (c) The breakdown group tended to have mentally ill fathers as well as schizophrenic mothers. There were no fathers hospitalized for mental illness in the improved group (p. 469).

In a review of Mednick and Schulsinger (1973) project data, Rieder (1979) points out that the mothers of the schizophrenic group were more frequently unmarried, and that only two out of the 14 schizophrenics had been raised in an intact family. Such findings seem more supportive of the developmental etiological theory proposed by Lidz (1973, 1977, 1978), than supportive of a vague and unspecified genetic X-factor in the etiology of schizophrenia. Rieder (1979) notes that comparisons between the schizophrenic males and females suggest that differential factors may affect the etiology of schizophrenia in males and females, but that such predictors remain obscure.

There is accumulating empirical evidence suggesting more specific pathogenic critical environmental variables in schizophrenogenic families (Goldstien and Rodnick, 1975; Karon and VandenBos, 1981; Jacob, 1975; Leff, 1976; Lidz, 1973, 1978; Nichols, 1970; Mitchell, 1968; Riskin and Faunce, 1972; and Wynne, Toohey, and Doane, 1979). These studies provide evidence of such pathogenic familial structural and transactional variables as amorphous and fragmented communication deviance/transactional style deviance; parental marital skew, schism, and emotional divorce; and so-called "expressed emotionality;" that is, criticism, hostility, overinvolvement, guilt induction, and intrusiveness. Goldstein and Rodnick (1975) also cite research on parameters of family structure that appear to differentiate the families of origin of good and poor premorbid schizophrenics, and "corrective" factors which mitigate pathogenic variables and lessen the likelihood of psychotic developments.

Karon and VandenBos (1981) have suggested that transactional "pathogenesis" can be understood as an unconscious defense against anxiety in the parent or parent's relationship to the preschizophrenic. This "pathogenesis," despite its often subtle manifestations, is pervasive and damaging psychologically to the emotional, cognitive, and social development of the child,

predisposing to anxiety, insecurity, confusion, alienation, and characteristic developmental maladaptations and developments that increase vulnerability to environmental stressors and risk of psychopathology.

The evidence from these studies suggests that "schizophrenia spectrum" psychopathology is predicted by the degree of early infantile stress and trauma, possibly including the fetal environment. High levels of childhood reactive anxiety (c.f., Garmezy, 1974) may lead to pathognomonic personality maladaptations such as the schizoid, psychopathic, or stormy personalities (Arieti, 1974; Goldstein and Rodnick, 1975), or worse, to autism and childhood schizophrenia (Kernberg [Bellak, 1979]), and even to child mortality (Garmezy, 1974; Spitz, 1945).

Thought Disorder: Cognitive Dysfunctions Related to Anxiety

Karon (1963, 1976), Lidz (1973), and Wynne and Singer (1963), based upon empirical findings, have suggested a relationship between anxiety and thought disorder in schizophrenia, as well as a relationship between anxiety and communication/transactional disturbances demonstrated in families of schizophrenics.

Harrow and Quinlan (Chapman, 1979) using several measures of thought disorder have also found that thought disorder is <u>not</u> unique to schizophrenics, but was found

in mild form in psychiatric patients with various diagnoses, although schizophrenics showed the most severe thought disorder. The findings of Harrow and Quinlan could provide support for the suggestion of a positive relationship between the level of anxiety and degree of thought disorder as an effect of anxiety, either psychologically, psychophysiologically, or determined by both.

Holtzman et al. (Spohn and Patterson, 1979) found smooth persuit eye movement anomalies (SPEM) or eye tracking deviance (ETD), which Holtzman et al. interpret to be an involuntary attentional disorder, to be increased not only among schizophrenic, but also among nonschizophrenic functionally psychotic patients compared with controls. Holtzman, et al. found evidence of a positive relationship between the presence of thought disorder, as determined by psychological tests, and ETD in psychiatric patients. Like the transactional/communication deviance variables related to anxiety (Wynne and Singer, 1963) repeatedly demonstrated in families of schizophrenics, ETD-suggesting an involuntary attentional disorder has been found in first degree relatives of schizophrenics compared with relatives of nonschizophrenic psychiatric patients and controls.

Experimental findings in studies of psychological functioning in schizophrenics would generally appear to be consistent with the suggestion of the pathogenic role of anxiety in schizophrenia. In a review of psychological research, Rabin, Doneson, and Jentons (1979) note that:

> Experimental psychologists involved in schizophrenia research have for the most part shown that schizophrenics, as compared with normals, have a greater tendency toward stimulus avoidance, an inability to maintain set or attention, a deficit in generalizing and categorizing ability, and poor involvement in experimental tasks (especially those involving social stimuli) and, are socially withdrawn and subject to disturbed autonomic system functioning. This summary reported in a recent National Institute of Mental Health monograph is appropriately capped by the statement that "major questions remain about variability, reliability and etiological significance of the findings" (p. 181).

It has been shown that the relationship between emotional arousal and perceptual and cognitive performance accuracy is curvilinear (inverted U curve of efficiency [Malmo and Shagass, 1949; Duffy, 1962]). Physiological studies of schizophrenics have demonstrated both overarousal and underarousal in schizophrenics (Fenz and Velner, 1970; Lang and Buss, 1965; Spohn and Patterson, 1979; and Venables and Wing, 1962). Janis (1967) found high arousal in short-term stress situations related to hypervigilance and temporary impairments in judgment, attention, and set in normals.

Specific Thoughts Stimulate Anxiety; Evidence of the Subconscious Activation of Anxiety

Groen (1975) suggests the following operational definition of anxiety:

> Purely psychologically anxiety can be defined as a peculiar, unpleasant feeling, characterized by the anticipation of a threatening or dangerous event that might happen in the future. When this future event is clear to both the subject and the investigator, the emotion is usually called fear; when the individual and the investigator are not quite conscious of the cause, the terms apprehension, anxiety *per se*, or "free-floating anxiety" are used.
>
> The tendency of predisposition, which is present in some individuals more than in others, to react with anxiety to the perception of certain future events is called the *anxiety trait*; this is considered to be one of the characteristics of the individual personality. The emotion itself is designated as the *anxiety state* (Spielberger, 1966).
>
> . . . this anxiety trait depends largely on previous experience, conditioning, and learning of the individual. This may mean, for instance, that an event to which one individual reacts by anxiety may induce in another aggressivity, in others depression, and in others no more than curiosity; consequently it depends mainly on previous programming whether an individual will react by fight, flight, submission, or some other form of coping behavior (p. 732-733).

Horowitz (1975) has summarized research findings supportive of a general model of cognitive response to stressful events:

> Clinical studies indicate that external stress events induce two seemingly

> opposite deflections from conventional ways in which ideas and feelings are experienced. The stress event may be followed by intrusive and repetitive thought, or by ideational denial and emotional numbing. A series of experiments examined one of the deflections, intrusive and repetitive thought and found it to be a general response tendency occurring across various populations and degrees of stress. This report summarizes results from this series of replicated studies (p. 1457).
>
> After stressful events, even those of less impact than a "trauma," there is a tendency to repeated recollection of the event and related associations. This process will continue even if opposed by controlling maneuvers. The combination of automatic repetition and avoidance efforts leads to episodes of intrusive thought. With integration, the automatic repetition ceases as a special memory effect. The stressful event becomes, like other memories, available for recollection but is no longer preemptory in emergence (p. 1463).

The model of cognitive response to stressful events demonstrated by Horowitz (1975) would appear to be consistent with the suggestion that chronic high levels of anxiety in schizophrenia can be reinforced by non-integrated or unresolved anxiety-stimulating intrusive and repetitive thoughts.

The suggestion that anxiety-stimulating intrusive and repetitive thoughts are related to the reinforcement of chronically high levels of anxiety would seem to have particular significance to schizophrenia, in which perseverative terrifying thoughts (Karon, 1963, 1976), misperceptions, delusions and hallucinations

would provide powerful stimuli for the reinforcement and exacerbation of anxiety reactions with autonomic concomitants, the awareness of which could stimulate further disorganization and decompensation (negative feedback mechanism) over time (c.f., Docherty, Van Kammen, Siris, and Marder, 1978). Lapidus and Schmolling (1975) cite empirical evidence [Fish, 1961; Harris, 1959; and Zuckerman, Albright, Marks, and Miller, 1962] that schizophrenic hallucinations may occur in the context of high arousal with reduced external stimuli [Lilly, 1956; Shurley, 1960].

Research reported by Lacey and Smith (1954) and Lacey, Smith, and Green (1963) has demonstrated empirical evidence of the conditioning and generalization by unconscious anxiety response related to an experimentally induced "trauma" or stress. This conditioning and generalization of unconscious anxiety, and the stress effects on cognition research of Horowitz (1975) suggests likely avenues by which high chronic levels of anxiety are stimulated, reinforced, and exacerbated by environmental stressors (external) (Brown and Birley, 1968; Steinberg and Durell, 1968; Birley and Brown, 1970; Jacob and Meyers, 1976), as well as conscious and subconscious intrusive and repetitive thoughts (internal) related to previous traumatic experience,

conditioning, and learning (e.g., Goldstein and Rodnick, 1975; Karon and VandenBos, 1981).

The research of Lacey et al. (1954, 1963) demonstrated a discernable difference between unconscious and conscious anxiety response; unconscious anxiety response was found to be related to less discrimination and greater stimulus generalization in normal subjects. Chronic high anxiety level was also found to be related to less discrimination and greater generalization of anxiety response. However, Lang and Buss (1965) reviewed equivocal support for the relationship between anxiety and overgeneralization, and greater overgeneralization in schizophrenics compared with normals. Generalization of anxiety response would be consistent with psychodynamic psychological mechanisms in schizophrenia, such as anxiety-determined "transference to the world at large" (Karon, 1963) and "parataxic distortion" (Sullivan, 1953, 1962).

The Specific Role of Annihilation Anxieties in Schizophrenic Psychotic Reactions

Human experience would suggest that the most terrifying thoughts have to do with death, being killed, attacked, and mutilated. Bettelheim, Karon (Karon, 1963), and Searles (Burton, 1961) have related the

precipitating or major chronic anxiety in schizophrenia to overgeneralization of the fear of dying or being killed.

The psychodynamic hypothesis of overwhelming conscious and subconscious overgeneralized annihilation anxieties in the etiology and dynamics of schizophrenic psychotic reactions receives some support from a systematic investigation of recalled dreams of schizophrenic women compared with dreams of nonschizophrenic female controls (Carrington, 1972).

Carrington (1972) found that in general, dreams of schizophrenics suggested an acute state of emergency or stress. Dream variables correlated with degree of maladjustment, and appeared to be distributed along a continuum from normal to schizophrenic.

Carrington (1972) reported that:

> Supporting an interpretation of the dreams of the schizophrenic subjects as representing an emergency stance is the fact that roughly one-half of the S group dreams of physical aggressions against the dreamer explicitly indicated the dreamer's life to be in danger. In some instances, the dreamer was actually killed in her dream. The remaining half of the S group dreams of physical assault on the dreamer involved sexual assaults, rapes, and other nonlethal attacks such as someone throwing a jar of spiders over the dreamer. In such dreams, while the dreamer's life was not explicitly described as being at stake, they often seemed to imply danger to life. In contrast, danger to life was depicted in only one of the two NS [nonschizophrenic] dreams

> of physical assault against the dreamer (p. 347).

It is suggested that if such terror-arousing thoughts (often expressed symbolically in schizophrenic hallucinations, delusions, and gestures) as the fear of dying or being killed, the draining fantasy, abandonment, being swallowed or absorbed, or being ripped apart (Karon, 1963) are not resolved consciously, then such intrusive and repetitive terrifying thoughts may reinforce and exacerbate the chronic systemic terror syndrome of schizophrenic psychosis (Karon, 1963), mediated and exacerbated by conscious and subconscious stimulation of the autonomic nervous system corollaries of high anxiety.

Namache and Ricks (Germezy, 1974) reported that one of the variables which was found to differentiate released schizophrenics from chronic schizophrenics in the Judge Baker research was the presence of expressed concern about dying during the acute phase of the psychosis. This finding suggests that conscious awareness of "annihilation anxiety" could be related to variables that affect outcome prognosis in schizophrenic psychoses.

It is suggested that the frequently observed hypochondriacal or somatic symptoms ("delusions") that often precede or accompany schizophrenic psychotic

reactions (Docherty, Van Kammen, Siris, and Marder, 1978; Offenkrantz, 1962) could be related to the prodromal autonomic system responses of the psychotic's acute anxiety (terror) reactions.

In a clinical study of improved schizophrenics (Kayton, 1975), Kayton noted the prominance of somatic complaints, phases of disorganization, feelings of rejection, and "other psychotic behaviors including curling into fetal positions, huddling in corners, and being mute, blank, and out of contact with reality. These behaviors coincided with verbalized fears of annihilation, plunging into endless water, being suffocated, fears of dying and destruction of the world."

Psychophysiological Correlates of Anxiety: "Arousal"

Autonomic Nervous System

Cannon's (1920) classical physiological studies first demonstrated that emotional states activate physiological functions. Kielholz (1975) discusses the psychological and the somatic concomitants of anxiety:

> Scientifically anxiety can be described in Jasper's terms as an elementary, unadapted emotional reaction which is inappropriate to the threatening danger and therefore cannot be countered by rational, purposive behavior. All anxiety is bound up with gestures and facial expression along with symptoms of autonomic stimulation of the ergotropic, adrenergic nervous system. Anxiety may sometimes be manifested only

> at a physical level. These symptoms are then known as anxiety equivalents. It is apparent, then, that emotions may be manifested predominantly at a psychic, psychomotor, or autonomic-endocrine level, or at all three at the same time (p. 748).

It is suggested that in schizophrenia, and possibly to some extent in all psychopathological states (Kelly and Walter, 1968), chronic high levels of anxiety related to intense emotions can effect functional as well as structural changes systemically, mediated by autonomic systems, and demonstrated by abnormalities in neurophysiological, neurochemical, hormonal, hematological, and histological findings reported in laboratory studies of schizophrenics (e.g., Bellak, 1979; Wynne, Cromwell, and Matthysse, 1978).

It has been suggested in this paper that the autonomic disturbances that have been demonstrated in schizophrenics are functionally related to pathognomonic high chronic levels of anxiety. Findings reported in a study by Zahn (Keith, Gunderson, Reifman, Buchsbaum, and Mosher, 1976) could suggest that the autonomic disturbances in schizophrenics are not genetically determined. Keith et al. (1976) note:

> Zahn (1975) studied a series of identical twins discordant for the diagnosis of schizophrenia. Schizophrenics and controls were not greatly different in electrodermal response when unimportant tone stimuli were presented. However, schizophrenics failed to show increased arousal

> (more electrodermal responses) when the tone was important--a signal to respond in a reaction time task. Nonschizophrenic co-twins behaved as normals' controls did--suggesting that autonomic variables indicate more about disease state than underlying genetic vulnerability (p. 533).

Van Dyke, Rosenthal, and Rasmussen (1974) compared adopted-away offspring of schizophrenics with matched adoptees with no history of parental psychiatric illness (subsample from Kety's Danish adoption sample). Van Dyke et al. utilized Mednick and Schulsinger's procedures for measuring autonomic variables, and reported equivocal findings between adopted-away offspring of schizophrenics and matched adoptees on autonomic variables:

> Summarizing the findings of this study, some evidence has been found that the index adoptees as a group exhibit significantly larger and more frequent responses to mild stimuli. No evidence was found that the index group, compared to controls, had faster response latencies, higher basal arousal, or slower response recovery rates. In addition, there was no evidence that index cases were more conditionable than the controls, or that they exhibit an inability to habituate to mild stimuli. In sum, the study shows evidence of only a weak relationship between the diathesis for schizophrenia and electrodermal activity (Van Dyke [Garmezy, 1974] p. 28).

Garmezy (1974) comments in his review that:

> Van Dyke appropriately notes, however, that whereas Mednick and Schulsinger were comparing control and well groups of adolescent risk samples with an already sick group of risk youngsters, his subjects were adults

> and reasonably healthy as well, since only one of the index adoptee cases has been incapacited by illness (p. 28).

However, it is exactly these findings, of a significant difference in ANS arousal between monozygotic co-twins discordant for the diagnosis of schizophrenia reported by Zahn (Keith et al. 1976) and the equivocal ANS differences found between index and control adoptees reported by Van Dyke et al. (1974) which support a functional rather than a genetic or diathesis relationship between schizophrenia and ANS disturbances.

Analyzed from a functional hypothesis, the autonomic variables have also been found to be related to prognosis and treatment outcome. Zahn, Carpenter, and McGlashan (1981) studied physiological data related to treatment outcome in a subsample of the NIH project (Carpenter, McGlashan, and Strauss, 1977). Zahn et al. (1981) found significant differences in autonomic variables in drug-free acute schizophrenic improvers versus non-improvers over the four-month treatment period, although global ratings of psychopathology and a symptom rating scale on admission failed to differentiate the two groups. ANS activity was found to be predictive of short-term outcome; four months of treatment (psychoanalytic psychotherapy, group therapy, family therapy [Carpenter, McGlashan, and Strauss, 1977] with marked improvement in ratings of severity of psychopathology

was accompanied by decrease in heart rate in improved schizophrenics. Research has correlated heart rate with other psychological and physiological measurements of anxiety (Kelly and Walter, 1968; Kelly, Brown, and Shaffer, 1970). Sex differences were found in ANS variables (c.f., Mednick and Schulsinger [Rieder, 1979]). The group of patients who did not show improvement initially were found to have a higher heart rate, slower habituation of orienting responses, and demonstrated less response to stimuli in a reaction time task.

Commenting on the Zahn et al. findings, Keith et al. (1976) observe:

> In general, the autonomic responses of the improved group closely resembled the autonomic responses expected from a normal population, while the group that failed to improve responded more like a group of chronic schizophrenics, showing (1) higher autonomic arousal under basal conditions, (2) diminished autonomic response to stress, and (3) slow habituation of electrodermal orienting response to stimulation (p. 534).

The evidence of a relationship between the severity of psychopathology, prognosis, and autonomic disturbances (Mednick and Schulsinger, 1973; Zahn et al. 1981) suggests that the autonomic nervous system may be functionally related to the mediation of the biological substrates of psychopathology, and that psychodynamic anxiety and psychophysiologic arousal function as corollary psychopathological mechanisms in schizophrenic

psychotic reactions. It is suggested that environmental stressors and conscious and subconscious conflicts stimulate anxiety reactions. Physiological affective responses in anxiety and rage may reinforce and exacerbate cognitive reactions in an intensifying and self-perpetuating negative feedback circuit and anxiety overgeneralization that can lead to the severe acute and chronic anxiety-arousal (terror) syndromes of schizophrenic psychotic reactions.

The findings reported in the NIH project (Carpenter, McGlashan, and Strauss, 1977; Zahn, Carpenter, and McGlashan, 1981) could suggest that relatively brief four months of psychotherapeutic treatment in unmedicated acute schizophrenics was related to reduced anxiety and psychophysiological arousal in improved schizophrenics, which has implications for both functional etiological theories of schizophrenia (and other psychoses) and psychotherapeutic process and outcome variables.

Catecholamines in Schizophrenia

Conscious and subconscious cognitive or ideational, anxiety responses appear to be mediated by complicated, and largely presumptive, feedback systems which activate neocortical, limbic, and reticular

systems, that in turn activate the ANS and its peripheral effector organs.

Autonomic functions are integrated with other somatic processes; adrenergic response characteristically produces generalized physiological effects rather than discrete localized effects. Adrenergic discharge leads to lowered thresholds in the reticular formation, thereby reinforcing an alert, aroused state.

The ANS functions at a subconscious level, which is functionally consonant with the tripartite unconscious-preconscious-conscious psychodynamic model of psychological mentation, behavior, and psychopathology (Fenichel, 1945).

Groen (1975) suggests that increased arousal is very closely associated with anxiety, and discusses an "anxiety-arousal feedback system." Activation of the anxiety-arousal mechanism can be simulated in some people by injection of epinephrine (Frankenhaeuser, 1975; Groen, 1975).

Frankenhaeuser (1975) comments on these catecholamine infusion studies:

> The results are consistent with those from studies of the excretion of endogenous epinephrine in showing that an increase in circulating epinephrine is accompanied by a rise in nonspecific subjective arousal, and the affective tone is determined by the individual's cognitive appraisal of

> the situation. Infusion of norepinephrine does not produce emotional reactions qualitatively different from those produced by epinephrine infusions (p. 223).

Frankenhaeuser (1975) summarizes findings from research on the influence of emotion-inducing stimuli, mediated by the CNS, upon the catecholamines:

> Catecholamine secretion varies widely under different psychosocial conditions. Under rest and inactivity, epinephrine secretion is generally low; under ordinary daily activities, secretion rises to about twice the resting level; and under moderately stressful conditions, secretion rates corresponding to between three and five times the resting levels are often noted. Severe stressors may induce a further pronounced increase to levels indicative of pheochromocytoma (p. 213).
>
> The question of a direct action of the adrenalmedullary hormones on the central nervous system is of particular interest in the study of emotion. Although this still remains a somewhat controversial issue, the evidence now available suggests that epinephrine crosses the blood-brain barrier in the region of the hypothalamus and acts directly on the mesencephalic reticular formation and the posterior hypothalamus (c.f., reviews by Euler, 1967; Rothballer, 1959; Schildkraut and Kety, 1967). Little is known about the intracerebral concentration of epinephrine needed to achieve these effects, but it may well be that very small amounts are required (p. 211).
>
> It should be noted that repeated exposure to the same external situation [or presumably to the same internal ideational stimulus, both conscious and subconscious, M.A.T.] is accompanied by decreased catecholamine secretion only insofar as the repetition is associated with a decrease in the state of subjective arousal. Under conditions where subjective arousal remains

> at a high level, epinephrine output also stays high [such conditions would include neurotic anxiety, phobias, and acute and chronic schizophrenic psychotic reactions, M.A.T.] (p. 214).
>
> In the course of repeated exposure epinephrine excretion decreases successively provided that the subject gains better control over the situation (p. 214).

These findings suggest that stress and anxiety reactions stimulate adrenergic discharge which increases the levels of circulating catecholamines epinephrine and norepinephrine. These catecholamines may cross the blood-brain barrier and possibly hyperstimulate or disturb normal CNS receptor activity. Chronic high anxiety activation of catecholamine action on CNS activity could account for the functional and structural aberrations in psychophysiological arousal and neurochemical activity that have been demonstrated in acute and chronic schizophrenic psychoses (e.g., Bellak, 1979; Wynne et al., 1978).

Brain catecholamines dopamine and norepinephrine have been implicated in the physiopathology of schizophrenia (Bowers, 1980; Farley, Price, McCullough, Deck, Hordynski, and Hornykiewicz, 1978; and Langer, Brown, and Docherty, 1981).

Bowers (1980) notes that:

> Most researchers doubt any simple, exclusive dopaminergic pathology in schizophrenia. Other catecholamine systems, as

> well as other noncatecholamine neurotransmitter systems which impact with dopaminergic neurons may play an important role (p. 395).

Langer et al. (1981) suggest that psysiological or possibly psychological stimulation related to a kindling-like mechanism may lead to induction of dopamine receptor supersensitivity. Langer et al. observe that:

> Acute schizophrenia has been associated with an increased number of recent life events and crises (Brown and Birley, 1968; Steinberg and Durell, 1968; Birley and Brown, 1970; Jacobs and Myers, 1976). The variations in number, severity, and pattern of life events in schizophrenics suggests a precipitant role for the disorder rather than a causative one (Jacobs and Myers, 1976). Receptor sensitivity in the mesolimbic and mesocortical DA systems might be progressively altered by repetitive stressful episodes--akin to DA agonist repetitive stimulation, possibly in the manner from which kindling results. This concept is supported by studies which demonstrate that effects of experimental stress on biogenic amines in animals and man can be similar to those produced by psychomotor stimulants (Weil-Malherbe and Szara, 1971) (p. 216).

It is relevant to note, in the context of the suggested role of the catecholamines in the psychophysiology of schizophrenic psychotic reactions, that intensive and extensive administration of sympathomimetic drugs like amphetamine and methylphenidate can produce a psychotic reaction in nonschizophrenics that is strikingly similar to paranoid schizophrenia (Alpert

and Friedhoff, 1980; Snyder, 1973; Snyder, Banerjee, Yamamura, and Greenberg, 1974).

The sympathomimetic action of amphetamines and related agents evidently stimulates the release of the neurotransmitter catecholamines dopamine and norepinephrine, potentiating catecholamine effects.

Amphetamines, methylphenidate, as well as L-Dopa (a dopamine precursor) produce exacerbation of pre-existing psychotic symptoms in schizophrenics. However, remitted schizophrenics, like normal, neurotic, and personality disordered subjects did not show activation of psychotic symptoms following single dose administration of methylphenidate. Antipsychotic drugs were not found to be effective in blocking methylphenidate psychosis-activating effects in schizophrenics (Janowsky, El-Yousef, Davis, and Sekerke, 1973). Psychotic symptoms can also be activated by the tricyclic antidepressants, which block uptake of norepinephrine (Janowski and Davis, 1976). Janowski and Davis (1976) note that reserpine, which depletes catecholamines, and the "antipsychotic" drugs, decrease select schizophrenic symptoms via neurotransmitter effects.

The Role of Maternal Anxiety Physiology in Utero

As noted previously, investigators have suggested that maternal anxiety physiology may be a

fetal teratogenic developmental factor in the etiology of schizophrenia.

Lipton, Steinschneider, and Richmond (1965) reviewed research on the developmental biology of the autonomic nervous system and reported evidence of the vulnerability of the fetus to the effects of maternal anxiety physiology:

> Recent evidence suggests that nicotine during cigarette smoking can increase fetal heart rate. Sandler et al. reported that norepinephrine may cross the placental barrier. Injected into the mother at term, radioactive norepinephrine induced marked bradycardia and was recovered in the newborn infant's urine in small amounts. It is evident that much needs to be done to determine cardiac rate and electrocardiographic responses of the developing fetus to external stimulation, chemicals, neurohumoral agents and physiological and emotional changes in the mother.
>
> Hallman et al. described 1 case of striking fetal tachycardia associated with maternal fright induced in the laboratory. Recent animal studies by Shabanah, Toth, and Maughan documenting the role of the autonomic nervous system in controlling uterine blood flow suggest likely avenues by which maternal emotions may affect the developing fetus (pp. 149-150).

As noted by Zahn (1977), subjects in the Mednick and Schulsinger project (1973), and subjects in two other high risk studies (Garmezy, 1974) were older children and adolescents. Perinatal infant studies would help clarify to what extent the ANS aberrations found in the pre-schizophrenic offspring of schizophrenic parents could be congenitally or environmentally

and psychogenically determined. Unfortunately, the perinatal study reported by Schacter, Kerr, Lachin, and Faer (Zahn, 1977), comparing the neonatal offspring of schizophrenic and normal parents, found only a significant interaction between maternal delivery medication, diagnostic group, and tonic heart rate in the second but not the third postnatal day.

Further infant research may demonstrate perinatal ANS disturbances in the offspring of schizophrenic mothers, as well as offspring of nonschizophrenic mothers; however, these perinatal ANS disturbances in infants, if related to the effects of maternal anxiety physiology upon fetal development, may prove to be only residual in nature, depending upon critical infantile environmental variables. The higher concordance rates found in dizygotic, as well as monozygotic twins, compared with other siblings (Shields, 1968) could well be explained by these intrauterine variables and/or combination with environmental variables.

Postnatal-perinatal ANS disturbances, if not related to or exacerbated by, intrauterine fetal ANS hyperstimulation or PBCs, might represent a developmentally global rather than discrete early phylogenetic and ontogenetic reactivity to abnormal levels and duration of infantile stress (c.f., Spitz, 1965):

stressors such as maternal separation and deprivation, prolonged discomfort, frustration, trauma, lack of satisfying physical and emotional stimulation and care taking; noxious transactional effects of maternal tenseness, anxiety, irritability, and withdrawal; and parental conflict, for example. Infantile stress-anxiety may be the developmental precursor, or pathognomonic factor, for what Fish (Rieder, 1979) described as "pandevelopmental retardation" associated with perceptual dysfunctions and psychological disturbances in children at high risk for subsequent severe psychopathology.

Pregnancy and Birth Complications (PBCs)

Garmezy (1974) has made an extensive review of the research on the antecedents of schizophrenia. Garmezy (1974) cites research that suggests that the PBC variables are not specific to schizophrenic mothers (see Shields and Gottesman, 1977 for a more recent discussion).

Sameroff and Zax (Garmezy, 1974) have found the incidence of pregnancy and birth complications to be equivalent among schizophrenic and neurotic-depressive women, and greater in these two groups than among personality-disordered and normal women. Sameroff and Zax also refer to studies that suggest that infant

growth retardation can result from atypical child rearing practices. Sameroff rejects the diathesis hypothesis for the increased incidence of pregnancy and birth complications in schizophrenic women, and instead suggests that anxiety is related to such obstetrical complications, and also to the [pathogenic] development of a deviant pattern of child-rearing practices.

The primary role of anxiety suggested by Sameroff (Garmezy, 1974) is supported by the finding that both groups with the highest incidence of pregnancy difficulties, the schizophrenic and neurotic-depressive women, had higher anxiety levels than either the control or personality-disordered women. Kelly and Walter (1968) also found that chronic anxiety, agitated depressive, and chronic schizophrenic subjects had higher anxiety levels than personality-disordered or normal subjects.

Neuroleptic Drugs and Anxiety-Arousal

Chronic maintenance neuroleptic drug treatment of schizophrenics may reduce some of the physiological effects of arousal in schizophrenics via selective catecholamine receptor actions, thereby producing limited symptomatic improvement rather than "cure." However, neuroleptic drugs do not resolve nor extinguish the

underlying anxiety conflicts that continue to reinforce and perpetuate the high anxiety-arousal reactions in schizophrenia (Grinspoon, Ewalt, and Shader, 1972).

Spohn, Lacoursiere, Thompson, and Coyne (1977) found negligible effects of phenothiazines on all tests of cognitive dysfunction: abstract reasoning, autistic thinking, overinclusive thinking, random error tendencies, and excessive narrowing of concepts, in chronic schizophrenics. These investigators also reported that "for conventional indices of general arousal, drug-placebo group differences were not demonstrable." Overall, phenothiazine effects on psychophysiological variables were equivocal.

The serious long-term complications of maintenance neuroleptic drugs have been discussed by Berger and Rexroth, 1980; Gardos and Cole, 1976; Gunderson, 1977; Karon and VandenBos, 1981; and Rappaport, Hopkins, Hall, Belleza, and Silverman, 1978).

Discussion

Psychological and physiological research has been reviewed that could support the suggestion of a psychosomatic model in the etiology and functional dynamics of at least some schizophrenic disorders. A psycho-somatic mechanism or process in schizophrenia could provide an integrating explanation for the

psychological, physiological, biochemical, and histological dysfunctions and structural changes that have been demonstrated in studies of acute and chronic schizophrenics.

Psychodynamic anxiety and psychophysiologic arousal in schizophrenic psychoses can be understood as corollary human reactive mechanisms to environmental stressors. Conscious and subconscious anxiety reactions with psychophysiologic autonomic concomitants evidently interact in mediating the individual's characteristic responses to stress and threat. It is suggested that the autonomic system instability or disturbance found in high-risk children, preschizophrenics, and schizophrenics is the psychophysiologic corollary of the individual's level of chronic reactive anxiety since infancy, possibly even including fetal hyperarousal in utero in response to the effects of maternal anxiety physiology.

Infantile neglect, rejection, and separation, as well as stable and unstable pathogenic familial environments produce excessive anxiety, insecurity, confusion, and alienation in the child that is not "contained" nor resolved. Pathognomonic chronic high anxiety and related stress vulnerability are in turn related to developmental disturbances in cognitive,

emotional, and social functioning which increase risk of "schizophrenia spectrum" psychopathology.

In an influential review of psychological deficit in schizophrenia (Buss and Lang, 1965; Lang and Buss, 1965), Lang and Buss dismiss the primary role of high chronic anxiety in the etiology of schizophrenia as lacking strong empirical support. Lang and Buss conclude:

> What appears to be wrong with the theory is its specification of anxiety as the crucial drive that leads to schizophrenia. While it is true that many schizophrenics appear anxious, this could as readily be a relation to incapacity as a cause of it . . . The fact that chronic, withdrawn patients frequently have high-somatic activity levels appears partially to save the theory . . ..
>
> The hypothesis that schizophrenics are overaroused receives some support. However, the exact mechanism by which overarousal can produce hyporesponsivity, high response variability, inattention, disturbances of set and association, and the other symptoms of chronic schizophrenia is yet to be explained (pp. 96-97).

Research has been reviewed that could suggest that pathognomonic chronic high levels of reactive anxiety-arousal since early childhood, related to psychological, psychophysiological, and biochemical functional and structural changes, could well account for the dysfunctions in schizophrenia that Lang and Buss (1965) emphasize as requiring explanation.

Lang and Buss (1965) are also critical of an etiological theory based on anxiety because of the observation that more chronic and severe schizophrenics show less clinical anxiety. They also argue that obviously many individuals with extremely high anxiety levels never become schizophrenic.

Kelly and Walter (1968) have noted that anxiety may not be overt in schizophrenics due to the well-known affective blunting or incongruity in the syndrome. They suggest that a physiological measure of anxiety may provide more accurate evidence of the actual level of anxiety. Kelly and Walter (1968) found that chronic schizophrenic patients had high basal forearm blood flow (which has been found to be a valid and reliable index of anxiety), high heart rates and anxiety self-ratings, and poor response to a stressful stimulus. The hyporesponsiveness to stress shown by forearm blood flow, heart rate, and self-rating, is consistent with other research findings of diminished autonomic responsiveness in chronic schizophrenics, and could suggest a physiological "exhaustion" state (Selye, 1963) related to chronic basal overarousal, and law of initial value effects.

The argument that high anxiety individuals should become schizophrenic if the anxiety etiological theory is to be supported is obviously specious and

simplistic. Specific critical pathogenic environmental variables, presumably interacting with chronic high anxiety, have been shown to be related to schizophrenic versus nonschizophrenic outcomes (e.g., Goldstein and Rodnick, 1975). It is plausible that if schizophrenic psychotic symptoms are functionally related to the level and chronicity of anxiety-arousal, then a functional definition of anxiety relating the severity of schizophrenic dysfunction to level of anxiety would suggest that schizophrenia represents the most extreme dysfunctional anxiety syndrome.

The suggestion that schizophrenic symptoms are both symptoms of anxiety and conditioned defenses against anxiety (largely unadaptive) has been discussed in reference to schizophrenic thought disorder (Karon, 1963, 1976; Wynne and Singer, 1963), and withdrawal (Karon, 1963, 1976; Venables and Wing, 1962). Kelly and Walter (1968) provide a relevant example which illustrates the anxiety-related defensive reinforcement of symptomatology; in this case, "depersonalization," which was both a reaction to and defensive distortion of an anxiety-provoking situation:

> Lader and Wing (1966) describe an anxious patient who experienced an attack of depersonalization while measurements of skin resistance and heart rate were being made. The typical physiological pattern of an anxiety state changed to that of a normal

> person. Later she said her feelings of panic suddenly subsided and she felt that the objects in the room no longer existed properly (p. 621).

The implications for the treatment of schizophrenic syndrome disorders are apparent; anxiety must be "contained" and resolved, along with the development of more adequate internal resources and adaptive abilities for coping with life stresses. Psychotherapeutic and psychosocial treatment modalities have demonstrated such combined effectiveness (Karon and VandenBos, 1975, 1981; Mosher and Keith, 1980; Wolberg, 1977). Moreover, as noted by Lidz (1977):

> The long-term follow-up studies of Ciompi and Muller (1976) and of M. Bleuler (1976) provide no evidence for differentiating acute and chronic schizophrenia on the basis of prognosis" (p. 522).

APPENDIX B

APPENDIX B

Raw Cell Means for Demographic and Length of Stay and Frequency of Attendance Data, with Groups

Cell Means

Days
By Sex
MStat
Group

Total Population

56.32
(153)

Sex

1	2
58.37 (71)	54.55 (82)

MStat

1	2	3	4
66.51 (96)	33.43 (14)	42.12 (41)	18.50 (2)

Group

1	2	3
94.19 (36)	45.35 (48)	44.19 (69)

	MStat 1	2	3	4
Sex				
1	64.55 (56)	26.67 (3)	40.27 (11)	6.00 (1)
2	69.25 (40)	35.27 (11)	42.80 (30)	31.00 (1)

Cell Means By Days, Sex, MStat, Group

Sex	Group 1	2	3
1	99.94 (18)	48.29 (24)	40.90 (29)
2	88.44 (18)	42.42 (24)	46.57 (40)

MStat	Group 1	2	3
1	97.03 (29)	55.66 (29)	51.50 (38)
2	38.50 (2)	15.00 (5)	45.14 (7)
3	100.00 (5)	34.86 (14)	33.59 (22)
4	0 (0)	0 (0)	18.50 (2)

Group = 1

Sex	MStat 1	2	3	4
1	102.57 (14)	64.00 (1)	99.67 (3)	0 (0)
2	91.87 (15)	13.00 (1)	100.50 (2)	0 (0)

Group = 2

Sex	MStat 1	2	3	4
1	59.28 (18)	8.00 (2)	19.00 (4)	0 (0)
2	49.73 (11)	19.67 (3)	41.20 (10)	0 (0)

Group = 3

Sex	MStat 1	2	3	4
1	46.33 (24)	0 (0)	17.00 (4)	6.00 (1)
2	60.36	45.14	37.28	31.00

Cell Means by Months

Total Population

7.97
(153)

Sex	1	2
	8.06 (71)	7.89 (82)

MStat	1	2	3	4
	8.95 (96)	6.43 (14)	6.41 (41)	3.50 (2)

Group	1	2	3
	11.22 (36)	6.33 (48)	7.41 (69)

	MStat	1	2	3	4
Sex					
	1	8.63 (56)	5.67 (3)	6.36 (11)	2.00 (1)
	2	9.40 (40)	6.64 (11)	6.43 (30)	5.00 (1)

	Group	1	2	3
Sex				
	1	11.89 (18)	6.29 (24)	7.14 (29)
	2	10.56 (18)	6.38 (24)	7.60 (40)

	Group	1	2	3
MStat				
	1	11.31 (29)	6.93 (29)	8.68 (38)
	2	7.00 (2)	3.80 (5)	8.14 (7)
	3	12.40 (5)	6.00 (14)	5.32 (22)
	4	0 (0)	0 (0)	3.50 (2)

Cell Means by Months (Continued)

Group = 1

Sex	MStat 1	2	3	4
1	11.50 (14)	12.00 (1)	13.67 (3)	0 (0)
2	11.13 (15)	2.00 (1)	10.50 (2)	0 (0)

Group = 2

Sex	MStat 1	2	3	4
1	7.33 (18)	2.50 (2)	3.50 (4)	0 (0)
2	6.27 (11)	4.67 (3)	7.00 (10)	0 (0)

Group = 3

Sex	MStat 1	2	3	4
1	7.92 (24)	0 (0)	3.75 (4)	2.00 (1)

Cell Means by Days/Months

Total Population
5.92
(153)

Sex	1	2
	5.80 (71)	6.03 (82)

MStat	1	2	3	4
	6.45 (56)	4.48 (14)	5.25 (41)	4.60 (2)

Group	1	2	3
	7.80 (36)	5.90 48)	4.96 (69)

Cell Means By Days/Months (Cont'd.)

	MStat 1	2	3	4
Sex				
1	6.13	3.72	4.90	3.00
	(56)	(3)	(11)	(1)
2	6.89	4.68	5.38	6.20
	(40)	(11)	(30)	(1)

	Group 1	2	3
Sex			
1	7.73	5.88	4.53
	(18)	(24)	(29)
2	7.88	5.92	5.27
	(18)	(24)	(40)

	Group 1	2	3
MStat			
1	7.85	6.80	5.11
	(29)	(29)	(38)
2	5.92	3.38	4.85
	(2)	(5)	(7)
3	8.32	4.92	4.76
	(5)	(14)	(22)
4	0	(0)	(2)

Group = 1

	MStat 1	2	3	4
Sex				
1	7.92	5.33	7.61	0
	(14)	(1)	(3)	(0)
2	7.78	6.50	9.37	0
	(15)	(1)	(2)	(0)

Group = 2

	MStat 1	2	3	4
Sex				
1	6.44	2.92	4.83	0
	(18)	(2)	(4)	(0)
2	7.40	3.68	4.96	0
	(11)	(3)	(10)	(0)

Cell Means By Days/Months (Cont'd.)

Group = 3

Sex	MStat 1	2	3	4
1	4.86 (24)	0 (0)	2.94 (4)	3.00 (1)

APPENDIX C

APPENDIX C

Program Descriptions from CMH
"Evaluation Report" (2/8/79)

Center 1:

Treatment Philosophy and Process

The description prepared by the staff states that the theoretical premise behind the program "is based on an understanding that the causes of mental illness are rooted in early childhood and in various life experiences that caused emotional damage." This premise leads the staff to a psychodynamic approach with an emphasis on group therapy and on the creation of a safe environment where clients have the opportunity for corrective emotional experiences. There is time scheduled for formal group therapy, but there is also informal therapy taking place on an ongoing basis. The focus is on treating each group as a family, allowing them to regress developmentally in a safe environment and then providing experiences by which they can re-learn more appropriate and healthy modes of being in the world. There is little focus on teaching skills to individual clients.

The following is a description prepared by the staff of the kind of therapeutic milieu they hope to create for their clients:

1. Interested, optimistic helpers will be reliably present at the times promised. They will be there expressly to help the client.

2. The P.H. staff will, for given periods of time, center their attention on the client, on his or her needs, feelings, problems, and in a global sense, on the client as a struggling, alive and growing person.

3. The entire staff will demonstrate in their interactions with each other a wide range of healthy, family-like interactions marked by acceptance and honesty.

4. Acceptance of the client's total, emerging self will be demonstrated through a concern with the client's feelings, including confusion, fear, anger and rage, even when these feelings are communicated indirectly. When self-defeating behaviors become an issue, these will be dealt with as arising from a cause and, whether the cause is explored or not, it will always be communicated that the client is accepted regardless of behaviors. When limits have to be set to protect the client, other persons or property, this will be done with a gentle, reassuring firmness.

5. The physical setting of the Center will be cheerful and homey. There will be no locked doors or areas that are always Off Limits. There will, however, be areas where privacy is guaranteed both for clients in their individual sessions and for therapists in their conferences with each other.

6. Any rules and limits will be clear and reasonable, and their rationale always explained patiently to the clients.

7. All staff will be a part of the treatment team regardless of their formal roles or titles. Staff will demonstrate that different roles and levels of authority can be present in a benevolent constellation of relationships.

Center 2:

Treatment Philosophy and Process

The treatment philosophy ascribed to by the Staff is educational/behavioral. The emphasis is on teaching specific skills such as conversational skills and assertive behavior and on providing information to clients. Behavioral strategies are used to reinforce positive behaviors and to extinguish negative behaviors. Some of the retarded clients are also taught to read and increase their vocabulary.

Treatment Goals and Termination

The overall treatment goals were defined by the staff as:

1. Increase positive behaviors
2. Decrease negative behaviors

3. Teach skills of living
4. Provide information to increase behavioral choices
5. Promote insight by clients into their own values, behaviors and needs.

The original strategy was for the whole staff to develop a treatment plan once a client was opened at the center, and then go over this plan with the client. The plan is basically a list of positive behaviors to increase and a list of negative behaviors to decrease. The staff and client were then to review this plan every three months to assess progress. This review process is no longer operating due to the time press felt by the staff. Since the clients are not kept informed of the staff's view of their progress, the termination process may be unclear. In general, the termination criterion is placement in a job training workshop (primarily from the high-functioning group). There is also turnover caused by some clients not returning to the center for reasons which are unclear.

Center 3:

Treatment Philosophy and Process

The treatment philosophy of the staff can probably best be described as eclectic. One component is an educational/teaching approach as evidenced by the list of seminars and activities listed on page 11. The staff assumes that the client learnings which take place in these activities will in time be transferred to contexts other than the Day Center. A behavioral philosophy is also in evidence. The staff uses verbal reinforcement and aversive strategies to change specific behaviors of the clients. In addition, the staff attempts to structure the clients' environment to elicit desirable behaviors such as social interaction, and then uses tokens to reward such behavior.

While the educational and behavioral approaches have predominated to date, the staff is also moving toward using a psychodynamic approach centered around verbal interpretations of client behavior, speech, and productions. The Counseling Center Director provides supervision to the staff in their efforts to implement this approach, which is primarily used in the group therapy situation. In addition, some of the activities, such as drawing exercise, seem designed to elicit

conflictual material for diagnostic and interpretive purposes, with the emphasis now on the diagnostic function.

Treatment Goals and Termination

The primary treatment goals defined by the staff were twofold: increase social contact and decrease or eliminate bizarre behaviors. An increase in self-esteem was also stated as a goal. A "successful" client was therefore described as one who could get a job, establish and maintain a support group outside the program, no longer manifest bizarre behavior, and exhibit positive self-attitudes.

In terms of the high- versus the low-functioning groups, the goals seemed to differ by degree rather than kind. The social goal for the high group is to increase the appropriateness of their interactions so that they can get jobs and make friends, while for the low group the goal is to establish any verbal interaction. In terms of bizarre behavior, the high group is expected to reduce such behavior to the point where they can "pass" in the outside world, while a goal for the low group is to become "less delusional." The high group graduates clients to the community, while the clients in the low group graduate to the high group. The staff's expectations are communicated to the clients in terms of specific behaviors that need changing. The turnover time was estimated to be six months to a year for the high group and three to five years for the low group. There has been little turnover in the low group in terms of graduating out of the program, or into the high group.

APPENDIX D

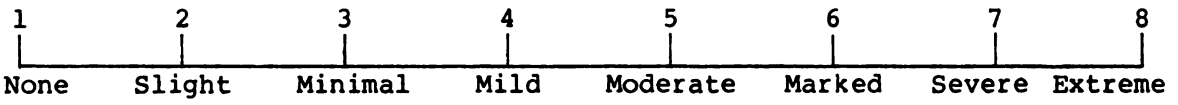
APPENDIX D

DAY THERAPY DATA BASE

CLIENT'S NAME _____EVALUATOR'S SIGNATURE_____

DATE _____

Rating Scale:



A. SOCIAL SKILLS:

_____ 1. Effectiveness of relating to peers (spontaneity, etc.)

_____ 2. Appropriateness of verbalizations

_____ 3. Tendency to relate aggressively

_____ 4. Tendency to withdraw

_____ 5. Acceptance of limits

B. BEHAVIOR:

_____ 1. Overly dependent--i.e., seeks much help, asks many questions, requires support and reassurance.

_____ 2. Obsessive-compulsive--i.e., ritualistic, rigid behavior/thought.

_____ 3. Depressed--i.e., flattened affect, decreased motor activity, self-depreciating.

_____ 4. Demanding--i.e., insists upon having own way, seeks special favors/help.

_____ 5. Attention seeking--i.e., loud, silly and immature behavior, praise seeking, somatic complaints.

_____ 6. Anxious--i.e., fidgety, perspiring, short attention span, worried affect.

_____ 7. Hostile--i.e., physically aggressive, verbally abusive, resistive to authority.

_____ 8. Manipulative--i.e., uses others, plays people against each other, coyly seeks extra privileges/treatment.

_____ 9. Overly compliant--i.e., obeys without question, very eager to please.

_____10. Aggressive--i.e., usurps leadership role, attempts to control, verbally overwhelming.

_____11. Disoriented--i.e., confused, out of contact with reality.

_____12. Withdrawn--i.e., isolates self, no response when approached.

_____13. Manic--i.e., hyperactive, loquacious, grandiose, aggressive.

C. TASK-ORIENTED AND/OR PERFORMANCE SKILLS

_____ 1. Level of motivation.

_____ 2. Attention span (concentration).

_____ 3. Frustration tolerance.

_____ 4. Comprehends and responds to directions.

_____ 5. Works independently.

_____ 6. Works with others.

_____ 7. Work quality.

_____ 8. Organization.

D. SENSORY-MOTOR PERFORMANCE

_____ 1. Eye-hand and eye-foot coordination.

_____ 2. Manipulative skills.

_____ 3. Integration of two sides of the body.

_____ 4. Spatial relationships with spatial awareness.

_____ 5. Body image and awareness.

_____ 6. Posture and ambulation.

E. ACTIVITIES OF DAILY LIVING (ADL) SKILLS

_____ 1. Personal hygiene.

_____ 2. Clothing.

_____ 3. Eating habits.

_____ 4. Communication (telephone, transportation, written, etc.).

_____ 5. Commitment to program.