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No. 4623

A PROGRAM EVALUATION STUDY OF
A PARTIAL HOSPITAL PROGRAM

DISSERTATION

Presented to the Graduate Council of the
University of North Texas in Partial
Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

by

Mary Katherine Damkroger, B.S., M.A.

Denton, Texas

May, 1998

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The purpose of the present study was to assess patient improvement in a specific freestanding partial hospital. Improvement was assessed in two specific areas: 1) symptom reduction as measured by the Symptom Check List-90-Revised (SCL-90-R) and 2) social adjustment as measured by the Social Adjustment Scale Self-Report (SAS-SR) at admission, discharge and three month follow-up. In addition, improvement was assessed from two perspectives: 1) patient evaluation and 2) therapist evaluation. Results indicated that there was statistically significant improvement from admission to discharge on the SCL-90-R and the SAS-SR. This improvement was maintained from discharge to three month follow-up. Findings also revealed statistically significant improvement when analyzed from both the patient perspective and the therapist perspective.

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CHAPTER 1

INTRODUCTION

Interest in evaluating treatment and its effectiveness began in the 1930's and has steadily increased over the years. Today, health care companies (with their interests in cost-containment), formal regulatory organizations and state legislatures (with their new focus on quality improvement), and the general public (with their increasing sophistication regarding mental health care and expectations of quality care) are demanding that treatment outcome studies not be left to academic researchers, but rather become a requirement for every state-of-the-art treatment facility. Third-party payers are interested in quality care, patient progress, and treatment programs that are effective. The Joint Commission on Accreditation of Healthcare Organizations has revised its quality assurance program and termed it continuous quality improvement, focusing not on maintaining quality, but rather on improving services. There also has been an increased focus on patient satisfaction surveys as a method to evaluate quality from the patient/client perspective rather than from the organizational perspective (which had heretofore been utilized). In addition, the increased decline in utilization of inpatient services has opened the door for partial hospitals to adopt the primary role of

health care provider to the community. Little research has been conducted on the efficacy of this new treatment service, which some believe is going to replace the more traditional long-term 24 hour inpatient service.

Consequently, there is a real need for more research in this area.

Partial Hospitals Defined

Partial hospitalization is defined as a time-limited, ambulatory, active treatment program that offers therapeutically intensive, coordinated, and structured clinical services within a stable therapeutic milieu. Partial hospitalization is a general term embracing day, evening, night and weekend treatment programs which employ an integrated, comprehensive and complementary schedule of recognized treatment approaches. Programs are designed to serve individuals with significant impairment resulting from a psychiatric, emotional or behavioral disorder. They are also intended to have a positive impact on the identified patient's support system. Partial hospitals pursue two major functions: 1) Crisis Stabilization and 2) Intermediate Term Treatment. The American Association for Partial Hospitals (AAPH) has published the following admission criteria for partial hospital programs (Block & Lefkowitz, 1995):

1. (a) Psychiatric or psychological signs and symptoms: The patient exhibits serious or disabling symptoms related to an acute psychiatric or psychological condition or an exacerbation of a severe and persistent mental disorder.

(b) Addictive signs and symptoms: The patient exhibits serious or disabling symptoms related to active chemical dependency associated with an addictive disorder or severe relapse following a period of sobriety. However, the patient is not judged to be in imminent danger of withdrawal or has recently undergone medical detoxification.

2. Level of functioning: Marked impairment in multiple areas of daily life is evident.

3. Risk/Dangerousness: Marked instability is present along with a significant risk of psychiatric confinement or medical admission for detoxification associated with an addictive disorder. However, the patient is able to exercise adequate control over his or her behavior and is judged not to be imminently dangerous to self or others.

4. Social support system: The patient has a community-based network of support that assists in maintaining the patient within a least restrictive environment. However, the patient may reveal impaired ability to access or use caretaker, family, or community support.

5. Commitment to treatment and follow through: The patient has the capacity for active participation in relevant components of the program. However, due to psychiatric or addictive signs and symptoms, an inability to form more than an initial treatment contract may be present, which requires close monitoring and support.

6. Level-of-care rationale: (a) The patient has failed to make sufficient clinical gains or has been judged to be unmanageable in a less-intensive level

of care. Or (b) the patient is ready for discharge from an inpatient setting but is judged to be in continued need of daily monitoring, support, and ongoing therapeutic intervention.

History of Partial Hospitals

Partial hospitalization has been in existence since the late 1940s; however its purpose and function have evolved over the years. In the early 1960s, with the introduction of the Community Mental Health Center Act in the United States, partial hospitals were recognized and began to grow rapidly. Partial hospitals were viewed as an integral part of the deinstitutionalization of the mentally ill. During this time, partial hospitals centered around community-based treatment of the severely mentally ill. Cuyler (1991) reviews the history of partial hospitals and states that the programs during this period utilized a rehabilitative and social-learning approach and generally had the following primary goals: 1) support of and improvement of life in the community, 2) symptom relief, and 3) reduction and prevention of hospitalization. The American Association for Partial Hospitalization (AAPH) was established in 1979 and has been an integral part of the development of policies and standards of care for partial hospitals.

In the 1980's, inpatient psychiatric hospitals experienced tremendous growth in the United States. As a result, partial hospitals began to also grow but at a more moderate pace. Focus shifted from solely the treatment of severely mentally ill to treatment of less severely mentally ill. The stigma of psychiatric care was diminishing and more people in the general population

were considering mental health treatment as an alternative. New treatment programs focused on short-term treatment of the acutely ill and also developed specific programs for children, adolescents and the chemically dependent.

The AAPH commissioned a national study of the industry in 1992 to document program characteristics and increase the availability of program information (Culhane, Hadley, & Kiser, 1994). It was critical to understanding trends in partial hospital treatment and to further research in the area. Data were collected from 530 partial hospitals. The following variables were tabulated: organizational type, average daily census, average length of stay, per diem charge, services offered, case mix (by age and diagnoses), referral source, and staffing profile. Survey results showed that most partial hospitals are hospital based or multi-service mental health organizations. Most programs are modest in size: 20% have 1-7 patients, 20% 8-14 patients, 22% 15-21 patients, 18% 22-35 patients and 20% have 36 or more patients. There is a bimodal distribution in the average length of stay of clients with nearly 40% staying 30 days or less and over 30% staying four months or more. It appears that there are two types of partial hospital programs, those committed to brief stays and those committed to long-term stays, with little variability in between. The services provided by partial hospitals vary; however, the most common services are: psychiatric assessment (88%), group therapy (86%), medication management (83%), adjunctive therapy (82%), specialty group therapy (81%), with life skills training and individual therapy following at

71% and 62%, respectively. Most of the services to families fell at 40% and below. Over three-quarters of the people under care in partial hospitals are adults (excluding the elderly). Culhane et al.'s results indicated that the majority (61%) of clients served in partial hospital programs have a severe mental disorder (schizophrenia or affective psychosis). This percentage may be skewed due to limited diagnostic categories made available in the survey. Unfortunately, the only other diagnostic categories available to select were personality disorders (17%), disruptive behaviors (4%), substance abuse (4%), developmental disability (.8%) and other (13%). This does not include popular diagnoses like affective, anxiety and adjustment disorders. Likely some of the patients would have been more appropriately classified in one of these categories. In addition, a primary diagnosis of personality disorder alone is rare in facilities where insurance reimbursement is utilized. It was also discovered that most patients are referred from an inpatient unit (44%) or outpatient unit (19%). The staffing profile showed that master's-level counselors, social workers, and bachelor's-level mental health workers constituted the core full-time service staff. The typical program uses about 40% of a psychiatrist's time and 30% of a psychologist's time.

In the 1990's the health care system in the United States is uncertain. There is an increased focus on cost-containment and third party payors are looking for an alternative to inpatient hospitalization which is extremely costly. Many believe that there will be a thrust to utilize partial hospitals and intensive outpatient programs in lieu of inpatient hospitalization. In many

cases inpatient stays may be eliminated and partial hospitals utilized instead; and in other cases, inpatient stays may be reduced to three to five days and patients transitioned to day treatment. Nevertheless, at present, there is an underutilization of partial hospital services. One reason for this is that the vast majority of mental health care benefit policies have better coverage for inpatient than outpatient services. In many cases partial hospitals are billed as outpatient services, thus reimbursement is a major impediment to wider use of the partial hospitalization services. Another reason is that referral sources are more accustomed to inpatient services and behave accordingly. Cuyler (1991) makes an interesting observation about mental health professionals' acceptance and understanding of the role of partial hospitals in this country. He states that few clinical training sites offer rotations in partial hospital settings. Most partial hospitals that are advancing in short-term treatment of the acutely ill are in the private sector and consequently are not usually clinical training sites. Thus, those rotations that do occur are generally in the rehabilitative programs for the chronically mentally ill or in settings where partial hospital is viewed as a transitional setting from inpatient and consequently not as valuable a treatment modality.

Partial Hospital Research

A direct ramification of the limited exposure of mental health professionals to partial hospitals is a paucity of good research in this setting. It is primarily those in educational institutions and training facilities that produce the majority of research studies. Since their exposure to partial

hospital settings is limited, they are unlikely to seek this population for study. Kiser (1991) concludes: "With little treatment effectiveness research available to compare partial with full hospitalization, there is limited incentive for shifts in reimbursement policies or for traditional referral sources to alter referral patterns" (p.51). The following is a summary of the research findings in the area of partial hospitals to date.

Partial Versus Inpatient Hospitalization

The results of the major outcome studies that compared adult patients in inpatient care with those in partial hospital care were examined (See Table 1, Appendix K). The earliest was a 1964 study by Zwerling and Wilder in which acutely psychotic patients admitted to the Bronx Municipal Hospital were randomly assigned either to inpatient treatment or to day care at the time of admission. All patients were randomly assigned with a total of 189 patients in each treatment. Results indicated that two-thirds of all acute admissions could be treated in the day hospital and that such treatment was at least as effective as inpatient treatment.

Wilder, Levin, and Zwerling (1966) followed up on these patients two years after admission and it was concluded that "the day hospital was a feasible treatment modality and was . . . generally as effective as the inpatient services in the treatment of acutely disturbed patients for most or all phases of their hospitalization" (p.1101). The primary problem with this study was that no attempt was made to keep the patients in the day care setting. Only 39% were treated solely in the day treatment setting. In fact, 34% of the day care

admissions were treated solely in the inpatient setting. Consequently, it is difficult to tease out the true effects of the different treatments because the day care patients were not treated only in that modality.

In 1971, Herz, Endicott, Spitzer, and Mesnikoff compared day hospital with inpatient hospitalization, yet unlike Zwerling et al., they did not randomly assign all patients. Patients who were considered “too healthy” or “too ill” were eliminated from the study; thus, only 22% of the sample were included for randomization. This eliminated the problem occurring in the previous study of mixed treatment conditions, however, the sample size was much smaller (n=90). Subjects were evaluated using the Psychiatric Status Schedule (PSS) and the Psychiatric Evaluation Form (PEF). The day patients showed better results on both evaluation measures at all times assessed; however, the differences between the two groups on these two instruments persisted on only two subscales at the end of the two-year measurement period.

Michaux, Chelst, Foster, Prium, and Dasinger (1973) conducted a study in which 50 patients consecutively treated in a rural day center were compared with 56 patients treated in a psychiatric hospital during the same period. The patients selected from the inpatient group were from rural counties that lacked day treatment facilities, but otherwise would have qualified for this service. Any of the following criteria precluded admission to the partial hospitalization group or the inpatient control sample: dangerous to self or others, behavior consistently antisocial, addicted to drugs

or alcohol, unable to care for self, court ordered, severely mentally retarded or organic brain syndrome. The subjects were evaluated on a number of rating scales at admission, two month post discharge and at one year follow-up. Results found that the inpatient group exhibited greater symptom reduction initially, however at one year follow-up symptomology was similar. The day center patients exhibited superior social performance according to both patients and relatives initially and at one year follow-up.

Washburn, Vanicelli, Longabaugh, and Scheff (1976) randomly assigned patients to either an inpatient unit or day-care unit. Patients who were homicidal, suicidal, or judged by their therapists as absolutely requiring hospitalization were not considered candidates for random assignment (58%). In addition, 27% of the total sample refused or were unable to participate. This left 15% of the total sample, or 59 patients who were randomly assigned to either an inpatient or day-care unit. The results of the study indicated that "for the range of patients studied, day treatment is, on the whole, superior to inpatient treatment . . ." (p.665). Their findings focused on five distinct areas: subjective distress, community functioning, family burden, total hospital costs and days of attachment to the hospital program. These differences between conditions, however, lessened over an 18-month to two-year period of time.

Krowinski and Fitt (1978) compared day-treatment with inpatient care. Patients were randomly assigned to either condition after inappropriate admissions (e.g., violent, suicidal, disorganized or not in need of

hospitalization) were excluded. Thus, 38% of the total patient population considered initially were excluded prior to randomization, leaving 62% or a net sample of 101 patients. Both groups improved on almost all 28 subscales of the Psychiatric Status Schedule (PSS). The day treatment patients improved more than the inpatient group on eight of the subscales including subjective distress, lack of emotion, depressive anxiety, memory disorientation and parent role. The inpatient group improved on only one scale, agitation-excitement. Overall, utilizing categories of impairment, 67% of the day treatment group and 52% of the inpatients were considered to have improved. In a six-month follow-up, differences between conditions had lessened somewhat. During the six-month period, 38% of the inpatient group had been readmitted to the hospital, while 20% of the day treatment group had been admitted.

Penk, Charles, and Van Hoose (1978) wanted to assess whether treatment effects of partial hospitalization were comparable to the effects of full-time hospitalization. The study was conducted on 37 pairs of matched day hospital and matched inpatient admissions at the Veterans Administration Hospital in Dallas, Texas. Subjects consisted of mixed diagnoses (52%) and schizophrenia (48%), but excluded organic brain syndrome, acutely suicidal/homicidal and physically infirmed patients. Improvement was assessed by an evaluation of home and community adjustment by relatives or close friends using the Personal Adjustment and Role Skills (PARS) scale at post treatment and at two months after admission.

Follow-up data were available on approximately 67% of the subjects. All groups evidenced improvement two months after treatment, particularly in areas of symptom reduction. The partial hospital sample exhibited greater gains in the areas of attentiveness and employment however, suggesting a more favorable outcome under the day hospital condition. Penk et al. concluded, "The findings indicated that partial hospitalization is an attractive alternative to inpatient psychiatric hospitalization" (p.94).

Edicott, Cohen, Nee, Fleiss, and Herz (1979) wanted to evaluate treatment effects based on length and type of treatment. Three treatment conditions existed: standard inpatient (60 days), brief hospitalization (11 days) followed by day treatment, and brief hospitalization (11 days) without day treatment. All conditions were followed by outpatient care. There was a total of 175 subjects. Subjects were one-third black. Sixty-three percent were diagnosed schizophrenia and 37% had mixed diagnoses, excluding organic brain syndrome, substance abuse and antisocial personality. Research interviewers used the Psychiatric Status Schedule (PSS) and Global Assessment Scale (GAS) with patients, and the Family Evaluation Form (FEF) with a family member. Therapists completed a GAS and a Mental Status Examination Record. Outcome was evaluated at three weeks, 3, 6, 12, 18 and 24 months after admission. Results indicated that the inpatient treatment was inferior to the two brief treatments. Also, those with a high overt anger score did best in brief hospitalization followed by day treatment. No information was provided on drop-out rate. This study did not compare day

treatment alone with inpatient, however it is still included because of the effects day treatment had in enhancing inpatient treatment.

Dick, Cameron, Cohen, Barlow, and Ince (1985) randomly assigned 91 patients to either day hospital or inpatient hospitalization and evaluated their outcome for up to one year. The inpatient group stayed an average length of 20 days while the day hospital group had 34 treatment days. Outcome was evaluated using the Clinical Interview Schedule (CIS) with patients and by interviewing a family member or friend to establish social performance. Unfortunately, only half of the sample was evaluated on the latter because of unavailability or uncooperativeness of a significant other, and social performance was abandoned altogether due to poor follow-up sampling. A high rate of follow-up existed with patients at four months, inpatient 94% and day treatment 88%. Clinical outcome was similar in both groups. Patient satisfaction was significantly greater with day treatment patients. In addition, day treatment cost was two-thirds less than inpatient treatment cost.

Creed, Anthony, Godbert, and Huxley (1989) wanted to compare the nature and severity of the illness being treated in the day hospital with that of the inpatient unit. The primary aim was to determine if severe psychiatric illness could be treated in the day hospital, primarily because there were too few beds available in the inpatient unit. Sixty-nine inpatients and 41 day hospital patients were evaluated at admission, three months and one year follow-up. Patient mental status was evaluated using Present State Examination (PSE) and patients' social behavior was evaluated by

interviewing a relative or household member using the Social Behavior Assessment Schedule (SBAS). Follow-up data was 84% of patients and 82% of family members at three months. Outcome data indicated that there was only one difference in improvement between the two groups: day patients were regarded as causing significantly less burden at one year. Overall social performance was expected to be superior, but this was not the case. It was hypothesized that those patients admitted to the inpatient unit would have more severe psychiatric symptoms than those in the day hospital, however there was little difference in the two groups. Those diagnosed as schizophrenic and neurotic were evenly split between day treatment and inpatient, however those diagnosed as manic-depressive, organic and personality disordered were primarily treated in the inpatient setting. It was concluded that day treatment was a feasible option for some seriously ill patients, but a random allocation study was recommended to assess this more completely.

Creed et al. (1990) conducted this randomized controlled study of day versus inpatients a year later in Manchester Hospital. This study utilized the same design and measures as the previous study. The only exception was that this time all subjects were randomly allocated. The only exclusions were patients admitted solely for detoxification. Eighty-nine patients with a diagnostic mix of schizophrenia (27%), neurotic disorders (27%), depression (20%), mania (9%), personality disorders (9%), and addiction/organic (8%) were treated. Follow-up was 82% at three months and 79% at one year. At

one year there was no difference between the two groups in any area: psychiatric symptoms, social role performance, abnormal behavior, or burden on relatives. This is similar to the finding of the previous study, except in the area of burden to relatives. At three months, social role performance was greater in inpatients. This is contrary to the findings of other studies which repeatedly showed role performance as better in day treatment settings. In addition, this study differs from all of the other studies cited because of the high proportion of acutely ill patients who could be randomly assigned to either day or inpatient treatment. One important note is that this day hospital had to adopt a high staffing level and a change in treatment philosophy to effectively treat this population. Creed et al. concluded that day treatment is feasible for some patients and that it is not a disadvantage over inpatient care.

Creed et al. (1991) conducted another randomized controlled study in another hospital (Blackburn Hospital) and compared the outcome with the findings of the previous study (Manchester Hospital) to see if findings could be generalized to other district psychiatric services. Another purpose of this study, more than determining treatment outcome, was to obtain a description of the patients who were eventually included in the study at the two hospitals. Fifty-one patients were treated with a diagnostic mix of schizophrenia (24%), depression (20%), mania (14%), neurotic disorders (14%), personality disorders (11%) and addictive/organic disorders (17%). This is very close to the mix in the Manchester hospital. The two hospitals

were also similar in size and in treatment services provided. Manchester was higher in staffing levels, however, and also had more variety of professional disciplines. In regard to social status, Manchester was an inner city area with socially deprived patients all living within three miles of the hospital.

Blackburn was a semi-rural district with some patients living up to 20 miles away. Follow-up data were very similar in both settings. Results revealed no difference between inpatient and day hospital subjects in either facility at one year. The only difference existed at three months in the Manchester hospital, as previously cited (Creed et.al., 1990). Both hospitals were able to randomly allocate a larger portion of patients than previous studies, 58%,and 49% versus 10-22%. The study demonstrated that day hospital is an alternative to inpatient for acutely ill patients, but adequate number of staff and confidence among the staff, patients and relatives is necessary. It also demonstrated that a wide variety of diagnoses can be adequately treated in a day hospital setting; however, Creed et al. determined that it is impossible to treat a number of psychotic, disorganized and suicidal patients in this setting.

A number of reviews have been published on the subject of efficacy of partial hospital treatment compared with inpatient treatment; however, the conclusions are contradictory. Five reviewers (Braun et al., 1981; Creed, Black, & Anthony, 1989; Tantam, 1985; Wilkinson, 1984) have concluded that claims of the superiority of day hospital over inpatient care for severely ill patients are premature because most of the studies have been beset with methodological inadequacies. Two reviewers (Green,& De La Cruz, 1981;

Schene & Gersons, 1986) concluded that day hospital treatment was superior in terms of social adjustment, but in all other respects the evidence was not substantial enough to draw definite conclusions. And three reviewers (Kiesler, 1982; Mosher, 1983; Rosie, 1987) concluded that the evidence was sufficient to determine that day treatment was at least as effective, if not more effective in some cases, than inpatient treatment and should therefore become more widespread.

In reviewing all eleven studies reported here comparing inpatient to day treatment, there were not any cases in which inpatient hospitalization was overall more effective than day hospitalization. In most cases there was found to be no difference between treatments, however several studies showed day hospitalization to be more effective. For instance, day hospitalization was more effective on the outcome variable psychiatric status in four of the eleven studies and equal in the remaining seven studies. Social adjustment or role performance was more improved in day hospital patients in four of the eleven studies. Some studies found greater improvement in day hospital patients in areas of family burden, readmission rates, patient satisfaction and financial costs. Inpatient outperformed day hospital in only two instances: PSS subsale "agitation-excitement" (Krowinski et al., 1978) and role performance at three months (Creed et al., 1990).

It does appear, however, that the research has been beset with methodological problems. Wilkinson (1984) lists the following concerns: "the number of patients tends to be small; often there is selection bias, partial

or no randomization, and little control of important variables such as diagnoses, medication and treatment between discharge and follow-up; day care and inpatient care are often ill-defined; outcome measures are not standardized or rated blindly; and too many patients are lost during follow-up" (p.1710). These methodological problems are addressed as they apply to the studies summarized in this paper.

The average number of patients used in the studies reported was 86 (not including the 1966 Wilder et al. study which had 378 subjects, well above the number reported by any other study). This is an adequate number based on the designs of most of the studies to draw fair conclusions, however, the follow-up rate was not 100% and thus lowers these numbers, jeopardizing the validity of the findings.

The average percentage of patients followed-up on in all eleven studies was 72%. Some of the reported figures were for two month follow-ups while other figures were for as long as two years. This presents the validity problem of experimental mortality. Conclusions drawn from 72% of the subjects cannot be generalized to the entire populations studied. Unfortunately, this problem of experimental mortality is unavoidable in any longitudinal study. It seems unrealistic to expect return rates to consistently be much higher.

The problem of selection bias and partial or no randomization is serious. In all of these studies, selection bias did exist. Only one study included more than 66% of the subjects (Wilder et al., 1966) and three of the studies selected 22% or less to include in the study (Herz et al., 1971;

Washburn et al., 1976; Dick et al., 1985). One study not included in this review was abandoned because only 10 % of all admissions were permitted to be randomly assigned to both treatment settings (Platt, Hirsch, & Knights, 1990). Some of those excluded from the studies were “too healthy” or not in need of treatment, however most were “too ill” to be included. Many clinicians have been unwilling to attempt to treat more severely ill patients in a day hospital setting and perhaps have been too conservative in this regard. Nevertheless, if someone is a serious danger to themselves or others, they are not going to be a viable candidate for most day hospital facilities. After brief crisis management or medical stabilization, many patients may be appropriate for day hospitalization in a relatively short period of time. Kiesler (1982) makes the following conclusion: “It seems quite clear . . . that for the vast majority of patients now being assigned to inpatient units in mental institutions, care of at least equal impact could be otherwise provided (day hospitalization)” (p. 357). Kiesler’s phrase “vast majority” appears to be overstated based on the findings reviewed here.

Another serious limitation of these studies is related to diagnoses. The majority of the patients treated in these studies were severely disturbed (see Table 1). Generalizations, therefore, can only be made to this small and distinct population. Dick et al. (1985) is the only study that did not include schizophrenic diagnoses. Creed’s studies had a more even balance of diagnoses, but even in these three studies, schizophrenics accounted for the highest percentage of patients. Today, more and more patients are seeking

treatment for a variety of non-psychotic disorders and there is little evidence on the success of partial hospital treatment for other diagnoses. Overall, little research has been done to identify patients best treated in a partial hospital setting. Cuyler (1991) believes that this research is critically important and that much is to be learned about the optimal lengths of partial stay for specific disorders.

One of the other problems plaguing the research is confusion due to inconsistent and unclear nomenclature. Some studies use the term day hospital or partial hospital, others the term day treatment, and still others day care. This is particularly confusing to those new to the literature and presents unnecessary barriers to progress. Since the term "partial hospitalization" is so broad, Rosie (1987) recommended classifying the research into three categories: 1) day hospitals, 2) day treatment programs and 3) day care centers. Each of these titles would identify a different population and function. The term "day hospital" would describe partial hospitals that provide diagnostic and treatment services for acutely ill patients who would otherwise be treated on traditional psychiatric inpatient units. The term "day treatment program" would describe partial hospitals with a more diverse function. This would include services for patients who are in some degree of remission from acute illness and/or those who are in transition from hospital to outpatient care. It would be the alternative to standard outpatient care and generally time-limited in nature. The term "day care center" would describe partial hospitals that provide treatment to the chronically mentally ill and whose function is

primarily maintenance. This includes two broad subgroups: those catering to the general psychiatric population and those catering to geriatric psychiatric populations. Rosie (1987) makes an excellent point about the confusion in the literature and makes great strides to clarify the differences; nevertheless, most researchers did not adopt his recommended categories. The literature continues to mix nomenclature and in many cases never identifies which specific population is being studied. This problem greatly limits the generalizability of the findings.

Wilkinson's (1984) final criticism that outcome measures are frequently not standardized or rated blindly seems overstated. The majority of the studies cited here utilized standardized rating instruments such as the Psychiatric Status Schedule (PSS), Global Assessment Scale (GAS), Present State Examination (PSE) and Social Behavior Assessment Schedule (SBAS). Some studies utilized less standardized methods, such as structured interviews and mental status exams; however, this was seldom the case, and when used, these methods were often supported by standardized instruments. Many studies also examined readmission rates which is easily and clearly definable. It is difficult to determine how many studies were rated blindly based on the information provided. A review of other partial hospital studies with adults follows (see Table 2).

Partial Hospitalization Versus Outpatient Treatment

The results of two major studies comparing adult patients in a partial hospital setting with outpatients were examined. Glick et al. (1986) conducted

a study to determine which method of post hospital care is most effective; six-twelve weeks of an intensive day hospital or the same period of weekly outpatient group therapy. The assumption was that extra time and effort provided immediately after discharge would result in increased function and decreased rehospitalization down the road. Seventy-nine patients were randomized to the two treatment conditions, 22 (28%) dropped out of treatment, most from the outpatient group. Results indicated that there were no differences in outcome at discharge, six or 12 months follow-up. Because 43% of the outpatient sample dropped out of the study, the conclusion that outpatient treatment is equally as effective as partial hospitalization cannot be made.

Tyrer, Remington and Alexander (1987) compared outpatient care with two types of day hospital treatment. One of the day hospitals specialized in psychotherapy, had a higher level of staffing and catered to patients with neurotic disorders, while the other day hospital catered to a wider range of psychiatric disorders and offered all types of therapeutic treatments. They also examined differences in outcome between depressive, phobic and anxiety neurosis patients. One hundred and six patients were randomly assigned to the three treatment conditions and measures of psychiatric symptomology and social adjustment were collected. Of the 106, 78 completed the assessments at admission and after four, eight, and 24 months. Overall, there was no difference in response to treatment between the three types of care and no significant difference in outcome between depressive, phobic and anxiety

neurosis patients. Tyrer et al. (1987) concluded from this study that day hospital treatment of neurotic disorders is not a necessary part of psychiatric services because there is no demonstrative benefit to this treatment over outpatient treatment. Tyrer et al. also concluded that for most purposes, neurotic patients can be treated as a relatively homogenous group. Length of treatment was not reported, therefore it is difficult to assess the validity of this conclusion. How many hours did patients spend in treatment in both settings and over what period of time? Also, it was reported that day treatment was followed up with outpatient treatment which greatly confounds the effects. In addition, a number of patients (40%) were not even included in the study because they were not appropriate for both day hospital and outpatient treatment and much should be learned about these patients. Some differences in outcome between the three groups were shown, however not at the two year measurement mark. For instance, the general day hospital had its greatest therapeutic impact early in treatment and had the best outcome at the four month evaluation. The specialized day hospital showed the opposite trend, with relatively poor improvement after four months, yet steadily greater improvement thereafter, so that after two years this group had the best social adjustment and symptomatic outcome. The outpatient condition occupied an intermediate position in outcome.

Partial Hospitalization Treatment of Specialized Diagnostic Groups

Few studies were found that compared partial hospital treatment of patients of different diagnostic categories. The study just discussed by Tyrer et

al. (1987) did compare the treatment of depressive, phobic and anxiety disorders, not finding any difference in treatment outcome among the groups, but some of the problems with this study have already been discussed. Most of the inpatient versus day hospital studies were conducted with schizophrenic or severely mentally ill patients and this is perhaps the most thoroughly researched population in the partial hospital treatment literature.

Piran, Langdon, Kaplan and Garfinkel (1989) conducted a study evaluating the effects of day hospital treatment on eating disorders. The first 53 patients referred to the day hospital who were diagnosed with an eating disorder were included in the study. Patients attended treatment five days a week for two to four months. The subjects were divided into two categories based on DSM-III-R diagnostic categories: anorexia nervosa and bulimia nervosa. Overall outcome was measured by weight gain in anorexic patients and reduction in binges and purges in bulimic patients. A number of psychometric instruments were also administered. Data were collected at admission, one, three and six months follow-up. Forty percent of patients completed the study. There was a significant weight gain for the anorexic patients; 74% gained over one pound a week during the average 12 week stay in the program. There was a significant decrease in the average number of binges per week in the bulimic group; a reduction of 75% in binges was present in 88% of patients within the study period. Piran et al. (1989) concluded that day hospitalization is an effective form of treatment for both anorexic and bulimic patients. They were cautious in their conclusions

however, encouraging readers to understand that this was only the first outcome evaluation in what should eventually involve a larger sample in a detailed long-term follow-up. Ultimately, they hoped to conduct a controlled investigation comparing day hospital with other modes of treatment.

In summary, it appears that partial hospital treatment of neurotic disorders, schizophrenia or other severely ill diagnoses and eating disorders is effective and does improve level of functioning. The treatment of neurotic disorders, however, may just as effectively be carried out in outpatient settings and little is known about the benefits of partial versus other methods of treatment of eating disorders.

Partial Hospitalization Treatment Outcome Predictors

Bowman, Shelley, Sheehy-Skeffington and Sinanan (1983) conducted a prospective study of the criteria and characteristics associated with the admission of acutely ill psychiatric patients to inpatient and partial hospital care. In general, they believed that day patients were not representative of inpatient populations. Thus, they systematically examined the factors contributing to the selection process. Over a four month period, they analyzed all 54 patients admitted to the inpatient hospital and all 43 patients admitted to the day hospital. Results indicated that day hospital patients in this community were significantly younger, had shorter psychiatric histories, were considered less severely ill and had more insight into their illness. Hospital patients were more often diagnosed schizophrenic, had poorer employment histories, and perceived their families as less supportive. Also,

in the case of hospital patients, admission was more often requested by them or their families. Findings also showed that the consultant to whom the patient was referred had a significant effect on the setting the patient was placed in for treatment.

Yoash-Gantz and Gantz (1987) sought to examine the effects of patient attitude on treatment outcome. Sixty-nine of 83 consecutive patient admissions were administered the Symptom Checklist-90-R (SCL-90-R), designed to assess general symptomology, and the Colorado Psychiatric Hospital Factor Attitude Scale (CPH), designed to assess patient attitude toward treatment at admission and at discharge (30 treatment days or six weeks). It was hypothesized that patients with favorable pretreatment attitude would benefit more than those with unfavorable pretreatment attitude. This hypothesis was not supported. In fact, it was found that pre to post treatment symptom intensity was significantly reduced, regardless of attitude and that an unfavorable pretreatment attitude shifted to a more positive one by the end of treatment. In addition, those leaving the program Against Medical Advice did not have a less favorable pretreatment attitude and those with a previous history of state hospitalization did not have a less favorable pretreatment attitude. The results of this study do not support the notion that patient attitude directly affects treatment outcome in partial hospital treatment. Information was not provided on the type of population treated, therefore nothing can be said about the impact of diagnoses on the results.

Vidalis and Baker (1986) conducted a retrospective study of 100 patients admitted to a psychiatric day hospital to determine whether patient characteristics at the time of admission would aid in predicting which patients would benefit from treatment and which would not. Vidalis et al. hoped to use this information to reduce inappropriate referrals. The population studied was relatively older and mostly socially disadvantaged. Outcome was assessed by analyzing frequency and duration of attendance, transfer to inpatient care and return to employment of unemployed patients. None of these outcome measures showed significant differences when groups of patients were compared according to age, sex or diagnoses. Similarly, no differences were found between patients living alone and those living with families, between those employed and those unemployed, between patients referred from inpatient care and those referred from outpatient, or when patients were compared according their preferred types of day hospital activities. Vidalis et al. was discouraged that their attempt to use "common-sense" clinical indicators to determine who would most benefit from day hospital treatment was unsuccessful. Findings might have been different, however, had Vidalis et al. been able to acquire more objective outcome indicators. Frequency was defined as greater than 75% of expected attendances and duration was defined as four weeks or longer in treatment. Perhaps some differences did exist, but were not reflected in frequency and duration of attendance or return to employment. Sometimes "common-sense" does not

dictate outcome. If that were the case, research studies would largely be unnecessary.

Vidalis, Preston and Baker (1990) decided that perhaps a better way to predict success in day hospital treatment would be to use the opinions of experienced and skilled day hospital staff. Fifty-six patients of mixed diagnoses were evaluated at admission on measures of depression, self-esteem, talkativeness and sociability. These measures were again administered at six weeks and change scores were generated to determine amount of improvement. After the patient had attended the day hospital for two weeks, two members of the staff independently made a prediction using a 5-point scale, as to whether the patient was likely to be helped by day treatment. These scores were compared with actual improvement. Complete data were obtained on 73% of the patients at six weeks. Patients showed improvement on all of the measures at six weeks follow-up, indicating overall improvement in the clinical condition of the patients as a group. Staff predictions correlated positively with the outcome findings. Not enough data were available on the 27% patient drop outs to determine if staff could have effectively predicted them as failures. Vidalis et al. (1990) greatly improved on the 1986 study, rejecting attendance in treatment, return to employment and rehospitalization as criteria reflecting treatment benefit, but rather used objective standardized rating scales tapping a variety of areas. Staff predictions seemed to accurately reflect actual improvement.

Sullivan and Grubea (1991) conducted an uncontrolled study of a specific partial hospital program to determine which patients did best in this program. The patients treated were in remission from an acute illness. Most were transitioning from inpatient care and over 70% had diagnoses of schizophrenia. Forty-four consecutive admissions were assessed at two weeks after admission, two months later and then at the time of discharge (six months). Two rating scales were administered: the Self Assessment Scale (SAS) was completed by interviewing the patient and the Global Assessment Scale (GAS) was completed by the clinician. Sullivan et al. predicted that the program would work best when there was a concurrence of viewpoint between patient and clinician, whether positive or negative. Results did not support this hypothesis. The low correlation between patient and clinician scores was speculated to be due to the lack of insight of the patients who were acutely mentally ill. Another possibility is that two different instruments were used (SAS and GAS) testing different areas of functioning and this could have easily led to different reports. Also, no correlational data were provided comparing the instruments. Nevertheless, clinician's low ratings on the GAS at the initial assessment did predict early drop out. Also, patients who did best in this treatment program had higher GAS scores overall. This is consistent with Vidalis et al.'s (1990) findings in which staff were effective at predicting treatment success. It could also mean that GAS scores are good predictors of treatment success.

Koistinen et al. (1992) conducted a retrospective three year follow-up study of 73 patients treatment in a day treatment program in the hopes of discovering the outcomes of day treatment and the characteristics of patients who benefit from this treatment. The population studied included a large number of patients who had severe diagnoses (30% schizophrenia), were older and often disabled and were receiving social security benefits. Rehospitalization during the three years post discharge was used as the outcome criterion. Prior to day hospital admission, 49% of the patients had been previously hospitalized. During follow-up years, 32% of the patients were rehospitalized. Koistinen et al. concluded that day treatment did not reduce the number of rehospitalization in patients, although it did reduce the length of stay of rehospitalization. One major problem with this study is the lack of a control group. It is impossible to determine if rehospitalizations are reduced without a control group. Given the probability that rehospitalization greatly increases over the years with schizophrenic patients, perhaps the occurrence is less than expected for this population. Another problem is that only one outcome variable was used. Koistinen et al. made his purpose statement too broad (i.e., what are the outcomes of day treatment and who are the patients benefiting from this treatment?). Just because rehospitalizations occur does not necessarily mean that treatment was not beneficial or does not yield a good outcome. The purpose should have simply been to determine if partial hospitalization eliminated or reduce rehospitalizations.

Kamis-Gould, Markel-Fox, Megivern, Hadley and Thompson (1995) conducted a retrospective evaluation of outcomes of a private chain of partial hospital programs. Data were collected from patient records to measure short-term treatment effects of all patients admitted over a one year period to several partial hospital sites. Of the 116 adult patients admitted, the majority were white females of middle social economic status with diagnoses of affective or anxiety disorders. Only 8% were diagnosed with psychosis or schizophrenia. The average length of stay was 20 days. Outcome was evaluated using the following data sources: 1) DSM-III-R Axes IV and V ratings at admission and discharge, 2) a 16-item unpublished checklist completed by a clinician assessing level of functioning at admission and discharge, 3) patient satisfaction questionnaire administered at discharge, 4) clinician ratings of patient attainment of treatment goals on a scale of 1 to 3 (all, many, few or none) at discharge, and 4) overall improvement ratings by a clinician at discharge using a 5-point scale from greatly improved to worsened. Results showed little change in level of stress using the DSM-III-R Axis IV ratings and only slight improvement in level of functioning using the DSM-III-R Axis V ratings. Clinician ratings of attainment of treatment goals rated only 10% of patients as having fully attained goals, and over 45% as having attained few or none of their treatment goals. Significant improvement in level of impairment was found utilizing the clinician checklist. Clinician ratings of general improvement rated 30% greatly improved, 31% moderately improved, and 37% rated as only minimally

improved or not improved. Patient satisfaction with the treatment program was good, with most reporting that the program was much better than expected. Most were also willing to recommend the center to others. Interestingly, Kamis-Gould et al. (1995) concluded that DSM-III-R Axes IV and V ratings were not suitable methods to assess change and that clinician ratings are less sensitive to improvement than a more standardized type instrument. This may be true, however, it cannot be concluded based on the findings. Three of the evaluation methods reflected patient improvement and three did not. This could mean that there were problems with the instrumentation and data collection, but it could also mean actual lack of improvement in some areas over time. Also, all of the methods of assessing outcome with the exception of patient satisfaction surveys, were clinician ratings/observations. None were instruments completed by the patient or asking patients questions. The latter was not discussed and probably was not done because it was a retrospective study. Finally, another possibility is that a 20 day stay is too short to bring about significant levels of change.

Purpose of the Study

The overall purpose of this study is to complete an in-the-field program evaluation study at a specific partial hospital in the Southwest. The findings should yield valuable information for this particular facility and aid in improvement of treatment in the future. It provides the beginnings or starting place for this facility to gather data and lays the groundwork for more specific research in the future. This study will provide a practical, efficient,

comprehensive model for other adult partial hospital facilities to use for conducting outcome studies in their facilities. In addition, this study samples a different population than most of the previous studies and will provide information on the acutely ill rather than the chronically severely mentally ill. Finally, the findings can be added to the overall pool of studies conducted in partial hospital settings, thus contributing to the treatment effectiveness research overall. Metaanalysis of a number of partial hospital outcome studies would increase the generalizability of the findings.

The specific purpose of the study is to assess patient improvement in two specific areas: 1) symptom reduction and 2) social adjustment. In addition, general global ratings are more subjectively assessed from two perspectives: 1) patient evaluation and 2) therapist evaluation. Family or significant other ratings would have added a third valuable perspective to this study; however, due to practical limitations of the study, they were not obtained. The primary questions which are being considered are:

- 1) Do patients who participate in partial hospital treatment improve?

Previous outcome research leads to general conclusions that, overall, psychological treatments are beneficial (Garfield & Bergin, 1986). This study is interested in the degree of improvement and type of improvement (i.e., symptom reduction and social adjustment), and how this improvement is assessed by patient self-report and an outside rater (i.e., patient's individual therapist on the treatment team).

2) Do patients who participated in partial hospital treatment maintain improvement three months after discharge? For treatment to ultimately be effective, any improvement made must be maintained over time. If a patient's condition improves between admission and discharge, but then several months down the road regresses back to the original condition when treatment was sought, then the treatment in effect was pointless. Patient's must gain insight and learn skills that help them to make long-term changes to themselves and/or their environment which allow them to maintain gains made during treatment.

3) Do patients and therapists perceive the level of improvement equally or is there a difference between the patient's assessment of his/her own improvement and the therapist's assessment of the patient's improvement? To the researcher's knowledge, this has not been closely researched. Studies have utilized therapist ratings as another measure of patient improvement, but this was not compared with patient's self-reported level of improvement. For example, Vidalis et al. (1990) used the ratings of day hospital staff to predict the success of treatment and found the results correlated positively with outcome. Sullivan and Grubea (1991) studied the correlation between patient and clinician ratings of improvement and found that the correlation was low. One problem however, was that two different instruments were used and the patient rating was assessed through interview format. Many possible findings could result in this study. Perhaps the patient believes he/she has made great strides and is greatly improved, but the

therapist believes that the patient is not being realistic and is avoiding facing the real issues and consequently does not rate patient improvement as high. On the other hand, the therapist may believe that the patient has greatly improved, but the patient still has some perfectionism problems and is dissatisfied with this improvement since the level of perfection has not been attained. Finally, it is likely that both patient and therapist will rate improvement level equally and this is what is hypothesized in this study. Both will be utilizing the same rating measure to reduce problems related to instrumentation.

4) Do patients' subjective ratings of self improvement correlate with their more objective standardized ratings of improvement (i.e., symptom ratings and social adjustment ratings)? In other words, how accurately are patients able to assess their own level of functioning? Green, Gleser, Stone and Siefert (1975) reported that global ratings of patients showed very high rates of improvement, but specific symptom ratings did not show such high ratings and sometimes showed intensification of some symptoms and a generally more conservative improvement rating. Many programs are using patient satisfaction surveys as their sole assessment of effectiveness.

Although consumer satisfaction is important, scientists must go further and utilize other factors in assessing the effectiveness of our services. The correlation between these various methods of ratings will be assessed in this study.

5) Do therapists' ratings of patient improvement correlate with the objective patient ratings of improvement (i.e., symptom ratings and social adjustment ratings)? In other words, how accurately are therapists able to assess patient level of functioning? Again, Vidalis et al. (1990) analyzed this in a day hospital setting and found a positive correlation between clinician ratings and outcome.

Making Effective Use of Mailed Questionnaires

Since a portion of this study involves mailed questionnaires, it is important to review the literature on maximizing response rates to mailed questionnaires. Most of the research in this area is dedicated to studies which are solely mailed. Since this study is a combination of one-to-one personal contact and a mailed follow-up, it differs significantly. Nevertheless, the mailed portion of the study can be greatly enhanced by this area of research.

Baumgartner and Heberlein (1984) have completed a quantitative review of approximately 254 mailed surveys and have analyzed factors which contribute to effective response rates. The first factor analyzed was "sponsorship". They found that government sponsored and university sponsored studies obtained higher response rates than studies with other sponsors. This study will have a dual sponsorship: 1) The University of North Texas, and 2) the psychiatric partial hospital. Based on Baumgartner & Heberlein's findings, it is believed that the university sponsorship of this study will add prestige to the project and enhance responses.

The second factor analyzed was "respondents". Baumgartner and Heberlein (1984) found that higher response rates should be expected if respondents are in school or army populations. This finding is not particularly pertinent to the present study since all respondents will be psychiatric patients.

The third factor analyzed was "salience". It was found that salience has a powerful effect on response. The more salient the surveys were judged to be by the participant, the greater the response rate. It is believed that the purpose and content of this study will be perceived as highly salient by the participants. Subjects will likely be very concerned with their progress and improvement as it relates to the treatment which was provided. The content of the questions will be very personalized, and therefore, of particular interest to each participant, unlike many mailed questionnaires which may or may not be surveying an area of interest to the participant.

The next factor analyzed was "follow-up contacts". Follow-up contacts refers to the contacts made after the first contact has failed to yield a response. Baumgartner & Heberlein's literature review concluded that the number of follow-up contacts was the best single predictor of final response rate. These follow-up contacts could be in the form of an appeal letter or a telephone call, and both produced higher response rates. Heberlein and Baumgartner (1981) found that including the questionnaire in a follow-up letter improved response rates slightly, yet stated that the additional cost involved may outweigh this slight increase in response. Swan, Epley and Burns (1980)

found in a survey of real estate professionals that including a copy of the questionnaire in the first follow-up mailing produced no increase in response, but it was nearly twice as effective on a second follow-up mailing. As a result of these findings, it was decided that for the purpose of this study, the first follow-up contact will be in the form of an appeal letter only. The second follow-up contact will be a telephone call and a follow-up mailing of the questionnaire packet. No further contacts will be made.

The fifth factor analyzed was "incentives". This is the most widely researched factor related to improving survey responses. The literature spans several aspects of incentives, including type of incentive, amount of incentive, prepaid vs. promised and initial incentive vs. follow-up incentive. Baumgartner and Heberlein's (1984) review of the literature leads to the following conclusions: 1) small monetary incentives produce greater responses than other physical incentives, such as books, pens, charity donations, or no incentives; 2) there is very little evidence of the effect of incentives greater than \$1.00; however the number of studies utilizing larger amounts is sparse; 3) prepaid incentives produce greater responses than promised incentives or no incentives; and 4) in studies where more than one follow-up contact is used, incentives enclosed in the first mailing vs. the second or third mailings yielded very little differences. Therefore, it was decided for the purpose of this study, to include an incentive for all subjects who complete all three assessments as an incentive to insure the highest return rates possible. It was decided to offer a book from a list of several

choices authored by the treatment clinic. The book was decided to be more effective an incentive than money in this case because of the specific applicability to all patients and because of the authorship.

The sixth factor analyzed was "length". The effect of length of a questionnaire on response rates has been widely researched, yet no salient findings have been uncovered. Heberlein and Baumgartner (1978) found that the length of a questionnaire measured by the number of pages, the number of items, or the estimated time of completion had no effect on the final response rate. Heberlein and Baumgartner concluded that the longer questionnaire may require more from the respondent, yet it may convey that the study has substance and is important. Childers and Ferrell (1979) found that the size of the paper (i.e., 8 1/2 x 11 vs 8 1/2 x 14) had a significant effect, but that the number of pages yielded no significant effect. Hornik's study (cited in Heberlein & Baumgartner, 1984) found that, although the actual length of the questionnaire did not affect response rate, the time cue in the cover letter did. Respondents who were informed that the time required to complete the questionnaire would be approximately twenty minutes had a significantly greater response rate than respondents who were informed that the time required would be approximately forty-five minutes. The mailed questionnaire in the present study will be eight pages in length, include two instruments and a one page information sheet, and will be on 8 1/2 x 11 size paper. The cover letter will include a time cue which will state that the questionnaires are brief and should only take 15-20 minutes each to complete.

The entire packet will take approximately forty-five minutes to complete, but in light of the above cited research findings, it is judged to be best worded in the time cue as "15-20 minutes each". Although this strategy has not been researched, it appears to be the best compromise to maximize response rates.

The next factor analyzed was "anonymity". The literature on anonymity are mixed. Overall conclusions are that anonymity is not required to get high response rates, and that in many studies, even when anonymity was guaranteed, respondents responded by putting their return address on the envelope (Skinner & Childers, 1980). Nevertheless, in the present study, anonymity will be assured, particularly because of the highly personal nature of the requested information. The questionnaire packet will be pre-coded with a code number which will not reveal the identity of the subjects; however the primary investigator will have a master key which will link code numbers with subjects' names. Subjects are aware of this and are also aware that the master key will be destroyed after all the data are collected.

The eighth factor analyzed was "personalization" and the data are conflicting in this area. Some researchers, such as Dillman (1978), suggest that personalization of cover letters and mailing envelopes affects response rates positively. Heberlein and Baumgartner did not find this to be true in their 1978 study. It appears that definitive research in this area is not available. Most of the studies do not clearly isolate the personalization variable, and therefore, the findings are confounded with other variables. In the present

study, the cover letters will not be personalized; however the mailing addresses on the envelopes will be handwritten.

The ninth factor analyzed was "deadline". Heberlein and Baumgartner (1984) concluded that time deadlines can improve response rates. Three week deadlines appear to yield the best response during the initial mailing and the first follow-up mailing, yet effected little difference for the second follow-up and thereafter. The present study will utilize the three week deadline method in the initial mailing and the follow-up mailings.

Finally, the tenth factor analyzed was "postage". Heberlein and Baumgartner (1984) reviewed all of the studies in this area and discovered that the findings were mixed. Some studies showed that regular first-class stamps and commemorative stamps yielded higher response rates than metered postage. Other studies showed no difference in the type of postage. It was generally recommended that third-class postage not be used unless the investigator is very confident of the addresses. The literature did show a consistent finding in the use of certified mail. Tedin and Hofstetter (1982) demonstrated that the use of certified mail for the initial mailing produced significantly higher response rates and that the use of certified mail for the second mailing produced even higher response rates. In the present study, first-class metered postage will be used for both the outer envelope and the inner envelope on the first mailing and first follow-up. However, on the second mailing, certified mail will be used for the outer envelope.

All of the applicable and feasible recommendations provided by Baumgartner & Heberlein have been incorporated in this study. It is believed that this will maximize the response rates. In addition, other factors are believed to enhance response rates: 1) the subjects familiarity with the measures (the same measures filled out on two previous occasions), 2) the subjects personal familiarity with the investigator, and 3) projected loyalty to the facility which provided the service.

CHAPTER 2

METHOD

Sample

The sample consisted of 35 patients (15 male and 20 female) between the ages of 24 and 66 ($\bar{X} = 40.7$) admitted to a small free-standing psychiatric partial hospital in the Southwest during the five month period between March 1997 and July 1997. Each patient voluntarily agreed to participate in this study and understood that the decision not to do so would not affect his/her treatment. Tables 3 and 4 present demographic and descriptive clinical data respectively characterizing the subjects. The population is all white, primarily married, well educated and employed with middle to upper middle income status.

The sample size was determined based on recommendations from several sources since there are no exact rules for determining sample size. The central limit theorem states: If a population has a finite variance σ^2 and a mean \bar{X} , then the distribution of sample means from samples of n independent observations approaches a normal distribution with variance σ^2/n and mean \bar{X} as sample n increases. When n is very large, the sampling

distribution of is approximately normal. Flury and Riedwyl (1988) state that “as a general rule, multivariate methods do not work if the number of observations, n , is less than the number of variables. If n is not considerably larger than the number of variables, say at least three or four times as large, multivariate methods are often not very powerful and depend too strongly on certain assumptions. . . it is desirable, as a rule of thumb, for n to be at least ten times as large as the number of variables” (p.9). Hays (1963) states that “In a great many instances in psychological research, a sample size of 30 or more is considered large enough to permit a satisfactory use of normal probabilities to approximate the unknown exact probabilities associated with the sampling distribution of \bar{X} ” (p. 239-240). Flury and Riedwyl are suggesting at least a sample size of ten per cell. Hays recommends 30 per cell as large enough for satisfactory results. In order to decrease the probability of a Type II error in this study, the goal was to accrue 30 subjects per cell, but a minimum of 20 subjects per cell was acceptable. This satisfied the requirements of standard statistical guidelines. Thirty-five subjects completed the questionnaires at admission and discharge and 25 completed the questionnaires at three-month follow-up (71.4%)

Measures

Symptom Check List-90-Revised (SCL-90-R; Derogatis, 1983). This test consists of 90 items which assess symptomatic behaviors of psychiatric outpatients. Patients are asked to describe how much each problem has

bothered or distressed them during the past seven days on a 5-point scale ranging from "not at all" to "extremely". The instrument delineates nine primary symptom dimensions: Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation and Psychoticism. In addition, three general scores are generated: Global Severity Index (GSI), Positive Symptom Total (PST), and Positive Symptom Distress Index (PSDI). The nine scale scores show the mean responses of patients to the items for each scale. The GSI equals the total score for all items divided by the number of items answered; the PST equals the total number of symptoms; the PSDI equals the relative severity of symptoms. According to Derogatis (1983) the GSI provides the best single measure of psychological disturbance. In this study the GSI will be used as the index to assess level of functioning. Due to the high intercorrelations between the nine primary symptom dimensions, it was determined that these scores would not be particularly useful in this study. The SCL-90-R has high internal consistency ($\alpha = .85$) and test-retest reliability ($\alpha = .80$). These reliability coefficients were not directly reported for the GSI; consequently, the reliability coefficients were computed by averaging the reliability coefficients reported for each of the nine symptom dimensions.

The SCL-90-R was designed for both clinical and research purposes and takes approximately 20 minutes to complete. It has been effectively utilized in comparative treatment studies which involve repeated assessments of the

symptom picture across time with both outpatient and inpatient populations (Hoffman & Overall, 1978; Snyder, Lynch, Derogatis, & Gruss, 1980). This instrument is recommended by Waskow and Parloff (1975) and Beutler and Crago (1983) as the best symptom specific measure to be used in outcome studies.

Social Adjustment Scale Self-Report (SAS-SR; Weissman & Bothwell, 1976). This test consists of 54 items which assess social adjustment in six major areas of functioning: work (outside the home, inside the home, as a student), social and leisure activities, relationship with extended family, marital role, parental role, family unit roles and economic independence. This instrument assesses functioning over a two week period. The items are scored on a 5-point scale with a higher score indicating impairment. There are two scoring systems: 1) an overall adjustment score, which is the sum of all items divided by the number of items actually scored, and 2) a role area mean score, which is a sum of the items in a role area divided by the sum of the items actually scored in that area. In this study, an overall adjustment score will be used as the index to assess level of functioning. The items in each area are organized to evaluate four aspects of role functioning: 1) patient's performance at expected tasks, 2) amount of friction with others, 3) interpersonal relations, and 4) inner feelings and satisfactions. It has high internal consistency ($\underline{r} = .74$) and test-retest reliability ($\underline{r} = .80$).

The self-report instrument takes approximately 15-20 minutes to complete. It is sensitive to change and consequently useful in patient outcome studies. This instrument was selected because of its self-report format, brevity of use, simple straight-forward wording, and focus on middle class values. It was also selected because of its emphasis on interpersonal relations and satisfactions, since many of the benefits of psychotherapy are in these areas.

Patient Evaluation Form (PEF; Beutler & Crago, 1983; see Appendix A). This is a modified version of a sample instrument developed to assess areas of change in psychotherapy. The instrument consists of six items which assess patients' subjective perception of change as a result of treatment. Patients are asked to rate the severity of their problems at the time they first came into treatment and at present, on a 7-point scale ranging from "severe problems" to "no problems". The mean difference between the two ratings represents a measure of treatment related change. The rating includes a global estimate of change in condition as well as specific areas in which patients note the greatest change. In this study, the global estimate is used.

Patients' subjective ratings of felt improvement are popular and frequently incorporated in psychotherapy outcome research. Cartwright (1975) presents evidence that some specific patient posttreatment rating questionnaires correspond with other assessments of change at a sufficiently high level to conclude that they are reliable and valid. However, others have

questioned this method of improvement rating, stating that it is highly influenced by the patient's condition at termination and lacks sensitivity to initial levels of disturbance (Garfield, 1978). The Patient Evaluation Form was developed as a possible solution to this criticism by requiring patients to rate initial levels of disturbance as well as current status at treatment termination. Despite these criticisms, Garfield and Bergin (1986) believe that the use of personal evaluations in outcome studies are warranted. The PEF is included in this study because it is popularly used in other program evaluation studies and often the only form of evaluation of improvement.

Therapist Evaluation Form (TEF; Beutler & Crago, 1983; see Appendix B). This is a modified version of the Patient Evaluation Form developed to assess areas of patient change from the therapist's perspective. The instrument consists of six items which assess the therapist's subjective perception of change as a result of treatment. The patient's individual therapist is asked to rate the severity of their patients' problems at the time they first came into treatment and at present, on a 7-point scale ranging from "severe problems" to "no problems". The mean difference between the two ratings represents a measure of treatment related change. The rating includes a global estimate of change in condition as well as specific areas in which patients note the greatest change. In this study, the global estimate is used.

Therapist report used to be the sole source of information about treatment outcome, but according to Lambert (1983), evaluation of outcome by therapist has dropped drastically to relative obscurity. Nevertheless, most reviewers (Beutler et al., 1983; Garfield et al., 1986) recommend a variety of instruments and a variety of sources to obtain the most accurate assessment of change. Consequently, an additional source other than the patient has been included in this study. The individual therapist conducts individual therapy with the patient three times per week for 45 minute sessions. The individual therapist is the patient's case manager and coordinates the entire treatment, developing the treatment plan and working with family or significant others when available. The individual therapist may or may not have other contact with the patient during treatment (e.g., education group or process group leader).

Information Sheet (IFS; see Appendix C and D). These are brief one page questionnaires used to obtain specific data at admission and three months post discharge, respectively. The admission Information Sheet obtains basic demographic data. The post discharge Information Sheet asks questions about continuing care or follow-up treatment.

Intervention

The New Life Day Hospital is a private, non-profit freestanding partial hospital located in a suburb of urban Dallas. The facility is two story, spacious and comfortable. It has a living and kitchen area, library, individual therapy

and group rooms, large occupational therapy shop, game room and exercise facility. The staff-patient ratio is 1:4. The professional staff consists of psychiatrist, psychologist, registered nurse, licensed professional counselors, social workers, and occupational therapist.

This partial hospital program provides day treatment, Monday through Friday, 8:00 a.m. to 5:00 p.m., particularly to adults with affective disorders, anxiety disorders, and personality and adjustment disorders. The maximum census is twenty (20) and the expected averaged length of stay is three weeks. Services are provided five (5) days per week. The treatment services encompass a Christian orientation and environment and integrates medical, psychological, and spiritual principles. The treatment program is primarily designed to meet the needs of individuals who are educated and come from middle to upper socio-economic status.

The hospital is accredited by the Joint Commission Accreditation of Hospital Organizations (JCAHO) and adheres to all the guidelines and standards for partial hospitals. The program structure provides the framework for the process of admission, assessment and psychological testing, treatment, discharge planning and continuing care for all patients. The core program, provided by a multidisciplinary team, consists of carefully coordinated multi-modality, interconnected therapies within a therapeutic milieu. The following treatment modalities are offered: medical/psychiatric management, individual therapy, group therapy, psychoeducational group,

family/marital therapy, expressive therapies, Bible study, fitness/stress management/recreation. All patients receive this uniform treatment; the only variation is with family/marital therapy which depends on the availability of relevant others' participation (see Appendix E). Each treatment modality is described below:

Medical/Psychiatric management. All of the patients admitted to the program are evaluated by a psychiatrist and receive a history and physical examination by a physician unless they have received one in the previous 30 days. As a part of this evaluation, consideration is given to the question of whether pharmacologic treatment is indicated. In those instances where pharmacologic treatment does seem indicated, this treatment modality is offered to the patient. Medications are not dispensed by the program; rather prescriptions are given and patients fill the prescriptions at a pharmacy and self-administer medications. All patients are seen daily in psychiatric rounds for approximately 15 minutes. The purpose is to assess medical status, response to medication, and overall improvement of the psychiatric condition. When the attending psychiatrist/physician deems a medical consult is desirable, an appropriate specialist is contacted by his/her request.

Individual therapy. Individual therapy occurs three days a week for 45 minutes per session and is led by a master's-level therapist. The goal is to help patients gain a clearer understanding of emotional difficulties and to work through internal conflict and interpersonal issues. The individual

therapist is the case manager for the patient also, and coordinates individual treatment with the treatment team in accordance with the treatment plan.

Group therapy. Group therapy meets once a day, five days a week, 1 1/2 hours per day and is led by a master's-level therapist. This group provides the opportunity for patients to express thoughts and feelings as they spontaneously occur in a permissive, supportive and relatively unstructured atmosphere and to help them understand and appreciate their significance in relation to personal and interpersonal functioning. This group utilizes group process to a greater or lesser degree to eliminate personal and interpersonal dysfunction, develop better communication skills and foster socialization.

Psychoeducational group. This is a specialized group which meets once a day, five days a week for one hour per day and is lead by a psychologist or masters-level therapist. These groups are structured around a specific topic such as communication skills, dysfunctional families, handling emotions (e.g., anger, guilt, depression, anxiety), parenting skills, irrational beliefs, nutrition, stress management and so on. The presentation utilizes multi-formats including lectures, discussions, books, videos and handouts.

Family/Marital therapy. The form that family therapy takes depends on the individual needs of the patient and the availability of family members to participate. Family therapy may involve one or more of the following: multi-family weekly group sessions, marital conjoint sessions, family

members' participation in the psychoeducational groups daily, telephone correspondence with the therapist.

Expressive therapies. Expressive therapies occur daily and sometimes twice daily for 60-90 minute sessions. Patients develop self-awareness and expression of feelings through art, music, movement, and occupational therapies which are primarily non-verbal exercises.

Fitness/Stress management. Patients participate in an exercise/fitness program utilizing exercise bikes, treadmills, weight machines, etc. to increase activity level and decrease depressive symptoms. In addition, stress reduction techniques including relaxation exercises are utilized to increase healthy living. Recreational activities are included to improve leisure and social skills.

Bible study. An optional interdenominational Bible study offered three days per week for 30 minutes per day and is usually led by a master's degree therapist with seminary training. The focus is the integration of Biblical principles with psychological principles.

Procedure

Patients will be tested in three sessions. The first session will occur within five days of admission and the following measures will be administered: 1) Time 1 Information Sheet, 2) Symptom Check List -90-Revised, and 3) Social Adjustment Scale-Self Report. The second session will

occur within five days of discharge and the following measures will be administered: 1) Symptom Check List -90-Revised, 2) Social Adjustment Scale-Self Report, and 3) Patient Evaluation Form. The third and final session will occur at three months post discharge and the following measures will be administered: 1) Time 3 Information Sheet, 2) Symptom Check List - 90-Revised, 3) Social Adjustment Scale-Self Report and 4) Free Gift Book Checklist (see Appendix F). The first two administrations will be conducted by the primary investigator or a research assistant. The third administration will be mailed to the patient along with a self-addressed return envelope and will be completed and returned. Each administration should require approximately 45-60 minutes to complete. In addition, each individual therapist will complete the Therapist Evaluation Form within five days of the patient's discharge. The evaluation will require approximately five minutes to complete.

The primary investigator will be conducting the majority of the administrations. The primary investigator will not be a member of the treatment team, and consequently, will only interact with the subjects for the purpose of this study. In times of illness, emergency or vacation, a research assistant will collect the data. The research assistant will be a member of the support staff of the treatment program and will have some interaction with the subject; however these interactions will not be treatment related.

Both the primary investigator and the research assistant will follow the same procedures. First, each participant will be informed about the sponsors of the study, the purpose of the study, the procedures involved, the duration of participation, the benefits and risks to the subject and the confidentiality of the information obtained. They will also be informed that their participation is voluntary and that refusal to participate will in no way affect the availability or quality of treatment. Each subject must sign the consent form before participation is permitted. The investigator will retain the original consent form and the subject will retain a copy of the form (see Appendix G). Also, a copy will be placed in the patient's clinical record. Next, a packet with the questionnaires enclosed will be given to the subject. The subjects will complete the questionnaires and place them back in the envelope and seal it. The information obtained in this study will be recorded with a code number that will allow only the primary investigator to determine the identity of each subject. At the conclusion of the study, the key that relates the subjects' names with the assigned code numbers will be destroyed.

The procedures for the third administration follow-up mailing are as follows. The Time 3 instruments will be mailed in a 9x11 envelope with a hand-written mailing address and first-class metered postage. Enclosed in the envelope will be an initial cover letter (see Appendix H) stating the purpose of the mailing, the instructions and time cue for completing the questionnaires, the confidentiality procedures and the deadline. Also,

enclosed will be the instruments to complete which will be pre-coded with the subjects assigned code number from the first two administrations. The enclosed return envelope will also be 9x11 with first-class metered postage; however the address will be stamped.

For participants who do not respond within three weeks, a follow-up contact will be made. The first follow-up contact will be in the form of an appeal letter only (see Appendix I). The letter will ask the participants whether or not they received the first mailing, and if so, questions about its completion and return. It will also, as did the initial letter, state the purpose of the initial mailing, the instructions and time cue for completing the questionnaires, the confidentiality procedures and the deadline. This mailing will be in a regular mailing envelope with a hand-written mailing address and first-class stamped postage.

Finally, for participants who do not respond within three weeks, a second follow-up contact will be made. The second follow-up contact will take two forms; a telephone call and a re-mailing of the initial packet. The telephone call will be made by the primary investigator and the dialogue will closely follow the content of the first follow-up letter. Concurrently, another questionnaire packet will be mailed in a 9x11 envelope with a hand-written mailing address and certified mail postage. Enclosed in the envelope will be a second follow-up letter (see Appendix J) which will state that a previous packet was sent but not returned, and, since it may have been misplaced,

another packet is enclosed. The letter will also state the purpose of the mailing, the instructions and time cue for completing the questionnaires, the confidentiality procedures and the deadline. Also enclosed will be the instruments to complete which will be pre-coded with the subject's assigned code number from the first two administrations. The enclosed return envelope also will be 9x11 with first-class metered postage; however the address will be stamped. No further contacts will be made after the second follow-up contacts.

Hypotheses

1) Patients who participated in the treatment program will exhibit symptom reduction (as measured by the SCL-90-R), improved social adjustment (as measured by the SAS-SR), self-perceived positive change in severity of problems (as measured by the PEF) and therapist-perceived positive change in severity of problems (as measured by the TEF) between admission (Time 1) and discharge (Time 2).

2) Patients who participated in the treatment program will exhibit maintained or improved symptom reduction (as measured by the SCL-90-R) and maintained or improved social adjustment (as measured by the SAS-SR) between discharge (Time 2) and three-month follow-up (Time 3).

3) Patients' self-perceived change in severity of problems (as measured by the PEF) will be positively correlated with the therapist-perceived change in severity of problems (as measured by the TEF).

4) Patients' self-perceived change in severity of problems (as measured by the PEF) will be positively correlated with symptomology (as measured by the SCL-90-R difference score between Time 1 and Time 2) and social adjustment (as measured by the SAS-SR difference score between Time 1 and Time 2).

5) Therapists' evaluation of patients' change in severity of problems (as measured by the TEF) will be positively correlated with symptomology (as measured by the SCL-90-R difference score between Time 1 and Time 2) and social adjustment (as measured by the SAS-SR difference score between Time 1 and Time 2).

Design

1) Hypothesis one will be analyzed by a repeated measures (Time 1/Time 2) Analysis of Variance (ANOVA) with the dependent measures being scores on the SCL-90-R, SAS-SR, PEF and TEF.

2) Hypothesis two will be analyzed by a Multiple Analysis of Covariance (Time 2/Time 3) with Time 1 scores serving as covariants and with the dependent measures being scores on the SCL-90 and SAS-SR. This study used the Multiple Analysis of Variance (MANOVA) implementation of a repeated measures design (Ekstrom, Quade & Golden, 1990; Lavori, 1990).

3) Hypothesis three will be analyzed by a Pearson correlation of the difference scores between admission and discharge for PEF and TEF.

4) Hypothesis four will be analyzed by a Pearson correlation of the difference scores between admission and discharge for PEF and SCL-90-R; Pearson correlation of the difference scores between PEF and SAS-SR.

5) Hypothesis five will be analyzed by a Pearson correlation of the difference scores between admission and discharge for TEF and SCL-90-R; Pearson correlation of the difference scores between admission and discharge for TEF and SAS-SR.

In addition to the five stated hypotheses, I will also look at the following demographic variables to see how they correlated with outcome data: age, sex, social economic status and education. These relationships will be analyzed through correlational methods. Throughout the study, when null hypothesis significance tests are used, an alpha criterion cutoff of .05 will be used.

CHAPTER 3

RESULTS

Table 3 provides demographic characteristics of the partial hospital subjects. Thirty-five subjects participated in the study. Fifteen were males and 20 were female. All subjects were white. Eighty percent of the subjects were married, six percent divorced and three percent separated, 11 percent were never married. Twenty-six percent had a high school education, 29 percent had a vocational or associates degree, 34 percent had a bachelor's degree and 12 percent had a graduate degree. In the area of financial income, nine percent had less than \$12,000, nine percent were between \$25,000 and \$34,000, 26% were between \$35,000 and \$49,000, 23 percent were between \$50,000 and \$74,000 and 31 percent were over 75,000. Thirty-one percent of the subjects had no dependents, 14 percent had one, 14 percent had two, 26 percent had three and 14 percent had four or more.

Table 4 provides descriptive clinical data of the partial hospital subjects. The Axis I primary diagnoses were 94 percent mood disorders, three percent anxiety disorders and three percent adjustment disorders. Sixty percent of the patients had only a single diagnosis, however 40 percent of patients had one or more secondary diagnosis. Of the secondary diagnoses given, nine had

anxiety disorders, four had mood disorders, four had attention-deficit disorder, two had substance abuse and one had an eating disorder. Sixty-six percent of all patients had an Axis II diagnosis, all of which were personality disorder NOS. Thirty-four percent of the patients either were not given an axis II diagnosis or it was deferred.

The length of stay was recorded in number of days from admission to discharge. The average length of stay was 15.9. Six percent stayed less than 10 days, 46 percent stayed 10-15 days, 23 percent stayed 16-20 days, 23 percent stayed 21-25 days, and 3 percent stayed over 25 days. Twenty-six percent of the subjects lived in the surrounding metroplex area from where the treatment center was located, 34 percent lived in Texas, but outside the metroplex and 40 percent lived outside the state of Texas. During the treatment, 23 percent lived in their permanent residence and 77 percent lived with a relative, friend, hotel or other situation. Prior to admission to treatment, 69 percent had not been in inpatient or outpatient treatment, 26 percent had been in outpatient treatment and six percent came from an inpatient facility. At three month follow-up, none of the 25 patient who responded had been hospitalized in an inpatient or day hospital setting, 88 percent participated in outpatient treatment, four percent were only in a support group and eight percent did not participate in any follow-up treatment.

Table 5 provides the means and standard deviations for the SCL-90-R and the SAS-SR. The mean score on the SCL-90-R derived in this study was 1.39 with a standard deviation of .67. The mean scores on the two norm

groups were as follows: psychiatric outpatients mean was 1.26 with a standard deviation of .68 and psychiatric inpatients mean was 1.30 with a standard deviation of .82. The mean score on the SCL-90-R derived from the nonpatient norm group was .31 with a standard deviation of .31. The mean score on the SAS-SR derived in this study was 2.39 with a standard deviation of .45. The mean score on the acute depression norm group was 2.53 with a standard deviation of .46. The mean score on the SAS-SR derived in the nonpatient sample norm group was 1.59 with a standard deviation of .33.

Hypothesis One

It was predicted that patients who participated in the treatment program would exhibit symptom reduction (as measured by the SCL-90-R), improved social adjustment (as measured by the SAS-SR), self-perceived positive change in severity of problems (as measured by the PEF) and therapist-perceived positive change in severity of problems (as measured by the TEF) between admission and discharge. This was analyzed by a repeated measures (Time 1/Time 2) ANOVA with the dependent measures being scores on the SCL-90-R, SAS-SR, PEF and TEF.

Table 6 provides the summary data of this repeated measures ANOVA findings. There is statistically significant improvement in the mean scores from admission to discharge in the area of symptom reduction as measured by SCL-90-R ($F = 24.43$, $df = 1$, $p < .001$). There is statistically significant improvement in the mean scores from admission to discharge in the area of social adjustment as measured by SAS-SR ($F = 18.441$, $df = 1$, $p < .001$). There

is statistically significant improvement in the mean scores from admission to discharge in patient-perceived severity of problems as measured by PEF ($F = 130.98$, $df = 1$, $p < .001$). There is statistically significant improvement in the mean scores from admission to discharge in therapist-perceived severity of problems as measured by TEF ($F = 177.529$, $df = 1$, $p < .001$).

Hypothesis Two

It was predicted that patients who participated in the treatment program would exhibit maintained or improved symptom reduction (as measured by the SCL-90-R) and maintained or improved social adjustment (as measured by the SAS-SR) between discharge and three-month follow-up. This was analyzed by a Multiple Analysis of Covariance (Time 2/Time 3) with Time 1 scores serving as covariants and with the dependent measures being scores on the SCL-90 and SAS-SR. This study used the Multiple Analysis of Variance (MANOVA) implementation of a repeated measures design (Ekstrom, Quade & Golden, 1990; Lavori, 1990).

Table 7 provides these Multiple Analysis of Covariance (MANCOVA) findings. There is not a statistically significant improvement in mean scores over time in the area of symptom reduction or social adjustment as measured by SCL-90-R and SAS-SR, respectively ($F = 1.42$, $df = 2.0$, $p = .26$). However, given that the power was very low (power = .27), the effect size was large (effect size = .115), and scores at three-month follow-up showed greater improvement than scores at discharge, there is substantial practical significance to indicate that there is no regression and the improvement from

admission to discharge is maintained. Thus, these findings are consistent with the hypothesis that patients exhibited maintained improvement in the area of symptom reduction and social adjustment; however, statistically significant improvement cannot be demonstrated. Since only 25 out of the 35 subjects completed the three-month follow-up evaluation, not enough subjects were available to establish enough power to determine if statistically significant improvement does in fact exist. The correlation between drop out status (i.e., completors of Time 3 and non-completors of Time 3) and the change scores between Time 1 and Time 2 on the SCL-90-R is not statistically significant ($r = .221$, $p = .202$, $n = 35$). The correlation between drop out status (i.e., completors of Time 3 and non-completors of Time 3) and the change scores between Time 1 and Time 2 on the SAS-SR is not statistically significant ($r = .010$, $p = .955$, $n = 35$). This indicates that there was no difference in performance on the SCL-90-R or the SAS-SR from admission to discharge between those who completed the study and those who did not complete the study.

A power analysis was done to calculate the minimum sample size needed to detect an effect between Time 2 and Time 3 using a repeated measures MANCOVA with two levels of time (i.e., Time 1 and Time 2) and two levels of dependent variables (i.e., SCL-90-R and SAS-SR) and two covariates (i.e., Time 1 SCL-90-R and Time 1 SAS-SR). It was calculated that a minimum sample size of 55 would be required to generate a significance level of .05 with power of .60 and an effect size of .115. A minimum sample size of

85 would be required to generate a significance level of .05 with power of .80 and an effect size of .115.

Figures 1 and 2 show graphically the changes in scores from admission to discharge to three-month follow-up on the SCL-90-R and the SAS-SR, respectively. In order to assess change across all three time periods of observation, a linear regression between the natural log transformation of SCL-90-R and SAS-SR and the three time periods of observation was calculated. The natural log transformation of the dependent variables allowed a linear relationship to be modeled between the dependent variables and the time periods. The slope coefficient of the regression line is a true score estimate of the rate of change in the transformed dependent variables. A slope coefficient was calculated for each individual subject with large negative coefficients indicating large change per unit of time and coefficients close to zero (i.e., either negative or positive) indicating small change per unit of time. These coefficients report global change across the entire observation periods. From these slopes, cutoffs were made to determine differences in rates of improvement between subjects. It was determined on the SCL-90-R that 11 (44%) subjects showed great improvement, nine (36%) showed moderate improvement, and five (20%) showed little to no improvement from admission to three-month follow-up. It was determined on the SAS-SR that six (24%) subjects showed great improvement, ten (40%) showed moderate improvement, four (16%) showed mild improvement, and five (20%) showed little to no improvement from admission to three-month

follow-up. These coefficients are interesting outcome measures in and of themselves when identifying the covariates of the slopes. This is what is sometimes referred to as the “slopes as outcomes” model (Willet, 1988).

Figures 3 and 4 show the natural log transformations of SCL-90-R and SAS-SR with all three time periods (i.e., admission, discharge and three-month follow-up).

Table 8 provides the intercorrelations of the difference scores between PEF, TEF, SCL-90-R and SAS-SR that are described in the next three hypotheses. The correlations are reported after correcting the attenuation in the correlations due to measurement error.

Hypothesis Three

It was predicted that patients’ self-perceived change in severity of problems (as measured by the PEF difference score between Time 1 and Time 2) would be positively correlated with the therapist-perceived change in severity of problems (as measured by the TEF difference score between Time 1 and Time 2). This was analyzed by a Pearson correlation of the difference scores between admission and discharge for PEF and TEF. The two were not statistically significantly correlated ($r = .227$, $p = .228$). The power was low due to the small sample size, therefore no conclusions can be generated from these findings. The sample size for TEF was 35, but only 30 completed the PEF.

Hypothesis Four

It was predicted that patients' self-perceived change in severity of problems (as measured by the PEF difference score between Time 1 and Time 2) would be positively correlated with symptomology (as measured by the SCL-90-R difference score between Time 1 and Time 2) and social adjustment (as measured by the SAS-SR difference score between Time 1 and Time 2). This was analyzed by a Pearson correlation of the difference scores between admission and discharge for PEF and SCL-90-R and a Pearson correlation of the difference score between admission and discharge for PEF and SAS-SR. Neither of the two were statistically significantly correlated ($r = -.270$, $p = .20$; $r = -.157$, $p = .46$). The power was low due to the small sample size (only 30 patients completed the PEF), therefore no conclusions can be generated from these findings.

Hypothesis Five

It was predicted that therapists' evaluation of patients' change in severity of problems (as measured by the TEF difference score between Time 1 and Time 2) would be positively correlated with symptomology (as measured by the SCL-90-R difference score between Time 1 and Time 2) and social adjustment (as measured by the SAS-SR difference score between Time 1 and Time 2). This was analyzed by a Pearson correlation of the difference scores between admission and discharge for TEF and SCL-90-R and a Pearson correlation of the difference score between admission and discharge for PEF and SAS-SR. TEF was not statistically significantly correlated with SCL-90-R

($r = -.148$, $p = .448$); however, TEF was significantly correlated with SAS-SR ($r = -.382$, $p < .05$).

The relationships between the demographic variables of age, social economic status and education were not analyzed to determine how they correlate with the outcome data because there were not enough subjects to make these multilevel analyses possible. However, gender was analyzed by two two-way ANOVAS between admission and discharge with the between groups factor being gender, males and females. Table 9 reports these findings. The between subjects main effect of gender was statistically significant ($p < .001$) on the SCL-90-R and the means and standard deviations for males and females at admission and discharge are reported in Table 10. The between subjects main effect of gender was not statistically significant ($p = .071$) on the SAS-SR and the means and standard deviations for males and females at admission and discharge are also reported in Table 10.

CHAPTER 4

DISCUSSION

The results of the present study indicate that this partial hospital program is effective in producing patient improvement. This improvement can be demonstrated in two specific areas: 1) symptom reduction and 2) social adjustment. The overall improvement which occurred was demonstrated to exist whether measured by objective patient self-report ratings, by subjective patient self-report ratings or by ratings of an outside rater (i.e., therapist). In addition, the improvement that was made between admission and discharge was maintained at three months follow-up. This is an important finding because if a patient's condition improves between admission and discharge, but then several months down the road regresses back to the original condition when treatment was first sought, then the treatment was ultimately not very effective. These findings indicate that patients gained insight or learned skills that helped them make long-term changes to themselves and/or their environment which allowed them to maintain the gains made during treatment. These overall findings indicate that this partial hospital program is effectively treating patients and that consumers,

providers, third party payers and the community can feel confident about the services rendered in this facility.

Many studies used readmission rates as a determinant of patient improvement or treatment success. None of the patients in this study were admitted to an inpatient hospital or readmitted to a partial hospital in the three-month follow-up period. Although, three-months is not a long time to assess readmission rates, the finding is still positive. It must also be realized however, that according to Culhane et al.'s (1994) review, 44% of patients referred to partial hospital come from an inpatient setting. In this study, only 6% came from an inpatient setting.

In this study, it was discovered that patients did not all change at the same rate and that individual differences were random and not a result of measurement error. Eighty percent of patients showed great to moderate improvement on the SCL-90-R from admission to three month follow-up. This is a large percentage of patients, not just improving, but improving dramatically. Sixty-four percent of patients showed great to moderate improvement on the SAS-SR . Although not as high, this is a large percentage of patients. The program can feel confident that a great amount of change is occurring for the majority of patients. Perhaps more emphasis on areas of social adjustment, such as work, social and leisure activities, family unit roles and finances, could increase improvement rates in this area. On both measures, 20% of patients showed little to no improvement. This is a disappointing finding. Perhaps some patients are not well-served in a partial

hospital treatment setting. More research and data analysis needs to be done to determine the individual differences between those patients that greatly and moderately improve and those patients that change little or not at all. This will enable the facility to modify the treatment provided or modify admission criteria to reduce the percentage of patients who show little to no change as a result of treatment.

When looking at the correlates of change, it is important to look at multiple predictors to determine if any significantly contribute to outcome. For example, patients with different diagnoses may respond to treatment differently. In this program there was little variability in diagnoses. Nearly all patients suffered from an Axis I Mood Disorder (94%). Perhaps the program director and treatment team over time learned that they were more effective in treating these disorders and, consequently, narrowed their admission standards and excluded other patients. At this time, it cannot be statistically demonstrated that this program could not have success with other Axis I disorders and until these patients are admitted and studied, this cannot be concluded. Perhaps only people with a Mood Disorder diagnosis are attracted to the program, and if so, the administrators may explore how to attract and meet the needs of a more varied population.

Another correlate of change to be considered is gender. In this study it was found that females scored significantly higher on the SCL-90-R than males. One explanation of this finding is that females who seek partial hospital treatment experience more severe symptoms than males who seek

treatment. Another possibility is that neither is experiencing more severe symptoms than the other, but females report more severe symptoms than males. Other correlates of change that could be considered are length of stay, economic status, program design, staffing levels, initial patient scores on various measures, and so on. These other factors were not explored in this study due to the limited sample size to produce statistically significant findings.

Several other questions were considered in this study, however few conclusions can be drawn from the findings. First, do patients and therapists perceive the level of improvement equally or is there a difference between the patient's assessment of his or her own improvement and the therapist's assessment of improvement? Although both patient and therapist reported patient improvement and this was correlated with improvement on the objective self-report measures (i.e., SCL-90-R and SAS-SR), there was no statistically significant correlation between the two. Sullivan and Grubea (1991) obtained similar findings when they studied the correlation between patient and clinician ratings of improvement and found that the correlation was low. One problem they had however, was that two different instruments were used and the patient rating was assessed through interview format. Nevertheless, these conclusions are no different. Perhaps the patient believes he/she has made great strides and is greatly improved, but the therapist believes that the patient is not being realistic and is avoiding facing the real issues and consequently does not rate patient improvement the same.

Perhaps the therapist may believe that the patient has greatly improved, but the patient still has some perfectionism problems and is dissatisfied with this improvement since the level of perfection has not been attained. Or perhaps there is a real correlation between the two but the statistics were not sensitive enough to generate this finding based on low power.

Another question considered in this study was do patients' subjective ratings of self improvement correlate with their more objective standardized ratings of improvement? In other words, how accurately are patients able to assess their own level of functioning? Again, although both patient's subjective ratings of self improvement demonstrated improvement and so did the objective standardized ratings of symptomology and social adjustment, there was no statistically significant correlation between the two. Perhaps subjective global ratings of improvement tap something very different from the symptom checklist and social adjustment rating. Certainly the content of the questions are quite different. Perhaps however, there is a real correlation between them, but the statistics were not sensitive enough to generate this finding based on low power. Again, no real conclusions can be generated from these findings.

The last question considered in this study was do therapists' ratings of patient improvement correlate with the patients objective standardized ratings of improvement? In other words, how accurately are therapists able to assess patient level of functioning? Therapist ratings were not statistically significantly correlated with symptomology, but were statistically significantly

correlated with social adjustment. Therefore, it can be concluded that therapists can accurately assess patient level of functioning in the area of social adjustment. Perhaps they have more difficulty accurately assessing patient level of functioning in the area of symptomology, or perhaps there is a real correlation between therapist ratings and symptom checklist but the statistics were not sensitive enough to generate this finding based on low power.

Of course for any of these findings to be meaningfully understood, it is important that the demographics of the patient population be clearly delineated. The patient population in this study is all white, a mixture of males and females most of whom are married with post high school education and a middle to upper middle class combined income. In addition, nearly all of the population in this study are suffering from an Axis I Mood Disorder (94%) and the majority of the patients also have an Axis II Personality Disorder (66%). Most of the previously conducted partial hospital studies were researching patients with a primary diagnosis of schizophrenia or other psychotic disorder. Culhane et al.'s (1994) review indicated that the majority (61%) of clients served in partial hospital programs have a severe mental disorder (i.e., schizophrenia or affective psychosis). Some of the patients in this study did have a mood disorder with psychotic features, but this number was few. Consequently, the findings from this study drastically depart from previous research and generate new information about this specific diagnostic population. This population is unlike all but one (Dick et

al., 1985) of the eleven studies comparing inpatient hospitals to partial hospitals cited previously in this paper. The only other studies reviewed that had slightly similar patient populations and program types were Tyrer et al. (1987), Vidalis et al. (1986), Vidalis et al. (1990), Bowman et al. (1983) and Kamis-Gould et al. (1995). The average length of stay for patients in this program was between 10 to 25 days. Based on this information (i.e., patient demographics, length of stay, diagnostic category), as well as the program design and staffing levels (described earlier in this paper), it would seem that the categorical term "day treatment program" coined by Rosie (1987) would best characterize the partial hospital program evaluated in this study. In other words, it is a partial hospital with a diverse function that includes treatment for patients who are in some degree of remission from acute illness and/or those who are in transition from hospital to outpatient care. It is an alternative to standard outpatient care and time-limited in nature. Clarifying the nomenclature greatly increases the opportunity for accurate generalizations. Generalizations and/or comparisons should be restricted to other day treatment programs with similar characteristics.

The findings have yielded valuable information for this particular facility and aided in the ability to improve treatment in the future. It has also provided the starting place for this facility to gather data and lay the groundwork for more specific research in the future. In regards to this treatment facility, it would be interesting to follow-up these patients at one and two years to determine if improvement continues or is maintained on a

more long term basis. In addition, adding another data source would be interesting. Without time and resource limitations, the family source may be more feasible and may add additional depth to the findings.

This study provides a practical, efficient, comprehensive model for other adult partial hospital facilities to use in conducting outcome studies in their facilities. It is believed that the instruments used are sound and easy to administer and could easily be incorporated into admission and discharge procedures in other facilities. Several minor modifications to this study are recommended. Some of the items on the PEF and TEF could be revised to be more specific and more meaningful. Also, it is recommended that, in order to get a more accurate estimate of change, the PEF and TEF instruments should be administered at admission and discharge, rather than once at discharge, when patients are asked to estimate where they would rate themselves at admission and draw an arrow to where they rate themselves at present (i.e., discharge). The PEF could also be added to the Time 3 administration. It is brief and would not be an additional burden to the subject. Also, some modifications could be made to the SAS-SR to improve a few items which seem to generate some misleading conclusions. Nevertheless, with a few changes or modifications, the same instruments and procedures used in this study, could easily be used in other facilities. Hospitals could then continuously gather data and develop a large sample in which more analyses could be done because the statistical power would be increased.

The findings from this study can be added to the overall pool of studies conducted in partial hospital settings, thus contributing to treatment effectiveness research overall. Metaanalysis of a number of partial hospital outcome studies would increase the generalizability of these findings. Studies like this and many more can help to support the notion of effectiveness of this type of treatment as a viable alternative to inpatient treatment for many people. Unfortunately, it seems that third party payors have decreased inpatient stays to a few days and even limited those to the most severe cases and do not have funds for this “in between” treatment modality. Consumers are increasingly given only two options: very brief inpatient treatment and outpatient treatment with a limited number of sessions or dollar amount. Partial hospitalization is not given the place it deserves in the realm of psychological treatment. Thus, one implication of this study is to encourage third party payors to review their reimbursement practices. Partial hospital benefits should be covered under inpatient benefits rather than outpatient. This would allow more people to receive this type of very effective treatment. When partial hospital benefits are limited to outpatient funds, benefits often run out before even a brief time-limited amount of treatment is received and no monies are left for follow-up outpatient treatment.

Limitations of the Study

There are three primary limitations to this study: 1) experimental mortality, 2) validity of self-report, and 3) no control group. Experimental mortality is a form of internal validity characterized by the loss of participants

from a group. Longitudinal studies incur the threat that some participants will not complete the study due to participant relocation or lack of desire to continue to participate. It was estimated that 60% of those patients who began this study would follow through to the three month completion. In this study, 35 subjects completed the questionnaires at admission and discharge and 25 completed the questionnaires at three-month follow-up. This is 71.4% of the subjects which is higher than the 60% predicted for this study and very similar to the average percentage of patients followed-up in the eleven major outcome studies comparing inpatient to partial hospitalization cited earlier in this paper (72%). Nevertheless, the fact that nearly 29% of the subjects did not complete the three-month follow-up evaluation limits the generalizability of these findings. Perhaps those who did not complete were those patients who were functioning less well and consequently the study was biased to assume that the findings of the 71% represent information about the entire sample. The drop out status analysis calculated in this study did indicate that there was no difference in performance on the SCL-90-R and the SAS-SR between admission and discharge for those who completed the study and those who did not complete the study. This gives us some confidence that those patients did not drop out because of less improvement, however we cannot know if those patients significantly regressed after leaving the program, more so than other patients. Nevertheless, experimental mortality is a problem for all longitudinal studies and must be taken into consideration when interpreting the results.

Another limitation of this study is the problem of self-report measures (Gynther & Green, 1982). Self-report measures are widely used to assess improvement in treatment outcome studies, however, Gynther and Green (1982) have extensively reviewed the methodological problems in utilizing self-report measures. How valuable are patients' ratings of their own level of functioning and with what accuracy can they and/or are they willing to provide such ratings? This is particularly a concern with studies of target problems such as chemical dependency, where denial of the problem is tantamount to the problem. Both the SCL-90-R and the SAS-SR are self-report measures, however they are standardized and have an objective test format. This adds some validity to the findings as opposed to subjective self-report, such as a patient satisfaction survey which is sometimes the only criteria used in some studies. Some have recommended that utilizing another data source is prudent (Garfield et al., 1986) and can offset the self-report problem. A source which was utilized in this study was the therapist. The therapist ratings supported both the two objective self-report measures and the subjective patient self-report rating indicating improvement in functioning from admission to discharge. Another recommended additional data source is a family member or significant other; however, in this study, due to limited access to this data source, the family or significant other perspective was not included.

A final limitation of this study is the lack of a control group. This study was designed as an in-the-field program evaluation and did not have a

control group. While not utilizing a control group raises several internal validity issues (i.e., history, maturation, regression effects), such control groups cannot always be used due to ethical constraints. Nevertheless, it is still important that in-the-field studies be conducted. As Greene and De La Cruz (1981) pointed out, it is far easier to design than execute laboratory-precise studies in psychiatry. It appears the best method is to do metaanalysis of all the contributing studies.

Future Partial Hospital Research

If partial hospital utilization is to increase over the next decade, it will be increasingly important for programs to demonstrate their effectiveness and to delineate factors that affect care. Future research must be clear and specific about its aims. Important aspects to consider are: 1) patient population (i.e., chronically mentally ill, acute, chemical dependency, child and adolescent, geriatric), 2) length of stay (i.e., short-term versus long-term), 3) program design (i.e., types of therapies offered in the program), 4) staffing levels (i.e., staff: patient ratios) and 5) professional disciplines utilized (i.e., psychiatrists, psychologists, social workers, counselors, nurses, mental health technicians, etc.). Studies which report findings yet do not include these factors diminish the potential for generalizability of the data. Also, much more work is needed to improve on the methodological problems cited by Wilkinson (1984) and others. It is very difficult to carry out problem-free studies in psychology when treatment of patients is involved, therefore progress may be slow and less than ideal. Cowen (1978) stated that "ultimate conclusions about

the effectiveness of . . . programs may . . . have to come about slowly and cumulatively, based on convergent findings from many individually less-than-ideal outcome studies" (p. 804). This conclusion clearly applies to the area of partial hospital research. This study is only the first outcome evaluation in what should eventually involve a larger sample in a detailed long-term follow-up.

APPENDIX A
PATIENT EVALUATION FORM

PATIENT EVALUATION FORM

INSTRUCTIONS:

Below are six questions which ask you to rate how helpful you think the program has been on a scale of 1 to 7 (1=severe problems; 7=no problems). For each question, circle a number to indicate how you think you were at the time you first came into the program; then circle another number on the same line to indicate how you are doing now. Indicate the direction you think you have changed by drawing an arrow between the circles. Only if there has been absolutely no change should you circle only one number.

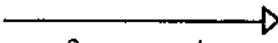
		Severe Prob- lems						No Prob- lems
EXAMPLE: Overall problems	1	②	3	4	⑤	6	7	
			—————→					
1. Relationships with family members	1	2	3	4	5	6	7	
2. Relationships with other people	1	2	3	4	5	6	7	
3. Work and social activities.	1	2	3	4	5	6	7	
4. Ability to control feelings	1	2	3	4	5	6	7	
5. Relationships with authorities	1	2	3	4	5	6	7	
6. Overall problems	1	2	3	4	5	6	7	

APPENDIX B
THERAPIST EVALUATION FORM

THERAPIST EVALUATION FORM

INSTRUCTIONS:

Below are six questions which ask you to rate the patient's level of functioning on a scale of 1 to 7 (1=severe problems; 7=no problems). For each question, circle a number to indicate how you think the patient was at the time he/she first came into the program; then circle another number on the same line to indicate how you think the patient is doing now. Indicate the direction you think he/she has changed by drawing an arrow between the circles. Only if there has been absolutely no change should you circle only one number. Write N/A if you have no knowledge of the area.

	Severe Prob- lems						No Prob- lems	
EXAMPLE: Overall problems	1	②	3	4	⑤	6	7	
								
1. Relationships with family members	1	2	3	4	5	6	7	
2. Relationships with other people	1	2	3	4	5	6	7	
3. Work and social activities.	1	2	3	4	5	6	7	
4. Ability to control feelings	1	2	3	4	5	6	7	
5. Relationships with authorities	1	2	3	4	5	6	7	
6. Overall problems	1	2	3	4	5	6	7	

APPENDIX C
INFORMATION SHEET

INFORMATION SHEET

Age: _____

Sex : ___ (1) male ___ (2) female

Ethnic Origin:

- ___ (1) Asian
 ___ (2) Black
 ___ (3) Hispanic
 ___ (4) Native American
 ___ (5) White
 ___ (6) Other

Marital Status:

- ___ (1) Never Married
 ___ (2) Divorced
 ___ (3) Separated
 ___ (4) Widowed
 ___ (5) Married

Education (Check Highest Level):

- ___ (1) Grade School
 ___ (2) High School
 ___ (3) High School Diploma/GED
 ___ (4) Vocational/Technical
 ___ (5) Associate's Degree
 ___ (6) Bachelor's Degree
 ___ (7) Master's Degree
 ___ (8) Doctorate Degree

Current Employment Status:

- ___ (1) Full-Time Employment
 ___ (2) Part-Time Employment
 ___ (3) Unemployed
 ___ (4) Retired
 ___ (5) Disabled
 ___ (6) Homemaker
 ___ (7) Student

Financial Status (Combined Income Last Year):

- ___ (1) less than \$12,000
 ___ (2) \$12,000 - \$18,000
 ___ (3) \$19,000 - \$24,000
 ___ (4) \$25,000 - \$34,000
 ___ (5) \$35,000 - \$49,000
 ___ (6) \$50,000 - \$74,000
 ___ (7) over \$75,000

Dependents:

- ___ (1) none
 ___ (2) one
 ___ (3) two
 ___ (4) three
 ___ (5) four
 ___ (6) five or more

Permanent Residence:

- ___ (1) Dallas/Fort Worth Metroplex
 ___ (2) Out of Metroplex
 ___ (3) Out of Texas

Living Situation During Treatment:

- ___ (1) permanent residence
 ___ (2) relative/friend
 ___ (3) hotel/temporary rental
 ___ (4) other

I came to the Day Hospital from:

- ___ (1) inpatient hospital
 ___ (2) outpatient treatment
 ___ (3) neither

APPENDIX D
INFORMATION SHEET

INFORMATION SHEET

I have participated in the following treatment(s) since I was discharged from the New Life Day Hospital:

- (1) inpatient hospital
- (2) outpatient individual therapy
- (3) outpatient group therapy
- (4) outpatient family/marital therapy
- (5) support group
- (6) other (list) _____
- (7) none

If you answered "none" above, the reason you did not pursue treatment following discharge was:

- (1) unable to locate a therapist or group
- (2) financial limitations
- (3) problems were resolved and treatment seemed unnecessary
- (4) other (list) _____

If you did participate in the above treatment(s), with what frequency did you participate?

- (1) twice a week or more
- (2) once a week
- (3) every other week
- (4) once a month or less

I was admitted to an inpatient hospital since being discharged from the New Life Day Hospital:

- (1) yes
- (2) no

I was admitted to another day program since I was discharged from the New Life Day Hospital:

- (1) yes
- (2) no

APPENDIX E
INTERVENTION

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:15 - 8:40 Bible Study	8:15 - 8:40 Bible Study	8:15 - 8:40 Bible Study	8:15 - 8:40 Bible Study	
8:45 - 10:15 Group Therapy	8:45 - 10:15 Group Therapy	8:45 - 10:15 Group Therapy	8:45 - 10:15 Group Therapy	Keith 8:45-10:00 Derik 9:30-10:45 Group Therapy
10:30 - 11:30 Education Group	10:30 - 11:30 Education Group	10:30 - 11:30 Education Group	10:30 - 11:30 Education Group	Occupational Therapy for Derik's grp. 8:45-9:30 for Keith's grp. 10:15-11:00
11:30 - 12:30 Lunch	11:30 - 12:30 Lunch	11:30 - 12:30 Lunch	11:30 - 12:30 Lunch	11:30 - 12:30 Educational Group
1:00 - 2:00 & 2:00 - 3:00 Occupational Therapy	1:00 - 2:00 & 2:00 - 3:00 Occupational Therapy	1:00 - 2:00 & 2:00 - 3:00 Occupational Therapy	1:00 - 2:00 & 2:00 - 3:00 Occupational Therapy	12:30 - 1:30 Lunch
12:30 - 3:30 * Individual Therapy	12:30 - 3:30 * Individual Therapy	12:30 - 3:30 * Individual Therapy	12:30 - 3:30 * Individual Therapy	1:45 - 4:30 Recreational Outing
<i>Specific Times for</i>	<i>individual therapy are</i>	<i>assigned individually</i>	<i>three (3) times/weekly</i>	↓
3:30 - 4:45 ** Exercise Therapy	3:30 - 4:45 ** Exercise Therapy	3:30 - 4:45 ** Exercise Therapy	3:30 - 4:45 ** Exercise Therapy	Recreational Outing in progress
4:45***5:00 Community Wrap-Up Group	4:45***5:00 Community Wrap-Up Group	4:45***5:00 Community Wrap-Up Group	4:45***5:00 Community Wrap-Up Group	Due Back Approximately 4:30

APPENDIX F
FREE GIFT BOOK CHECKLIST

GIFT BOOK CHECKLIST

Check which book you would like to receive (include a 1st & 2nd choice) and enclose this form in your return envelope. I will send you the complementary book in appreciation for your participation in this study.

- The Man Within
Scheuermann, Stephens, Newman, Dyer

- The Woman Within
Congo, Meier, Mask

- Love Hunger

- Hand-Me-Down Genes and Second-Hand Emotions
Stephen Arterburn

- Winning at Work Without Losing at Love
Stephen Arterburn

- The Power Book
Stephen Arterburn

APPENDIX G
CONSENT FORM

CONSENT FORM

The New Life Day Hospital is conducting a program evaluation study in conjunction with the University of North Texas Psychology Department. The purpose of the study is to determine the effectiveness of this partial hospital treatment program and each patient's satisfaction with the treatment provided. At New Life, we are interested in quality care; by research studies such as this, we are able to assess quality care and quality improvement needs.

The following procedures will be involved:

1. During the first week of admission, each participant will be asked to complete a basic questionnaire requesting information about age, sex, ethnicity, marital status, education and employment. In addition, two brief questionnaires will be given to assess level of functioning prior to treatment.
2. At discharge, these two questionnaires will be readministered. Also, you will be asked to complete a personal evaluation of how helpful the program has been.
3. At three months following discharge, these same two questionnaires will be readministered in order to assess continued level of functioning. The questionnaires will be mailed to you and a self-addressed stamped envelope will be included. The questionnaires are brief and should only take 15-20 minutes each to complete.

I, _____, understand the nature and purpose of this study. I understand that there is no personal risk or discomfort involved with this research and that I am free to withdraw my consent and discontinue participation in this study at any time. A decision to withdraw from the study will not affect the services available to me or my participation in the New Life Day Hospital.

I understand that any information obtained in this study will be recorded with a code number that will allow the investigator to determine my identity. At the conclusion of this study the key that relates my name with my assigned code number will be destroyed. Under this condition, I agree that any information obtained from this research may be used in any way thought best for publication or education.

Having received this information and satisfactory answers to the questions asked, I voluntarily consent to participation in the investigation described above. If I have any additional questions or problems that arise in connection with my participation in this study, I can contact Mary K. Damkroger, M.A., L.P.C. at this address or phone number:

2071 N. Collins Blvd.
Richardson, Texas 75080
(972) 437-4698 or (972) 669-0550

Signature of Participant

Date

Signature of Investigator

Date

THIS PROJECT HAS BEEN REVIEWED BY THE UNIVERSITY OF NORTH TEXAS
COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS * (817) 565-2000

APPENDIX H
INITIAL COVER LETTER

INITIAL COVER LETTER

Dear Participant:

It has been three months since your discharge from the New Life Day Hospital and this packet is the third and final part of the collaborative study between the New Life Day Hospital and the University of North Texas Psychology Department. Again, the purpose of the study is to assess the effectiveness of this partial hospital treatment program. It is only by research studies such as this, and participants such as you, that we are able to assess quality care and quality improvement needs.

Enclosed you will find two questionnaires and a general information sheet. These forms should be familiar to you, as they are the same ones completed when you were in the program. The questionnaires are brief and should only take 15-20 minutes each to complete. Each questionnaire has an assigned code number which conceals your identity; therefore, it is unnecessary for you to write your name on the forms. Please complete the questionnaires, place them in the enclosed self-addressed return envelope and place it in the mail. We would like to receive your responses within two (2) weeks. In addition, you will receive a free New Life book of your choice when you complete the enclosed form and return it with your responses.

Thank you for your participation in this study. If any additional questions or problems arise in connection with your participation in this study, please contact me at the address or phone number listed below.

Sincerely,

Mary K. Damkroger, M.A., L.P.C.
2071 N. Collins Blvd.
Richardson, Texas 75080
(972) 437-4698 or (972) 669-0550

APPENDIX I

FIRST FOLLOW-UP LETTER

FIRST FOLLOW-UP LETTER

Dear Participant,

Hello again! I hope you are doing well. I am writing in regards to the third and final part of the collaborative study between the New Life Day Hospital and the University of North Texas Psychology Department. Recently, you were sent a questionnaire packet along with a request to complete the questionnaires and return them in the self-addressed return envelope. Hopefully, you received the packet which contained two questionnaires and a general information sheet. The forms should have been familiar to you, as they are the same ones completed when you were in the New Life program. Please take a moment and complete the questionnaires, place them in the self-addressed return envelope and mail them to us. You have already completed two parts of the study which we greatly appreciate; however, the results are only meaningful if we have all three parts. We would like to receive your responses as soon as possible.

Again, the purpose of the study is to assess the effectiveness of this partial hospital treatment program. It is only by research studies such as this, and participants such as you, that we are able to assess quality care and quality improvement needs. The questionnaires are brief and should only take 30 minutes to complete. Each questionnaire has an assigned code number which conceals your identity; therefore, it is unnecessary for you to write your name on the forms.

Thank you for your participation in this study. If any additional questions or problems arise in connection with your participation in this study, please contact me at the address or phone number listed.

Sincerely,

Mary K. Damkroger, M.A., L.P.C.

P.S. Don't forget that you will receive a **free New Life book** for your participation. Any of the books would be great for your own personal use or as a gift to a friend or family member.

APPENDIX J
SECOND FOLLOW-UP LETTER

SECOND FOLLOW-UP LETTER

Dear Participant,

I am writing in regards to the third and final part of the collaborative study between the New Life Day Hospital and the University of North Texas Psychology Department. A questionnaire packet along with a request to complete the questionnaires and return them in the self-addressed return envelope was sent to you earlier, but was not returned. I realize that you may have misplaced it and consequently, another packet is enclosed. Please take a moment and complete the questionnaires, place them in the self-addressed return envelope and mail them to me. You have already completed two parts of the study which I greatly appreciate; however, the results are only meaningful if I have all three parts. I would like to receive your responses as soon as possible.

Again, the purpose of the study is to assess the effectiveness of this partial hospital treatment program. It is only by research studies such as this, and participants such as you, that we are able to assess quality care and quality improvement needs. The two questionnaires are brief and should only take 15-20 minutes each to complete. Each questionnaire has an assigned code number which conceals your identity; therefore, it is unnecessary for you to write your name on the forms.

Thank you for your participation in this study. If any additional questions or problems arise in connection with your participation in this study, please contact me at the address or phone number listed.

Sincerely,

Mary K. Damkroger, M.A., L.P.C.

P.S. Don't forget that you will receive a **free New Life book** for your participation. Any of the books would be great for your own personal use or as a gift to a friend or family member.

APPENDIX K

TABLES

Table 1

Summary Of Inpatient Versus Partial Hospitalization Outcome Studies With Adults

Author	n	Length of stay	Type of subjects	Design	Measures	Outcome
Wilder et al. (1966)	IP = 189 PH=189	IP = 20 PH = 41	Schizophrenia = 40% Mixed =60%	Post-tx comparison of randomized IP vs PH groups at 2 yr. follow-up.	Structured interview of pts. & family members assessing psychiatric status, social adjustment & readmission rates.	Partial hospitalization was generally as effective as inpatient services. No significant difference in psychiatric status, social adjustment or readmission rates.
Herz et al. (1971)	IP = 45 PH = 45	IP = 139 PH = 49	Schizophrenia /OBS/ Psychosis = 59% Personality Disorder /Substance Abuse =41%	Pre & post tx. comparison of randomized IP vs PH groups at admission & at 2 weeks, 4 weeks & 2 yr. follow-up.	Structured interview of pts. assessing psychopathology (Psychiatric Evaluation Form - PEF), role functioning (Psychiatric Status Schedule - PSS) & readmission rates.	PH was rated superior to IP on both outcome measures; however, differences lessened at 2 yr. measurement. Higher readmission rates for IP.
Michaux et al. (1973)	IP = 56 PH= 50	- -	Schizophrenia = 54% Mixed = 46% excluding suicidal /homicidal, retardation, OBS, & drug addicted	Pre & post tx comparison of matched group of IP vs PH groups at admission, 2 mos. & 1 yr.	Ratings of psychopathology, social adjustment & readmission rates by pts. & family using IP Multidimensional Psychiatric Scale, Katz Adjustment Scales & Michaux Stress Index.	Symptom reduction greater in IP initially. At 1 yr. only difference was PH were more intrapunitive and social adjustment was superior in PH. No difference in readmission rates.

Table 1

Summary Of Inpatient Versus Partial Hospitalization Outcome Studies With Adults

Author	n	Length of stay	Type of subjects	Design	Measures	Outcome
Washburn et al. (1976)	IP = 30 PH = 29	--	Females Only Schizophrenia = 50% Affective Psychosis = 12% Personality Disorder = 20% Borderline Personality = 18%	Pre & post tx comparisons of randomized IP vs PH groups at admission, 2 mos., 6 mos. & 2 yrs.	Ratings of psychopathology (PSS, PEF, Dynamic Assessment Scale), social adjustment (Family Adjustment Questionnaire, Community Adjustment Questionnaire, Burden Evaluation) & cost.	PH is superior to IP in five distinct areas: subjective distress, community functioning, family burden, total cost & days of attachment to the hospital.
Krowinski et al. (1978)	IP = 50 PH = 43	16	All pts. requiring inpatient except suicidal, violent, drug dependent, extremely agitated or disorganized.	Pre & post tx. comparison of groups at admission, discharge & 6 mos. follow-up.	Ratings of improvement using all scales of PSS.	PH group improved more than IP group on all scales except one, agitation-excitement, on which IP group improved more.
Perk et al. (1978)	IP = 35 PH = 37	--	Veterans Only Schizophrenia = 48% Mixed = 52% excluding OBS, suicidal/ homicidal & physically infirm.	Pre & post tx. comparison of matched pairs at admission & 2 mos. follow-up.	Ratings of home and community adjustment by family/friend using seven scales of the Personal Adjustment & Role Skills Scale (PARS).	Both groups achieved significant gains, particularly in symptom reduction. PH was slightly more effective in attentiveness and employment.

Table 1

Summary Of Inpatient Versus Partial Hospitalization Outcome Studies With Adults

Author	n	Length of stay	Type of subjects	Design	Measures	Outcome
Edicott et al. (1979)	IP = 63 Brief IP followed by PH = 61	IP = 60 Brief IP followed by PH = 11	1/3 Black Schizophrenia = 63% Mixed 37% excluding OBS, substance abuse & antisocial personality.	Post tx. comparison of randomized groups at 3 weeks & at 3,6,12,18, & 24 mos. after admission.	Ratings completed by pts. (PSS, Global Assessment Scale-GAS), family (Family Evaluation Form) & therapist (GAS, Mental Status Exam Record). Readmission rates.	Generally, the two brief txs. were superior to the standard IP. Also those with high anger scores did best in brief IP followed by PH.
Dick et al. (1985)	IP = 48 PH = 43	IP = 20 PH = 34	Schizophrenia = 0 Depressives = 56% Adjustment Reaction & Personality Disorder = 44%	Pre & post tx. comparison of randomized groups at admission, 3 weeks, 4 mos. & 1 yr.	Ratings of psychiatric status (Clinical Interview Schedule) with pts. & social performance by interviewing family or friend. Patient satisfaction. Cost.	Both groups improved on measures of psychiatric status. Social performance was abandoned due to poor follow-up with family/friend. Pt. satisfaction greater in PH. PH cost less than IP
Creed et al. (1989)	IP = 69 PH 41	- -	Schizophrenia = 33% Bipolar = 24% Neurotics = 30% Personality Disorders & OBS = 13%	Pre & post tx comparison of non-randomized groups at admission, 3 mos. & 1 yr.	Ratings of mental state (Present State Examination-PSE) with pt. & social behavior (Social Behavior Assessment Schedule-SBAS) with relative.	Both groups showed similar improvement in mental status, however PH pts. were less of a burden to relatives at 1 yr.

Table 1

Summary Of Inpatient Versus Partial Hospitalization Outcome Studies With Adults

Author	n	Length of stay	Type of subjects	Design	Measures	Outcome
Creed et al. (1990)	IP = 48 PH = 41 Manchester Hospital	IP = 21 PH = 64	Schizophrenia = 27% Depression = 20% Mania = 9% Neurotics = 27% Personality Disorders = 9% Addiction/OBS = 8%	Pre & post tx comparison of randomized groups at admission, 3 mos. & 1 yr.	Ratings of psychiatric symptoms (PSE) with pt. & social functioning (SBAS) with household member.	At 3 mos. social role performance was greater with IP. At 1 yr. there was no difference between groups in any area.
Creed et al. (1991)	(Manchester above) Blackburn Hospital IP = 32 PH = 19	--	Schizophrenia = 24% Depression = 20% Mania = 14% Neurotics = 14% Personality Disorders = 11% Addiction/OBS = 17%	Pre & post tx comparison of random groups at admission, 3 mos. & 1 yr. at two facilities: Manchester & Blackburn	Ratings of psychiatric symptoms (PSE) with pt. & social functioning (SBAS) with household member.	No significant differences between IP & PH in either facility at 1 yr. The only difference was in role performance at 3 mos. in the Manchester group as note above (Creed et al. 1990)

Note. Dashes indicate the data was not available. IP = inpatients; PH = partial hospital patients

Table 2

Summary Of Other Partial Hospitalization Studies With Adults

Author	n	Length of stay	Type of subjects	Design	Measures	Outcome
Glick et al. (1986)	OP = 37 PH = 42	OP = 90 mins. week PH = 15 hrs. week Both 6-12 weeks	Schizophrenia = 47% Affective = 53% Post-hospital Treatment	Pre & post tx. comparison of randomized groups at admission, discharge, & 6 & 12 mos. follow-up.	Ratings of functioning (GAS), symptoms (PEF), role functioning & social adjustment (Role Performance Tx. Scale, Social Adjustment Scale-Self Report - SAS-SR). Readmission rates.	No differences existed between the two groups at discharge, 6 or 12 mos. follow-up.
Tyrer et al. (1987)	OP = 58 General PH = 23 Specialized PH = 25	- -	Depression = 65% Phobic = 21% Anxiety = 14%	Pre & post tx. comparison of random groups at pretreatment, 4, 8 & 24 mos.	Assessment of symptoms (modified PSE) & social adjustment (Social Functioning Schedule).	No significant differences in outcome between the 3 types of care at 2 yrs. except suicidal symptoms less common in OP. Also no significant differences in outcome between phobic & anxiety disorders.
Piran et al. (1989)	53	2-4 mos.	Females Only Anorexia = 19 Bulimia = 35	Pre & post tx. outcomes assessed at admission, discharge, 1, 3 & 6 mos. post discharge.	Assessed weight gain for anorectic pts. & average number of binges per week for bulimic pts. Also 11 psychometric instruments assessing symptomology.	Found significant weight gain in anorectic pts. (74% gained over 1 lb. per week). Found significant decrease in number of binges per week in bulimic pts. (75% reduction in 88% of pts.)
Eating Disorders						

Table 2

Summary Of Other Partial Hospitalization Studies With Adults

Author	n	Length of stay	Type of subjects	Design	Measures	Outcome
Vidalis et al. (1986)	100	--	Depression = 49 Schizophrenia = 30 Neurosis /Personality Disorder = 15 Other = 6	Retrospective study compared pts. able to benefit from tx. with pts. unable to benefit to determine predictive factors.	Assessment of frequency & duration of PH attendance. Predicting factors: age, sex, diagnoses, living status, employment status, referred from IP or PH & preferred PH activities.	None of the groups showed significant differences in frequency or duration of attendance. Success cannot be predicted based on these factors.
Vidalis et al. (1990)	56	6 weeks	Affective = 56 Schizophrenia = 20 Neurosis /Personality Disorder = 15 Drug Abuse = 2	Pre & post tx. outcomes assessed at admission & 6 weeks.	Assessment of depression (Hamilton Depression Scale), self-esteem (BDI), loquacity (Rorschach) & sociability (Observation of Sociability Scale). Staff predictions using 5-point scale.	Pts. as a group improved on all measures assessed. Staff assessments correlated positively with improvement on assessment measures.
Bowman et al. (1983)	IP = 54 PH = 43	IP = 36 PH = 42	Acutely ill	Prospective study analyzing characteristics of pts. admitted to IP vs PH setting.	Diagnosis, age, employment status, transportation, clinician & pt. assessment of severity of illness & previous admissions.	PH pts. were significantly younger, less severely ill, had shorter psychiatric histories, more insight, better employment histories and more perceived family support.

Table 2

Summary Of Other Partial Hospitalization Studies With Adults

Author	n	Length of stay	Type of subjects	Design	Measures	Outcome
Sullivan et al. (1991)	PH = 44	6 mos. = 25 4 mos. = 13 2 mos. = 6	Schizophrenia = 70% Affective = 30%	Comparison of characteristics of pts. completing program vs pts. not completing.	Assessment of symptoms (Self Assessment Scale) & clinician ratings of symptoms (GAS).	Pts. who completed tx. (6 mos.) performed better than those who did not. Clinician ratings is a reliable indication of who will complete.
Yoash-Gantz et al. (1987)	PH = 69	1 mo. = 33; less than 30 days = 15 discharge to IP = 11	--	Pre & post tx. comparison of pt. symptomology & pt. attitude.	Assessment of symptoms (Symptom Checklist-90-R - SCL-90-R) & attitudes (Colorado Psychiatric Hospital Factor Attitude Scale - CPH).	Pts. with favorable pretx. attitude did not benefit more than pts. with unfavorable pretx. attitude. Pts. with unfavorable pretx. attitude improved attitude. Pre to post tx. symptoms reduced in both groups.
Koistinen et al. (1992)	PH = 73	Average = 92 days	Schizophrenia = 30% Personality Disorders = 35% Affective = 12% Neurosis = 22%	Retrospective 3 yr. follow-up study of pts. using rehospitalization as a criterion.	Assessment of improvement based on rehospitalization rates, employment disability status & health/psychiatric status (Cornwell Medical Index)	Rehospitalizations during follow-up were independent of previous hospitalizations. Two pts. with diagnoses of schizophrenia & affective disorder were hospitalized more during follow-up than other diagnoses.

Table 2

Summary Of Other Partial Hospitalization Studies With Adults

Author	n	Length of stay	Type of subjects	Design	Measures	Outcome
Kamis-Gould et al. (1995)	116 (adole-scent data exclud-ed)	Average = 20 days	Schizophrenia = 8% Affective = 54% Anxiety = 18% Adjustment = 5% Substance Abuse = 1% Other = 8%	Retrospective outcome study of 6 PH programs. Records review of pre & post tx. status.	Assessment of effectiveness using DSM-III-R Axes IV & V ratings, pt. & clinician ratings on "standardized scales" & pt. satisfaction forms.	Most pts. improved. 33% showed "great improvement"; 33% showed "moderate improvement"; Length of stay was strongly related to greater improvement in functioning.

Note. Dashes indicate the data was not available. IP = inpatients; PH = partial hospital patients; OP = outpatients

Table 3

Demographic Characteristics of Partial Hospital Subjects

Characteristic	Frequency	Percent
Gender		
Males	15	42.9
Females	20	57.1
Ethnicity		
White	35	100.0
Marital Status		
Never Married	4	11.4
Divorced	2	5.7
Separated	1	2.9
Widowed	0	0.0
Married	28	80.0
Education		
High School	9	25.7
Vocational School	3	8.6
Associate's Degree	7	20.0
Bachelor's Degree	12	34.3
Graduate Degree	4	11.5
Employment		
Full-time	17	48.6
Part-time	4	11.4
Unemployed	5	14.3
Retired	3	8.6
Disabled	1	2.9
Homemaker	5	14.3
Financial		
less than \$12,000	3	8.6
\$25,000 - 34,000	3	8.6
\$35,000 - 49,000	9	25.7
\$50,000 - 74,000	8	22.9
over \$75,000	11	31.4
Dependents		
None	11	31.4
One	5	14.3
Two	5	14.3
Three	9	25.7
Four or more	5	14.3

Table 4

Descriptive Clinical Data of Partial Hospital Subjects

Characteristic	Frequency	Percent
Primary Diagnosis Axis I		
Schizophrenia or Psychotic Disorder	0	0
Mood Disorder	33	94
Anxiety Disorder	1	3
Eating Disorder	0	0
Substance Abuse	0	0
Adjustment Disorder	1	3
Attention-Deficit Disorder	0	0
Secondary Diagnosis Axis II		
Schizophrenia or Psychotic Disorder	0	0
Mood Disorder	4	11
Anxiety Disorder	9	26
Eating Disorder	1	3
Substance Abuse	2	6
Adjustment Disorder	0	0
Attention-Deficit Disorder	4	11
Axis II Diagnosis		
Personality Disorder NOS	23	66
None or Deferred	12	34
Length of Stay		
Less than 10 days	2	5.7
10-15 days	16	45.7
16-20 days	8	22.9
21-25 days	8	22.8
Over 25 days	1	2.9

Table 4

Descriptive Clinical Data of Partial Hospital Subjects

Characteristic	Frequency	Percent
Residence		
Metroplex	9	25.7
Outside Metroplex	12	34.3
Outside Texas	14	40.0
Living Situation		
Residence	8	22.9
Relative/Friend	8	22.9
Hotel/Rental	18	51.4
Other	1	2.9
Previous Treatment		
Inpatient Hospital	2	5.7
Outpatient Treatment	9	25.7
Neither	24	68.6
Post Discharge Treatment		
Inpatient	0	0
Day Hospital	0	0
Outpatient	22	88
Support Group	1	4
None	2	8

Table 5

Mean and Standard Deviation Scores for Dependent Measures and Norm Groups

Population	n	M	SD
		SCL-90-R	
Nonpatients	974	.31	.31
Psychiatric Outpatients	1002	1.26	.68
Psychiatric Inpatients	313	1.30	.82
Study	35	1.39	.67
		SAS-SR	
Nonpatients	482	1.59	.33
Acute Depressives	191	2.53	.46
Study	35	2.39	.45

Note. SCL-90-R = Symptom Checklist-90-Revised; SAS-SR = Social Adjustment Scale-Self-Report.

Table 6

Repeated Measures Analysis of Variance for Dependent Measures

Measure	Wilk's Lambda	F	df effect	df error	significance	Effect size	Power
SCL-90-R	.582	24.434	1.0	34.0	.000	.418	0.998
SAS-SR	.648	18.441	1.0	34.0	.000	.352	0.986
PEF	.181	130.980	1.0	29.0	.000	.819	1.000
TEF	.161	177.529	1.0	34.0	.000	.839	1.000

Note. SCL-90-R = Symptom Checklist-90-Revised; SAS-SR = Social Adjustment Scale-Self Report; PEF = Patient Evaluation Form; TEF = Therapist Evaluation Form.

Table 7

Multiple Analysis of Covariance for Dependent Measures

Measure	Wilk's Lambda	F	df effect	df error	Significance	Effect size	Power
SCL-90-R & SAS-SR	.885	1.42	2.0	22.0	.26	.115	.27

Note. SCL-90-R = Symptom Checklist-90-Revised; SAS-SR = Social Adjustment Scale-Self Report.

Table 8

Intercorrelations of Dependent Measures Using Difference Scores Between Admission and Discharge

Measure	1	2	3	4
1. PEF	--	.227	-.270	-.157
2. TEF		--	.148	-.382*
3. SCL-90-R		.	--	.388*
4. SAS-SR		.		--

Note. * $p < .05$

SCL-90-R = Symptom Checklist-90-Revised; SAS-SR = Social Adjustment Scale-Self Report; PEF = Patient Evaluation Form; TEF = Therapist Evaluation Form.

Table 9

Two Two-Way Analysis of Variance Between Admission and Discharge for
Dependent Measures

Measure	F	df effect	df error	Significance	Effect size	Power
SCL-90-R	17.057	1.0	33.0	.000	.341	.980
SAS-SR	3.480	1.0	33.0	.071	.095	.441

Note. SCL-90-R = Symptom Checklist-90-Revised; SAS-SR = Social
Adjustment Scale-Self Report.

Table 10

Mean and Standard Deviation Scores for Dependent Measures by Gender

Population	<u>M</u>	<u>SD</u>	<u>n</u>
SCL-90-R			
Males			
Admission	.963	.601	15
Discharge	.503	.418	15
Females			
Admission	1.704	.534	20
Discharge	1.031	.668	20
SAS-SR			
Males			
Admission	2.246	.483	15
Discharge	1.758	.431	15
Females			
Admission	2.490	.412	20
Discharge	2.209	.439	20

Note. SCL-90-R = Symptom Checklist-90-Revised; SAS-SR = Social Adjustment Scale-Self Report.

APPENDIX L
FIGURES

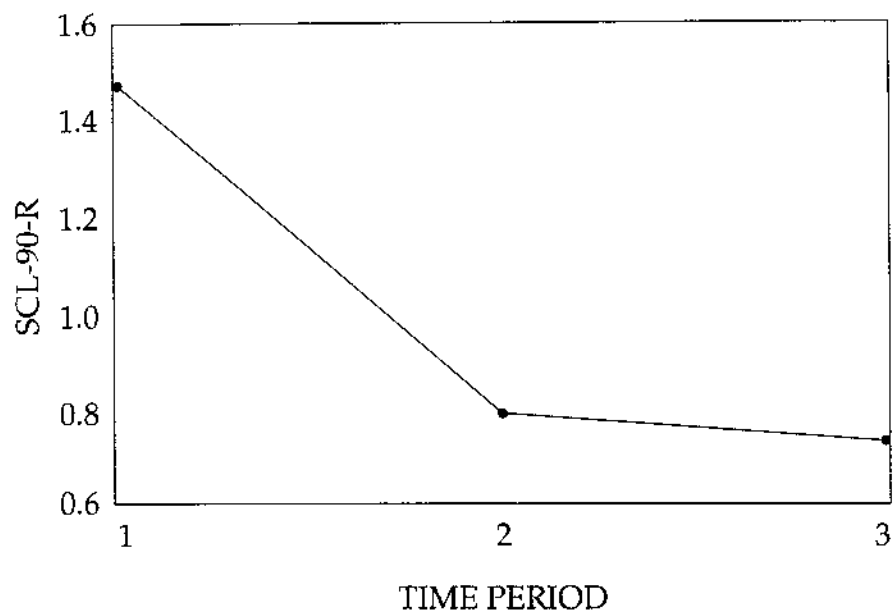


Figure 1. Mean changes in group scores on the Symptom Checklist-90-Revised (SCL-90-R) from time 1 (admission) to time 2 (discharge) to time 3 (three month follow-up)

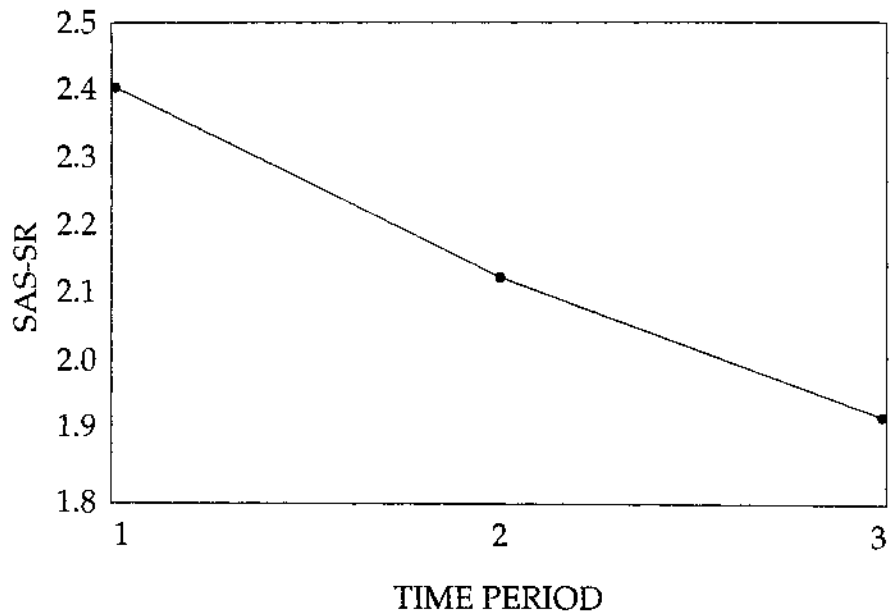


Figure 2. Mean changes in group scores on Social Adjustment Scale-Self Report (SAS-SR) from time 1 (admission) to time 2 (discharge) to time 3 (three month follow-up)

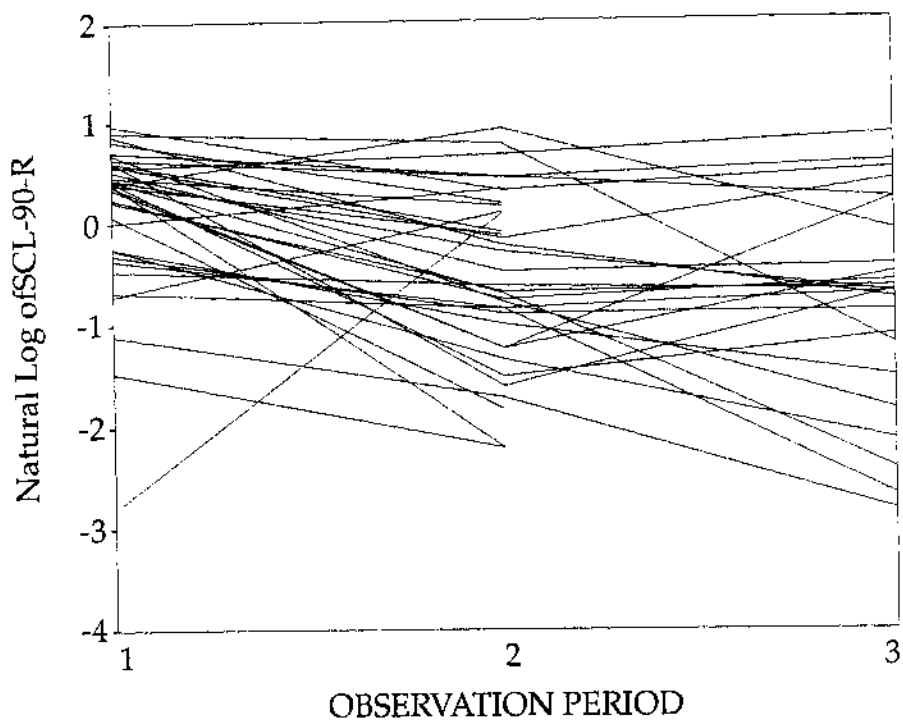


Figure 3. Natural log transformations of Symptom Checklist-90-Revised (SCL-90-R) and time periods of observation (i.e., time 1, time 2 and time 3)

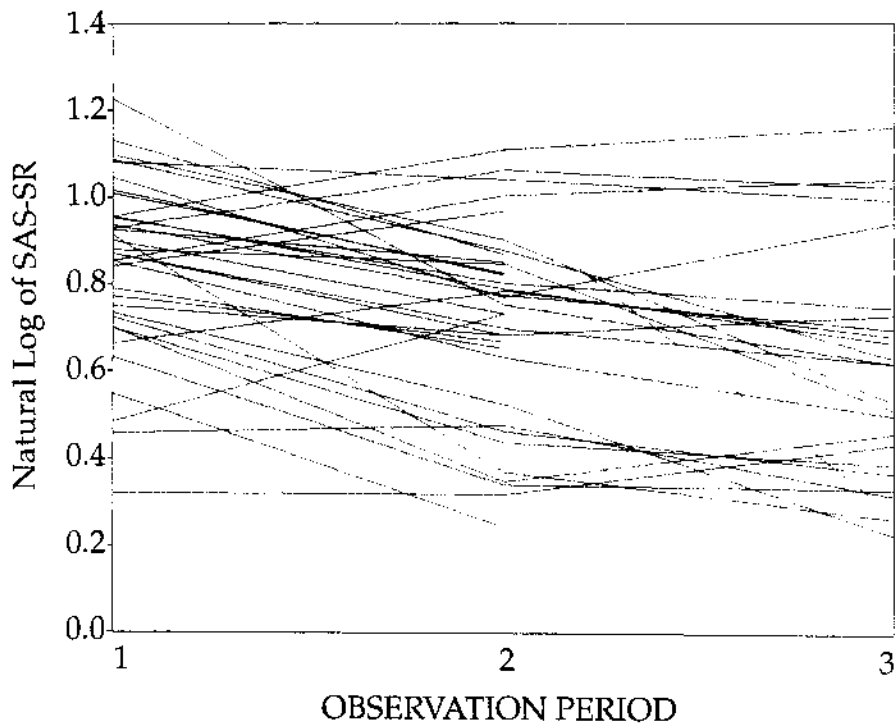


Figure 4. Natural log transformations of Social Adjustment Scale-Self Report (SAS-SR) and time periods of observation (i.e., time 1, time 2 and time 3)

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